

Developing Hope: The Impact of International Child Sponsorship on Self-Esteem and Aspirations

Key Words: Economic Development, Child Sponsorship, Aspirations, Self-Esteem
JEL Codes: O15, O22, D03

Paul Glewwe*
Phillip H. Ross**
Bruce Wydick***

March 2015

Abstract: Recent research (Wydick, Glewwe, and Rutledge, 2013) finds large and statistically significant impacts on schooling and employment outcomes from child sponsorship. This paper explores whether these impacts may stem not only from a relaxation of external constraints, but also from addressing internal constraints, specifically the development of aspirations among sponsored children. Exploiting an eligibility rule setting a maximum age for newly sponsored children to identify causal effects, we find that child sponsorship leads to large increases in educational and vocational aspirations among children in Kenya, and higher levels of happiness, self-efficacy, and hopefulness based on children's self-portrait data from Indonesia.

*Glewwe, Professor: Department of Applied Economics, University of Minnesota, 1994 Buford Ave, St. Paul, MN 55108, e-mail: pglewwe@umn.edu; **Ross, Doctoral Student: Department of Economics, Boston University, 270 Bay State Road, Boston, MA 02215, email: phross@bu.edu, ***Wydick, Professor: Department of Economics, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117, e-mail: wydick@usfca.edu. This paper combines and replaces two previous University of San Francisco working papers: Ross, Phillip H. and Bruce Wydick (2011) "The Impact of Child Sponsorship on Self-Esteem, Life-Expectations, and Reference Points: Evidence from Kenya;" Glewwe, Paul and Bruce Wydick (2012) "Child Sponsorship and Child Psychology: A Note on Evidence from Children's Drawings in Indonesia." We would like to thank Wess Stafford, Scott Todd, Javi Carillo, Teddi Auker, Kate Heryford, Laine Rutledge, Herman Ramirez, Eliana Zeballos, Alistair Sim, Marcela Bakir, Boris Zegarra, Catherine Mbotela, Peter Ndungu, and other local Compassion staff and enumerators in Kenya and Indonesia for logistical help and support in carrying out our field research. We also appreciate support and helpful comments from Alessandra Cassar, Boris Gershman, Pauline Grosjean, John Maluccio, Rebecca Thornton, and participants at the 2014 Annual Conference of the Association for the Study of Religion, Economics and Culture at Chapman University, the 2014 NEUDC Conference at Boston University and the 2015 ASSA Annual Meeting. We are grateful to the University of San Francisco's graduate program in International and Development Economics for substantial funding and resources for this research.

1. Introduction

Child sponsorship programs transfer resources from sponsors in wealthy countries to children in developing countries, helping provide these children access to healthcare, nutritious meals, tuition, and school uniforms. Wydick, Glewwe, and Rutledge (2013, 2015) find large and statistically significant impacts from Compassion International’s child sponsorship program on future education outcomes, employment outcomes, income, and adult wealth. These findings include a 1.0-1.5 year increase in years of completed schooling, a 12-18 percentage point increase in secondary school completion (over a baseline rate of 44.5 percent), a 6.6 percentage point increase in the probability of white collar employment (over a baseline rate of 18.7 percent), and a \$13-19 increase in monthly income (over a baseline of \$75).

The emphasis of many child sponsorship programs, including the Compassion program, however, is not only on the relief of external constraints such as access to healthcare and schooling, but also on the relief of *internal* constraints. These internal constraints of the poor, which may be strongly manifested in children, can involve feelings of hopelessness, lack of empowerment, low aspirations, a diminished sense of self-efficacy, and low self-esteem. Above all else, these programs claim to bring “hope” to children, and Compassion places a particular emphasis on the development of children’s aspirations.

In this paper we investigate the impacts of the Compassion International child sponsorship program on the self-esteem, life-expectations and other psychological characteristics of 1,112 children in Indonesia and Kenya. The question we address is whether the large impacts on adult life outcomes of formerly sponsored children found by Wydick, Glewwe, and Rutledge could have been caused through psychological changes fostered by the program during the period when the children were sponsored. It is possible that the relief of

external constraints from child sponsorship is solely responsible for these improved adult outcomes, and that changes in children's psychological traits due to the program are ancillary to the process. Indeed if we were to find no impact on children's psychology from child sponsorship, we could rule out impacts of the program on child psychological traits as a causal channel for the positive impacts from child sponsorship on adult life outcomes found by Wydick, Glewwe and Rutledge. Thus we view a finding of significant psychological impacts on children as a critically important and necessary (but not sufficient) condition for a causal impact of heightened aspirations on adult outcomes.

A growing literature in behavioral economics explores the relationship between self-esteem and economic outcomes. Bénabou and Tirole (2003), for example, show that empowering and encouraging an individual can raise self-esteem, which may in turn raise achievement. Darolia and Wydick (2011) find that actions such as parental praise designed to foster an increase in self-esteem result in academic achievement in university undergraduates above what natural ability alone would produce.

Another important strand of the literature has sought to understand the role of internal constraints among the poor, especially in the areas of self-esteem and aspirations, and its effect on economic development. Much recent theoretical work in development economics has shown how low aspirations can lead to development traps (Ray 2006; Genicot and Ray 2014; Dalton, Ghosal, and Mani, *forthcoming*). Ray (2006), for example, discusses how failed aspirations and poverty are reciprocally linked in a self-sustaining trap. Genicot and Ray (2014) demonstrate how aspirations failures can lead to a divergence in investment and thus growing income inequality.

Recent field experiments have also explored the importance of psychological variables for development. Using a randomized field experiment in South Africa, Bertrand et. al (2010) test the role of psychological factors in credit and saving decisions, while Duflo, Kremer, and Robinson (2011) explore

nudges and fertilizer take-up among Kenyan farmers using models of procrastination from the economics and psychology literature. Several recent empirical studies have also explored the role of aspirations in development (Macours and Vakis, 2009; Bernard, Dercon, and Taffesse, 2011; Beaman et al., 2012; Bernard et al., 2014). The paper most closely related to ours is the study by Chiapa, Garrido, and Prina (2012), which uses a difference-in-differences approach to evaluate the impacts of Mexico's PROGRESA program on parents' educational aspirations for their children. They find that the aspirations of parents for their children's education increased by almost half of a school year among high-exposure households, and that there is a positive correlation between parental aspirations and their children's educational attainment. However, they do not investigate the aspirations of the children themselves.

We seek to contribute to this emerging literature on the importance of aspirations for economic development. When positive impacts of child sponsorship became apparent during the course of our study on adult life outcomes (Wydick, Glewwe and Rutledge, 2013), we began exploring the role of aspirations development in sponsored children. Small-scale pilot surveys in Bolivia, India and Kenya revealed positive correlations between child sponsorship status and higher educational and vocational aspirations (Ross 2010). This led us to implement studies in Kenya and Indonesia that were larger and, more importantly, permitted us to choose village sponsorship projects that had been rolled out sufficiently recently to allow for estimation of causal impacts via an age-eligibility-rule instrument similar to that used by Wydick, Glewwe and Rutledge (2013).

The survey instruments in both Kenya and Indonesia included direct questions related to measurement of self-esteem and aspirations. In addition, our study in Indonesia adds a new element taken from the psychology literature that we feel is especially relevant for children: the psychoanalysis of children's drawings (Koppitz, 1968; Klepsch and Logie, 1982; Furth, 2002). In this

exercise, we asked 526 children living in the slums of Jakarta to “Draw a picture of yourself in the rain.” Based on a history of empirical research in child psychology that has correlated characteristics of children’s self-portraits with different aspects of mental health and disorder, we coded 20 attributes of these children’s drawings. Using our vector of age-eligibility instruments to identify causal effects, we find that sponsored children’s drawings reveal significantly greater levels of self-esteem and emotional health across a large number of these drawing attributes. Combined with our direct survey data, which also find significant differences in educational and vocational aspirations, we find that child sponsorship strongly and positively impacts a wide array of psychological measures in children.

Our analysis consists of three parts: (1) survey results from Kenya utilizing the age-eligibility instrument to compare sponsored children to their siblings; (2) survey results from Indonesia that utilize the same instrument to compare sponsored children to their siblings, and to compare differences between sponsored children and their siblings to differences between children that were on the sponsorship waitlist and their siblings; and (3) psychological analysis of drawings from Indonesia.

2. Description of Survey and Fieldwork

2.1 Description of the Compassion Program

Compassion is a faith-based Christian organization that currently supports over 1.3 million children in 26 countries, making it the third largest child sponsorship organization worldwide. Wydick, Glewwe, and Rutledge (2013) estimate that 9.14 million children are sponsored through various sponsorship organizations worldwide, and that this represents a transfer of approximately \$3.4 billion dollars annually. These programs have been in existence for decades and typically involve a monthly payment of around \$25-\$40 that funds the provision of healthcare, education, clothing, food, and other

support for the sponsored child and/or the community in which he or she lives. Additionally, they foster a relationship between the child and the sponsor through the exchange of letters, photos, and gifts. (For a more detailed description of the Compassion program, see Wydick, Glewwe, and Rutledge, 2013; one minor difference between the Compassion projects in this study and those implemented in the 1990s, which were the focus of that study, is that in most countries the age-eligibility rule has been gradually lowered from 12 to 9 years of age.).

In this study we focus on the aspects of the Compassion program that seek to develop children's self-esteem and aspirations. These aspects, which make child sponsorship different from programs that provide only educational inputs, include the exchange of letters with sponsors,¹ which exposes the children to a world outside of their village. It also includes the support network fostered by the Compassion program through its alumni, who – directly or indirectly – influence currently sponsored children through their own accomplishments. More generally, Compassion programs place a significant emphasis on self-esteem building, character development, and raising self-expectations.

2.2 Survey Fieldwork

Our studies of children in Kenyan and Indonesian communities, which compare psychological variables such as self-esteem and life aspirations between sponsored and unsponsored children in the same community, were designed to exploit the above-mentioned age-eligibility rule to identify the causal impact of sponsorship on the psychological characteristics of children. Table 1 provides information on how the study was implemented in seven communities across the two study countries. In each of the study sites, a survey questionnaire was used

¹ The average number of letters or gifts received per year from their sponsors reported by sponsored children was 3.4 in Kenya and 2.7 in Indonesia.

to obtain basic information about the respondent such as age, gender, level of formal schooling, religion, sponsorship information, and family characteristics such as language spoken at home and the occupation and highest level of education of each parent. In addition to this basic information, the survey questionnaire also included a series of questions designed to elicit each child's expectations for occupation and level of education, as well as a battery of questions intended to measure self-esteem. Summary statistics for the data collected are shown in Table 3.

2.2.1 Kenya

The study in Kenya was carried out in three villages from May to July of 2011. These villages were randomly sampled from a list of all villages within a three-hour journey by car from Nairobi that had a Compassion program that was first implemented between 2002 and 2004. The program started in one of these sites in May of 2003, and in the other two sites in December of 2003. This time frame was chosen to exploit the age eligibility criteria of the program that newly sponsored children must be between the ages of three and nine years old. This allows us to use age at the time of program roll-out as an instrument for sponsorship. The survey questionnaire was written in English, but the questions were translated into Swahili or the local mother tongue at the discretion of the enumerators as to what they believed would be the most effective way to communicate with each child.

The survey sample consisted of three groups: currently sponsored children, the next oldest non-sponsored sibling and the next youngest non-sponsored sibling. No children were surveyed from families in Kenya that did not have sponsored children. Within each of the three villages, 110 children were randomly sampled from the population of currently sponsored children between the ages of 12 and 16, for a total of 330 currently sponsored children. Of these, we successfully surveyed 326 (98.8%). Once we located the sponsored child, we then interviewed the next oldest and the next youngest siblings. There

were 243 of these siblings between the ages of 10 and 18, of which we interviewed 237 (97.5%). Of the six who were not interviewed, two were mentally disabled, two were older siblings who had left the village because they had married, and two had left the village to find work. For these last four either we did not get permission from a parent to contact them or we could not locate them without a great amount of difficulty.

For 11 of the 326 (3.4%) currently sponsored children, the next youngest or next oldest sibling was also sponsored (even though the rule in Kenya allowed only one sponsored child per family) but was not one of the 330 randomly sampled currently sponsored children. Four of these 11 sponsored siblings were sponsored due to the twin rule, which stipulates that if one twin is sponsored, the other must also be sponsored, and five were due to cases of extreme poverty in the family, in which case more than one child is allowed to be sponsored. The remaining two cases may have been due to some level of favoritism in one of the villages, as the local pastor had all of his age-eligible children sponsored, although only two of them fell into our target age range. In these cases, we would interview this extra sponsored sibling provided they were between 10 and 18. If this extra sponsored sibling was older, we would then interview the next oldest after this extra sponsored sibling if that sibling was 18 or younger. If the extra sponsored sibling was younger, we interviewed the next youngest after the extra sponsored sibling if the next youngest was 10 or older. In these 11 instances, the sponsored siblings were always contiguous in birth order, and there was never a third sponsored sibling contiguous in birth order that was between the ages of 10 and 18. Thus, in these instances, we have up to four children interviewed in a family, two sponsored and two non-sponsored.

In total, the survey was administered to 570 children: 333 that were sponsored, 154 next older non-sponsored siblings and 83 next younger non-sponsored siblings, all with the same mother and father within a household. The survey was administered to the children individually by enumerators who were

university students or recent graduates; these enumerators were not affiliated with the Compassion program.² It was made clear to the child that the studies were confidential, independent of Compassion, and no one from Compassion or anyone else would know any of their responses. Most interviews took place in the children's schools and homes, away from any potential influences such as teachers, parents, and Compassion staff. For example, if interviewed at a school the enumerators would interview the children either in an empty room or somewhere outside that was not within earshot of any teachers or other school officials. If interviewed in their homes, parents and other siblings would be asked to wait either inside or outside (wherever the interview was not taking place) or the child was taken to the opposite side of the house. Surveys were never administered in the local church or Compassion center.

While most of the children were interviewed in the village they grew up in, some of those in secondary school were attending boarding school in another part of Kenya, which required up to one day of travel for an enumerator to reach. Additionally, a few older siblings that had left home to find work were located and interviewed in Nairobi or Nakuru.³

2.2.2 Indonesia

Researchers carried out the Indonesia fieldwork in four Compassion project sites in the capital of Jakarta from May to July of 2012. The sites were selected for fieldwork based on the year of program implementation in order to

² Since Compassion's implementing church partner often had a large role in the communities of these villages, and we hired enumerators that knew the members of the village well, a couple of the hired enumerators may have had some informal volunteer role in the church, but no affiliation with the Compassion program. Sponsored children would commonly participate in church activities outside of Compassion's program hours, and it is possible that one or two of the enumerators were involved in these activities and thus would have had some kind of relationship with some of the sponsored and non-sponsored children through the church and the community but outside of Compassion.

³ Nakuru is Kenya's fourth largest city and the closest major city to Njoro, one of the selected villages.

gain maximum advantage of our age-eligibility-rule estimation strategy. Two of these projects started in February 2003 and two in February 2007.

In Indonesia we were able to use children on the waitlist for sponsorship and their own siblings as quasi-controls in the sample. Due to Compassion's age eligibility rule, children on the waitlist were between three and 9 years old at the time of survey. Each of the sites provided a list of sponsored children and waitlisted children from which subjects were randomly chosen for the study. Each randomly chosen child from these lists was instructed to bring one sibling with them to the research site.⁴ In Indonesia, which had an upper limit of two sponsored children per family, data were gathered from 288 sponsored children, 113 unsponsored siblings of sponsored children, 79 waitlisted children, and 47 children who were siblings of waitlisted children.

The selected children and their siblings were asked to come at a specific day and time to the particular site. Each pair of children was then greeted by a graduate student researcher and the enumerator, who randomly selected one of the pair and asked that child to "Draw a picture of yourself in the rain." They were provided with a desk, a sheet of white paper, and a full set of 24 colored pencils; they were told that they would have fifteen minutes to complete the drawing. Meanwhile the other child was administered a survey that included a group of questions about the subject's characteristics and living conditions, as well as questions similar to the questions asked in Kenya about self-esteem, hopefulness about the future, social trust, spiritual depth, and reference points with regard to expected education and occupation, followed by a time preference game. After both children had finished, they switched activities.

⁴ The sibling could be either sponsored or unsponsored, but had to be within the relevant age range; 83.4% of children brought a proximate sibling in birth order. Because of eligibility rules, in 57.7% of cases the sibling was either not a sponsored child or on the waitlist.

3. Empirical Strategy

3.1 Establishing Causality

In order to estimate the impact of sponsorship on the variables of interest, we begin by using ordinary least-squares (OLS) with community or household fixed effects and robust standard errors clustered at the household level. This specification is used to avoid bias due to unobservable differences across communities, each of which consisted of different ethnic groups and different Christian denominations as implementing church partners. Therefore our initial specification identifies program impacts by comparing only differences within communities or households. More specifically, we estimate one of the following two equations:

$$y_{ij} = \alpha_j + \gamma T_{ij} + \boldsymbol{\beta}' \mathbf{X}_{ij} + e_{ij} \quad (1)$$

$$y_{ij} = \alpha_j + \gamma T_{ij} + \boldsymbol{\beta}' \mathbf{X}_{ij} + \pi C_{ij} + e_{ij} \quad (1')$$

where T_{ij} is a dummy variable for current sponsorship of individual i in community/household j , α_j is a community or household fixed effect, \mathbf{X}_{ij} is a vector of control variables that includes age, gender, birth order, parents' education and family size⁵, and C_{ij} is a dummy variable indicating a household with a sponsored child, which applies only to Indonesia, where both sponsored and non-sponsored (i.e. waitlisted) households were surveyed. Equation (1) can be estimated using data from both countries, while equation (1') can be estimated only using the data from Indonesia, since the Kenya data do not include children from non-sponsored households (which implies that C_{ij} equals one for all observations).

While estimates of (1) and (1') using community fixed effects control for unobserved differences across communities, there remain two potential sources of bias when estimating the causal impact of the Compassion program:

⁵ Note that we define family size as the number of children in the household, e.g. if a child has 4 siblings their family size would be 5.

endogeneity in the selection of households into the program, and endogeneity in the selection of children within a particular household. We account for the former in two ways. First, we include in our sample only families that were selected into the program in Kenya and Indonesia, or were waitlisted in Indonesia, in our analysis. That is, we estimate the average treatment effect of the sponsorship program on the treated (ATT), as opposed to the average treatment effect (ATE) on the general population. Second, we also present household fixed effects estimates, which account for unobserved heterogeneity in household characteristics.

We account for the latter source of bias by using instrumental variables that predict which siblings within program households are selected by their parents to participate in the program. More specifically, and consistent with Wydick, Glewwe, and Rutledge (2013), we find that a child’s age at the time of program roll-out is strongly correlated with sponsorship, making it a natural instrument for sponsorship. As in Wydick, Glewwe, and Rutledge (2013), the instrumental variables are a vector of dummy variables for age at program rollout.

For these instrumental variable estimations, the first stage equations are:

$$T_{ij} = \alpha_j + \boldsymbol{\varphi}'\mathbf{X}_{ij} + \boldsymbol{\lambda}\mathbf{Z}_{ij} + u_{ij} \quad (2)$$

$$T_{ij} = \alpha_j + \boldsymbol{\varphi}'\mathbf{X}_{ij} + \boldsymbol{\lambda}\mathbf{Z}_{ij} + \delta C_{ij} + u_{ij} \quad (2')$$

where α_j , T_{ij} , \mathbf{X}_{ij} and C_{ij} are the same as in equations (1) and (1'), and \mathbf{Z}_{ij} is a vector of dummy variables that indicate age (in years) when the program rolled out in community j . More specifically, there are separate dummy variables for each year of age for children 9 and younger when the program rolled out, plus one dummy variable for children -3 years and younger (i.e., were born 3 years or more after the program was rolled out) and another for children ten years and

older.⁶ Equation (2) can be estimated using data from both countries if the non-sponsored households from the Indonesia sample are excluded. Equation (2') can also be estimated only for the data from Indonesia, since the Kenya data do not include children from non-sponsored households.

Figure 1 shows, for both Kenya and Indonesia, the probability that a child was sponsored as a function of his or her age at the time the program was introduced in his or her community. It is clear that children from about age 3 to age 9 when the program was introduced in the area were far more likely to be sponsored than other siblings. Regression estimates of equations (2) and (2') yield the probability of being selected for sponsorship within each household. Table 2 presents results from the first stage estimation using this vector of dummy variables to predict the probability of sponsorship. The F -statistic for this ranges between 21.9 and 29.4 for Indonesia and between 59.0 and 335.5 for Kenya, indicating that this is a strong instrument. Note that the estimations presented include only the excluded instruments.

The second-stage equations are

$$y_{ij} = \alpha_j + \gamma \hat{T}_{ij} + \beta' \mathbf{X}_{ij} + e_{ij} \quad (3)$$

$$y_{ij} = \alpha_j + \gamma \hat{T}_{ij} + \beta' \mathbf{X}_{ij} + \pi C_{ij} + e_{ij}, \quad (3')$$

where y_{ij} is an outcome variable of interest, \hat{T}_{ij} is the instrumented probability of being a sponsored child, and α_j , \mathbf{X}_{ij} and C_{ij} are the same as in equations (1) and (1') (and (2) and (2')). Assuming that age at program rollout is orthogonal to y_{ij} , after conditioning on age, sibling order, gender, and other characteristics, IV estimations remove bias due to intra-household selection among age-eligible

⁶ Due to differing age ranges of respondents at the time of the surveys, the youngest respondents in the Kenyan survey analysis in section 4.1 were 2 at the time of program rollout, while in the Indonesian analysis the youngest were 5 years from being born (-5) at time of program rollout. In the Indonesian analysis, -4 and -5 are grouped with -3 since there were so few respondents that fell into the former two categories (7 and 1, respectively).

children. We use standard errors clustered at the household level for all estimates.

3.2 Summary Indexes

Our survey questionnaire provides multiple measures of the sampled children’s psychological well-being. One potential problem with using each of these measures in separate regressions is that, even if the impact of sponsorship on all of these outcomes of interest were equal to zero, one is still likely to find a “significant” impact if one runs regressions for a large number of outcome variables. We address this problem of multiple inference by utilizing the summary indices proposed by Anderson (2008). Summary index tests are robust to over-testing and provide a statistical test for whether a program has a “general effect.” They also have higher statistical power than tests of individual variables. Outcomes within an *a priori* grouping are demeaned and normalized,⁷ and then each element is weighted using the elements of the variable’s corresponding row from the inverse of the covariance matrix that includes all variables within the relevant family.⁸ Weighting each variable by the sum of its corresponding row (or column) entries of the inverse covariance matrix allows variables that contain more unique information to enjoy a higher weight in the summary index.

We construct three summary indices from the sampled children’s responses to psychosocial questions: self-esteem, optimism, and aspirations. The first uses the standard questions from the Rosenberg (1965) Self-Esteem scale, the second uses questions from the General Social survey, and the aspirations index is generated based on responses to questions on hopes for adult occupation, expectations for adult occupation, and expected educational attainment.

⁷ In our analysis, this grouping is done at the village level.

⁸ Note that this is an efficient generalized least squares estimator (Anderson 2008).

3.3 Factor Analysis

To analyze the drawings done by the children in Indonesia, we use exploratory factor analysis as a data reduction tool in order to extract latent psychological factors from observable features of those drawings (those features are summarized in Table 11, and will be explained further in section 4.3). Factor analysis is commonly used as a psychometric tool to create latent factors that summarize the common variation in observed sets of variables and is increasingly used by economists to avoid problems associated with over-testing and to uncover a general effect of a program based on a set of correlated variables (see Borghans et al. 2008). We apply exploratory factor analysis to the children’s drawings using a varimax rotation, which yields three orthogonal factors related to children’s psychological well-being: happiness, self-efficacy, and hopelessness.

4. Empirical Results

Table 3 presents summary statistics, separately for Kenya and Indonesia. Since the summary indices are demeaned and normalized within communities, these values are not exactly equal to zero, but are very close. Some notable differences include the fact that respondents in Kenya were more likely to hope for and expect a white collar job (0.900 and 0.818, respectively, vs. 0.552 and 0.557 in Indonesia), and were about 3 years older and had 1.2 more siblings, on average.

4.1 Kenya

Table 4 provides additional summary statistics for the Kenya sample. Simple *t*-tests (with robust standard errors clustered at the household level) indicate that sponsored children, when compared with their non-sponsored siblings, were 0.137 standard deviations higher on the self-esteem index, 0.099 standard deviations higher on the optimism index, 4.6 and 7.8 percentage points

more likely to state that they hoped for or expected to have a white collar job, respectively, expected to achieve 0.30 more years of education and were 0.185 standard deviations higher on the personal aspirations index.

Table 5 presents the results from estimating equation (1) using four different specifications. Panel A controls for community fixed effects but has no other controls. Panel B adds controls for age at time of survey, gender, interviewer fixed effects, birth order, family size, parents' education, and missing parents' education. Panels C and D mirror Panels A and B except that they use household fixed effects. All standard errors are clustered at the household level; while ideally it may be better to cluster at the community level in Panels A and B, there are too few communities to do so given that clustered standard errors require 30-40 clusters for reliable inference, and in any case community fixed effects do allow for correlation of unobservables within communities.

The estimated impact of sponsorship on the self-esteem index in column 1 is an increase of 0.14 to 0.16 standard deviations; these estimates vary little across the four specifications and all are statistically significant. In contrast, the results in column 2 show little or no impact of sponsorship on optimism. There is a 3.8 to 6.6 percentage point increase in the probability of hoping for a white collar job, as seen in column 2, although this impact is imprecisely estimated. Column 4 shows a 6.5 to 8.2 percentage point increase in the probability of expecting to obtain a white collar job, but these impacts are also imprecisely estimated. Sponsored children expect to achieve 0.14 to 0.32 more years of education, as seen in column 5, and scored 0.11 to 0.19 standard deviations higher on the aspirations index (column 6); the community fixed effects estimates are highly significant, but the household fixed effects estimates, while similar in magnitude, are at best only marginally significant.

While these OLS results are generally large in magnitude and often statistically significant, they are not necessarily estimates of causal effects. In order to address this, we estimate equation (3) using the vector of age at

program rollout dummy variables as instruments for sponsorship. The first stage results from equation (2) show that the instruments are strong, with an F -statistic ranging from 68.1 to 315.6 (Table 2). The strong first-stage results stem from the fact that children over 9 years old at the time of project implementation had virtually no chance of being sponsored and that children who were in the 3-8 age range when the program started in their community had a very high probability of being sponsored.

The IV estimations in Table 6 yield impacts that are similar to, or in some cases larger than, those of the OLS estimates in Table 5.⁹ Sponsorship leads to an increase in the self-esteem index of 0.10 to 0.19 standard deviations. The impact of sponsorship on optimism is essentially zero, which is consistent with the OLS estimates. Column 3 shows that sponsored children are 9.3 to 12.3 percentage points more likely to hope for a white collar job, which is about twice the magnitude of the coefficients from the OLS estimations. They are also 8.3 to 12.9 percentage points more likely to expect a white collar job, as seen in column 4, which is somewhat larger than the OLS estimates. Sponsored children expect to achieve 0.28 to 0.41 additional years of education in column 5 and the final column of Table 6 shows that sponsorship increased children's aggregate educational and vocational aspirations by 0.29 to 0.40 standard deviations, which is more than double the OLS estimate of 0.11 to 0.19. Overall, the IV estimates from Kenya are either similar to, or somewhat larger than, the corresponding OLS estimates in Table 5, and most of them are statistically significant. This provides strong evidence of enhanced self-esteem and aspirations of sponsored children relative to their non-sponsored siblings.

⁹ The standard errors are again clustered at the household level only. In addition to the asymptotic nature of clustered standard errors mentioned above, another reason why the standard errors are not clustered at the community level is that this is not possible because the number of instruments exceeds the number of clusters.

4.2 Indonesia Survey Results

To explore the external validity of the Kenya results, we collected similar data in Indonesia. An important difference between the Indonesia data and the Kenya data is that the non-sponsored children in the Indonesia study also include children from non-treated households who were on the waitlist for entry into the program at the time of survey, as well as those children's siblings. Another difference is that the age range of the children in the Indonesia sample is wider than that of the children in the Kenya sample; appendix Tables A1 and A2 present results that restrict the Indonesia sample to the same age range as in Kenya, 10-18.¹⁰ Table 7 provides summary statistics for the full sample, separately for sponsored and non-sponsored children. Although there are no significant differences between sponsored and non-sponsored children in terms of self-esteem, aspirations, and hope for a white-collar job, sponsored children had higher levels of optimism (0.14 standard deviations) and expected to achieve 0.63 more years of education than non-sponsored children. Unexpectedly, they were 8.0 percentage points less likely to report that they expected to obtain a white collar job, but this is significant only at the 10 percent level, and it could also reflect that Compassion tended to choose the neediest children for sponsorship.

Table 8 presents OLS estimations of equation (1') controlling for treated household and community fixed effects in Panel A. Panel B does the same with additional controls for interviewer, age, gender, birth order, and size of family.¹¹ Panels C and D are the same as Panels A and B, except that they use household

¹⁰ Since all children on the waitlist were currently age eligible, i.e. between 3 and 9 years of age, in these appendix tables the comparison group in waitlist households is only siblings of those on the waitlist who were 10 years or older, with the exception of two children on the waitlist who were 10 years old. The results are similar to those discussed below.

¹¹ Data on parental education were not collected in Indonesia.

fixed effects instead of community fixed effects.¹² All specifications cluster standard errors at the household level. The coefficient on sponsored child in each panel represents the difference between sponsored children and their non-sponsored siblings. The coefficients on sponsorship are generally small in magnitude and statistically insignificant, with the sole exception of one point estimate for years of expected education (0.43 years), which is larger in magnitude than the corresponding OLS estimates in Table 5 for Kenya (0.14 to 0.32 years).

We also present results summing the coefficients on sponsored (γ) and sponsored household (π) in Panels A and B in order to facilitate comparison to the children in waitlisted households. Here, we find that sponsored children scored 0.16 to 0.26 standard deviations higher on the optimism index and expected to achieve 0.56 to 0.76 years more of education than respondents in waitlisted households. The impacts of sponsorship on self-esteem and aspirations are weakly positive when compared to children in waitlisted households, but are statistically insignificant.

Table 9 presents 2SLS estimations of equation (3'), instrumenting for sponsorship with dummy variables for age at program rollout, which are analogous to the OLS estimates in Table 8. Sponsored children scored 0.09 to 0.36 standard deviations higher on the optimism index than their siblings, and three of these four estimates are statistically significant. They expected to achieve 0.21 to 0.53 more years of education; while this impact is not statistically significant it is larger than the statistically significant Kenya results in Table 6 (0.28 to 0.41 years). They also scored 0.13 to 0.26 standard deviations higher on the aspirations index, but these estimates are not statistically significant. There is no evidence of any significant impacts on self-esteem, hope for a white collar

¹² Note that this means that Panels C and D contain only treated households, as waitlist households would all have a zero for the sponsorship dummy. Additionally, panel D does not control for family size, since this does not vary within households.

job or expectation of getting a white collar job. When compared to those in waitlisted households, panels A and B show that sponsored children scored significantly higher on the optimism index by 0.20 to 0.29 standard deviations, and expected to achieve 0.59 to 0.72 years more of education.

Since the selection of the non-sponsored child within a family was not random, as a robustness check we examined families that had only one or two children and thus there could not have been bias in the selection of the non-sponsored child in the family that participated. Tables A3 and A4 duplicate Tables 7 and 8 for this sub-sample. While the larger standard errors due to a much smaller sample size yield no statistically significant results, the point estimates are very similar in magnitude.

4.3 Indonesia Drawings

Each child who participated in the study in Indonesia was invited to sit at a small desk or table and was given a white sheet of paper with a new box of 24 colored pencils. These children were then asked to “Draw a picture of yourself in the rain.” Children's self-portraits have been analyzed in an extensive psychology literature, and often yield insightful information into the psychological makeup of children that is more difficult to obtain accurately from direct survey questions. The correlation between these drawings and their respective psychological attributes is taken from classic studies in the human figure drawing literature, including Koppitz, (1968), Klepsch and Logie (1982), Thomas and Silk (1990), and Furth (2002). Twenty drawing characteristics were measured from these drawings; these characteristics were taken from the psychology literature and were chosen before any analysis of the drawings, and none were added or dropped after the empirical analysis began. Each characteristic was given a score of one or zero, where one indicated that the drawing exhibited that characteristic. The only exception was the “weather” characteristic, which received a value of -1 for lightning, 1 for the presence of the

sun, and zero for neither. Table 10 provides summary statistics on our measures of these characteristics, where a carrot symbol (“^”) indicates measures for which a positive value represents a negative psychological outcome.

As can be seen from simple *t*-tests (with robust standard errors clustered at the household level) in Table 10, 13 of the 20 measures display statistically significant differences between sponsored and non-sponsored children, and 11 of these indicate an unequivocally more positive psychological outcome for sponsored children. Moreover, one of the two variables indicating poorer psychological health, “long arms,” which describes a self-portrait with abnormally long arms, is ambiguous; it has been associated with both emotional neediness as well as affection for others. The other, “huge figure,” has the smallest impact difference in terms of both magnitude and statistical significance among our statistically significant differences.

Figures 2-4 provide examples of children's drawings that show variation in happiness, self-efficacy, and hopelessness, the three factors we generated by conducting exploratory factor analysis on the drawing data. Figures 2a and 2b illustrate differences in happiness between two children of roughly the same age, where facial expression and body language display remarkable contrast between the two drawings, such that the drawing in 2a ranks in the only the 17th percentile in the Happiness factor, while the drawing on the right in 2b ranks in the 92nd percentile.

Figures 3a and 3b show two children's drawings ranking in the 8th percentile and 94th percentile, respectively, in Self-Efficacy/Optimism. Salient characteristics of the drawing in 3a with negative correlations to the latent factor include the use of a single color, the presence of lightning, and poor integration of body parts. These contrast to the multiple light colors used in 3b, the presence of a sun above the clouds, and the child using an umbrella to protect herself from the rain.

Figures 4a and 4b illustrate differences in our Hopelessness factor, where the drawing on the left (4a) was done by a teenage girl and the drawing on the right (4b) by a boy in primary school. Note the missing facial features and hidden limbs in the girl's self-portrait on the left, all factors correlated with hopelessness and depression. In contrast, the bright colors used by the boy on the right, facial expression, full illustration of facial features and limbs, and use of the umbrella are self-portrait characteristics that have been empirically correlated with hopefulness in children (Klepsch and Logie, 1982, Furth, 2002).

Table 11 shows rotated factor loadings from an analysis where we allowed for three factors, that is latent variables that explain observed phenomena. A number of criteria can be used in deciding the number of factors retained in an exploratory factor analysis.¹³ We allowed for three factors because we found that this number allowed for the most distinguishable and identifiable differences between latent factors that were consistent with our hypothesis that child sponsorship has an impact through its effect on children's self-esteem, aspirational development, and sense of hope for the future. We named the three factors based on correlations between each factor and five variables in our survey (three that represent hope and two that represent self-esteem¹⁴) and the twenty drawing characteristic variables from the children's drawings. We labeled Factor 1 "Happiness" because it is very strongly positively correlated with a smiling self-portrait and negatively with a frowning or crying self-portrait. It is also negatively correlated with a list of missing body and facial parts, the lack of which are correlated with emotional disturbance. We named Factor 2 "Self-Efficacy/Optimism" because it was strongly correlated with cheery colors, positive body language, and especially

¹³ See Thompson (2004) for an excellent review.

¹⁴ The three Hopefulness questions in order are: "Do you believe that the future holds good things for you?", "When you are old, will you have a good job and income?", "Will your adult life be better than that of your parents?", and the two Self-Esteem questions in order are: "Do you sometimes think that you do not have much to be proud of?", "At times do you think that you are not much good at all?"

with the self-portrait figure holding an umbrella or taking shelter proactively from the rain. Factor 3 was a negative latent psychological factor that we called “Hopelessness” because, congruent with the existing empirical literature, it was strongly correlated with poor integration of body parts, missing facial features, a self-portrait drawn in a single color, drawn as a monster figure, and was strongly correlated with our two (low) self-esteem questions. The varimax rotation creates factor loadings such that factors are uncorrelated with each other. Table 12 provides summary statistics on the three factors assembled. From simple t -tests, sponsored children scored 0.203 standard deviations higher on the happiness factor, and 0.221 higher on the self-efficacy factor, and 0.338 lower on the hopelessness factor.

Table 13 presents estimates of equation (1') and (3'), with community or household fixed effects, on the happiness, self-efficacy, and hopelessness factors. We present specifications without additional controls and specifications that control for age, gender, birth order, and family size. Again, all estimations cluster standard errors at the household level. Panel A displays results of the analysis of the happiness factor. OLS estimates indicate that sponsorship had a significantly positive impact of 0.24 to 0.30 standard deviations on this factor when compared to non-sponsored siblings, and 2SLS estimates are about twice as high (0.48 to 0.56 standard deviations) and also statistically significant. Results that sum the coefficients on the sponsored child and sponsored household variables in community fixed effects estimations, which compare sponsored children to children in waitlisted households, show that the impact of sponsorship is somewhat lower but still positive, 0.17 to 0.25 standard deviations, and generally statistically significant.

The impact on self-efficacy is examined in Panel B. OLS estimates, which are highly significant, indicate that sponsored children scored 0.32 to 0.37 standard deviations higher on this factor, while 2SLS estimates in columns 5-8 are somewhat smaller and imprecisely estimated. The sum of the coefficients on

the sponsored child and sponsored household variables is smaller and statistically insignificant, but still positive (0.05 to 0.16 standard deviations). Finally, Panel C shows the strongest impact, in terms of both magnitude and statistical significance, on the hopelessness factor. The OLS results suggest that sponsorship caused children to score 0.28 to 0.39 standard deviations lower on this factor, indicating higher levels of hope, and the 2SLS estimates are about twice as large. Again, when compared to those in waitlisted households in community fixed effects estimations, the magnitude of the effect is slightly smaller than when compared to their siblings, with a difference of 0.29 to 0.51 standard deviations, although the magnitude and statistical significance are still large.

Appendix tables present results that restrict the sample to households with only one or two children, in which case there was no need to select from among all age-eligible children and so presumably there would be little or no selection bias. The results in Table A5 are broadly similar to those in Table 13. More specifically, the impact of sponsorship on happiness is smaller and not statistically significant when sponsored children are compared to their siblings, but larger and significant when compared to children in waitlisted households, which is the converse of the results in Table 13. On the other hand, the results for self-efficacy and hopelessness are similar to those in Table 13, albeit somewhat less precise due to the smaller sample size.

Although the quality of the drawings plays no role in the score given to the drawing, for robustness we also test whether these results hold when omitting drawing characteristics that could be affected by experience with drawing,¹⁵ since non-sponsored children may have less opportunity to draw.

¹⁵ These characteristics are long arms, poor integration of body parts, erasure marks/scribble outs, tiny head, short arms, and holding an umbrella/seeking shelter.

Tables A6-A8 duplicate Tables 11-13 and again show very similar results.¹⁶ Overall, our analysis of children’s self-portrait drawings provides additional evidence for a causal link between sponsorship and positive psychological impacts in the areas of self-esteem and aspirations when compared with their non-sponsored siblings and with children in waitlisted households.

5. Conclusion

This paper seeks to explain the underlying mechanisms for the large and significant impacts on life outcomes found from international child sponsorship (Wydick, Glewwe, and Rutledge, 2013 and 2015). While the program we study, Compassion International, provides many of the traditional interventions to promote child health and education, a strong focus of Compassion’s program is on building the self-esteem and aspirations of sponsored children regarding educational and vocational outcomes. We test whether the program has an impact in these areas to investigate the possibility of a causal link between the development of aspirations among the poor and the realization of significant long-term impacts from an economic development program.

Our analysis indicates that Compassion’s child sponsorship program has large causal effects that lead to higher self-esteem and higher self-expectations for education and employment. Our analysis of children’s drawings in Indonesia indicates large causal impacts on happiness, self-efficacy, and hopefulness about the future. The instrumental variable results provide estimates of the impact of the program that avoid the potential for bias due to intra-household selection among age-eligible children.

If a causal link between aspirations and economic outcomes can be established, it would have significant implications for the way in which both

¹⁶ Note that since factor 1 in Table A7 is negatively correlated with smiling and positively with frowning, which is the opposite of Table 11, we call this an “unhappiness” factor rather than happiness.

researchers and practitioners think about how virtuous cycles of economic development occur among the poor in developing countries. Development economics has long concerned itself with the relief of *external* constraints. Seen from the broader perspective of behavioral and development economics, our study suggests that when evaluating the impacts of programs it is also important to consider the alleviation of *internal* constraints, the psychological factors that can lead to persistent poverty through low self-esteem, low aspirations, and feelings of hopelessness. If these two types of interventions are complements to each other, a combined intervention with children may be able to have a much greater impact than either would on its own. Greater understanding of factors such as enhanced aspirations and self-efficacy could lead to more effective international aid programs for children and a deeper understanding of why some programs have stronger impacts than others.

References

- Anderson, Michael L. 2008. "Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects," *Journal of the American Statistical Association*, 103(484): 1481-1495.
- Ashraf, Nava, James Berry, and Jesse M. Shapiro. 2010. "Can Higher Prices Stimulate Product Use? Evidence from a Field Experiment in Zambia," *American Economic Review*, 100(5): 2383-2413.
- Beaman, Lori, Esther Duflo, Rohini Pande, and Petia Topalova. 2012. "Female Leadership Raises Aspirations and Educational Attainment for Girls: A Policy Experiment in India," *Science*, 335(6068): 582-586.
- Bénabou, Roland and Jean Tirole. 2003. "Intrinsic and Extrinsic Motivation," *Review of Economic Studies*, 70(3): 489-520.
- Bernard, Tanguy, Stefan Dercon, and Alemayehu Seyoum Taffesse. 2011. "Beyond Fatalism: An Empirical Exploration of Self-Efficacy and Aspirations Failure in Ethiopia," Center for the Study of African Economies Working Paper Series 2011-03, University of Oxford.
- Bernard, Tanguy, Stefan Dercon, Kate Orkin, and Alemayehu Seyoum Taffesse. 2014. "The Future in Mind: Aspirations and Forward-Looking Behaviour in Rural Ethiopia," BREAD Working Paper No. 429..
- Bertrand, Marianne, Dean Karlan, Sendhil Mullainathan, Eldar Shafir, and Jonathan Zinman. 2010. "What's Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment," *Quarterly Journal of Economics*, 125(1): 263-305.
- Borghans, Lex, Angela Lee Duckworth, James Heckman and Bas ter Weel. 2008. "The Economics and Psychology of Personality Traits." *Journal of Human Resources*. 43(4):972-1059.
- Cameron, A. C., J. B. Gelbach, and D. L. Miller. 2008. Bootstrap-based Improvements for Inference with Clustered Errors. *Review of Economics and Statistics*, 90 (3), 414-427.

- Chiapa, Carlos, José Luis Garrido, and Silvia Prina. 2012. "The Effect of Social Programs and Exposure to Professionals on the Educational Aspirations of the Poor," *Economics of Education Review*, 31: 778-798
- Dalton, Patricio, Sayantan Ghosal, and Anandi Mani. *Forthcoming*. "Poverty and Aspirations Failure: A Theoretical Framework," *Economic Journal*.
- Darolia, Rajeev and Bruce Wydick. 2011. "The Economics of Parenting, Self-Esteem, and Academic Performance: Theory and a Test," *Economica*, 78(310): 215-39.
- Duflo, Esther, Michael Kremer, and Jonathan Robinson. 2011. "Nudging Farmers to Use Fertilizer: Theory and Experimental Evidence from Kenya," *American Economic Review*, 101(6): 2350-90.
- Furth, Gregg M. 2002. *The Secret World of Drawings: A Jungian Approach to Healing through Art*. Toronto: Inner City Books.
- Genicot, Garance and Debraj Ray. 2014. "Aspirations and Inequality," NBER Working Paper No.19976
- Klepsch, Marvin and Laura Logie. 1982. *Children Draw and Tell: An Introduction to the Projective Uses of Children's Human Figure Drawings*. New York: Brunner/Maze.
- Koppitz, Elizabeth Munsterberg. 1968. *Psychological Evaluation of Children's Human Figure Drawings*. New York: Grune and Stratton.
- Macours, Karen and Reno Vakis. 2009. "Changing Households' Investments and Aspirations through Social Interactions," World Bank Policy Research Working Paper Series No. 5137.
- Ray, Debraj. 2006. "Aspirations, Poverty, and Economic Change," In *Understanding Poverty*, 409-421, Abhijit Vinyak Banerjee, Roland Bénabou, and Dilip Mookherjee, eds. New York: Oxford University Press.
- Rosenberg, Morris. 1965. "Society and the Adolescent Self-Image," Princeton, NJ: Princeton University Press.

- Ross, Phillip H. 2010. "An Investigation of Reference Point Shifts from a Child Sponsorship Program in Bolivia," Working paper, University of San Francisco.
- Thomas, Glyn and Agele M.J. Silk. 1990. *In Introduction to the Psychology of Children's Drawings*, New York: New York University Press.
- Thompson, Bruce (2004) *Exploratory and Confirmatory Factor Analysis: Understanding Concepts and Applications*. Washington, DC: American Psychological Association.
- Wydick, Bruce, Paul Glewwe and Laine Rutledge. 2013. "Does International Child Sponsorship Work? A Six-Country Study of Impacts on Adult Life Outcomes." *Journal of Political Economy*, 121(2): 393-426.
- Wydick, Bruce, Paul Glewwe and Laine Rutledge. 2015. "Does Child Sponsorship Pay Off in Adulthood? An International Study of Impacts on Income and Wealth." Working Paper.

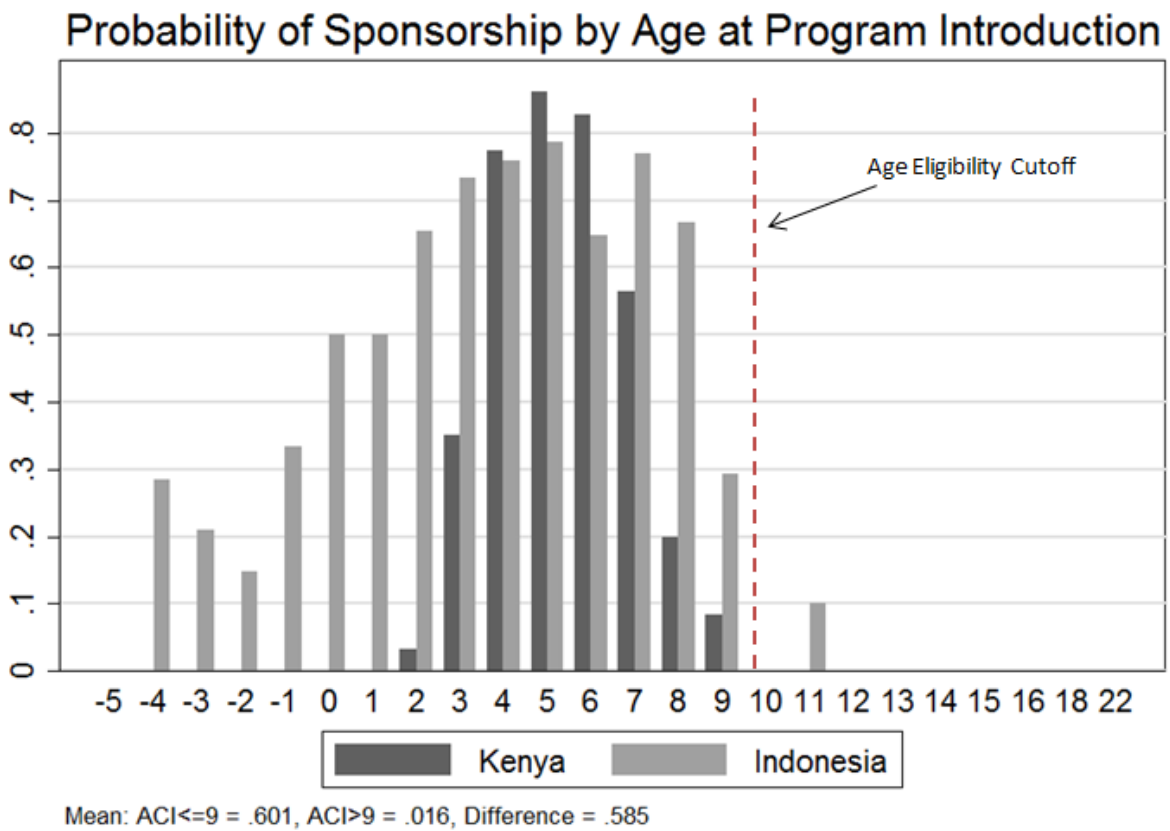


Figure 1. Discontinuity in sponsorship by age at time of program introduction



Figure 2a: Happiness, 17th percentile



Figure 2b: Happiness, 92nd percentile



Figure 3a: Self-Efficacy, 8th percentile



Figure 3b: Self-Efficacy, 94th percentile



Figure 4a: Hopelessness, 85th percentile



Figure 4b: Hopelessness, 7th percentile

Table 1. Characteristics of Study Communities

County	Treatment Communities (year of program rollout)	Sample Size	Time of Fieldwork	Survey?	Drawings?
Kenya	Rironi (2003), Isinya (2003), Njoro (2003)	570	May-July 2011	Yes	No
Indonesia	Jakarta (two communities in 2003 and two in 2007)	526	May-July 2012	Yes	Yes

Table 2. First Stage Regressions

Age at Prog. Intro.	(1) <u>No Fixed Effects</u>		(3) <u>Community Fixed Effects</u>		(5) <u>Household Fixed Effects</u>	
	Kenya	Indonesia	Kenya	Indonesia	Kenya	Indonesia
-3		0.197** (0.095)		-0.014 (0.115)		0.206 (0.175)
-2		0.123* (0.074)		-0.082 (0.086)		0.236 (0.178)
-1		0.308*** (0.101)		0.116 (0.104)		0.472*** (0.174)
0		0.475*** (0.079)		0.333*** (0.078)		0.696*** (0.127)
1		0.475*** (0.088)		0.344*** (0.091)		0.638*** (0.137)
2	0.033 (0.033)	0.629*** (0.071)	0.034 (0.034)	0.494*** (0.075)	0.170 (0.144)	0.755*** (0.135)
3	0.350*** (0.076)	0.708*** (0.063)	0.350*** (0.076)	0.605*** (0.067)	0.406** (0.204)	0.844*** (0.120)
4	0.774*** (0.046)	0.735*** (0.066)	0.774*** (0.046)	0.682*** (0.067)	0.990*** (0.188)	0.948*** (0.116)
5	0.862*** (0.031)	0.762*** (0.066)	0.862*** (0.032)	0.714*** (0.069)	1.050*** (0.131)	0.918*** (0.120)
6	0.827*** (0.036)	0.624*** (0.084)	0.828*** (0.037)	0.596*** (0.089)	1.040*** (0.127)	0.931*** (0.124)
7	0.564*** (0.056)	0.744*** (0.071)	0.564*** (0.056)	0.675*** (0.078)	0.468*** (0.158)	0.996*** (0.132)
8	0.200*** (0.060)	0.642*** (0.101)	0.200*** (0.060)	0.635*** (0.096)	0.222 (0.147)	0.856*** (0.141)
9	0.083* (0.046)	0.269** (0.108)	0.084* (0.046)	0.287*** (0.104)	-0.046 (0.148)	0.391* (0.220)
Observations	570	526	570	526	455	520
F-Statistic	335.47	29.41	315.64	26.70	59.07	21.86

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Excluded group is all of those ten or older at time of program introduction in community.

Table 3. Summary Statistics for Data Collected in Both Countries

	Kenya (std. dev.)	Indonesia (std. dev.)
Self Esteem Index	-0.002 (0.522)	-0.001 (0.534)
Optimism index	-0.000 (0.728)	0.000 (0.701)
Hope for White Collar Job (%)	0.900 (0.300)	0.552 (0.498)
Expect White Collar Job (%)	0.818 (0.387)	0.557 (0.497)
Years of Education Expected	15.449 (1.320)	14.992 (2.200)
Aspirations Index	0.000 (0.727)	0.000 (0.731)
Age	13.721 (1.976)	10.798 (3.428)
Male	0.544 (0.499)	0.466 (0.499)
Birth Order	3.249 (2.129)	2.225 (1.251)
Family Size	4.788 (2.221)	3.528 (1.326)
Observations	570	526

Table 4. Summary Statistics for Kenya

	Mean, All (std. dev.)	Mean, Sponsored (std. dev.)	Mean, Non-Sponsored (std. dev.)	Difference, <i>t</i> -test (std. error)
Self Esteem Index	-0.002 (0.522)	0.055 (0.497)	-0.082 (0.545)	0.137*** (0.040)
Optimism index	-0.000 (0.728)	0.041 (0.684)	-0.058 (0.783)	0.099* (0.058)
Hope for White Collar Job (%)	0.900 (0.300)	0.919 (0.273)	0.873 (0.333)	0.046* (0.027)
Expect White Collar Job (%)	0.818 (0.387)	0.850 (0.358)	0.772 (0.420)	0.078** (0.035)
Years of Education Expected	15.449 (1.320)	15.574 (0.956)	15.274 (1.691)	0.299*** (0.111)
Aspirations Index	0.000 (0.727)	0.077 (0.667)	-0.108 (0.791)	0.185*** (0.064)
Age	13.721 (1.976)	13.366 (1.204)	14.219 (2.635)	-0.853*** (0.161)
Male	0.544 (0.499)	0.547 (0.499)	0.540 (0.499)	0.006 (0.042)
Birth Order	3.249 (2.129)	3.150 (2.180)	3.388 (2.051)	-0.238** (0.105)
Family Size	4.788 (2.221)	4.471 (2.247)	5.232 (2.110)	-0.761*** (0.103)
Mother's Education	7.633 (4.021)	7.771 (4.066)	7.442 (3.959)	0.329 (0.205)
Father's Education	8.657 (3.936)	8.840 (4.021)	8.420 (3.822)	0.419** (0.196)
Missing Mother's Education	0.025 (0.155)	0.030 (0.171)	0.017 (0.129)	0.013 (0.009)
Missing Father's Education	0.165 (0.371)	0.192 (0.395)	0.127 (0.333)	0.066*** (0.019)

Full sample = 570: 333 sponsored children, 237 non-sponsored siblings of sponsored children. All *t*-tests include robust standard errors clustered at household level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5. OLS Estimations for Kenya

	(1) Self Esteem Index	(2) Optimism Index	(3) Hope for White Collar Job	(4) Expect White Collar Job	(5) Years of Education Expected	(6) Aspirations Index
<i>Panel A: Community Fixed Effects, No Demographic Controls</i>						
Sponsored	0.137*** (0.041)	0.099* (0.059)	0.048* (0.027)	0.080** (0.035)	0.322*** (0.109)	0.185*** (0.065)
Observations	570	570	570	570	570	570
<i>Panel B: Community Fixed Effects with Demographic Controls</i>						
Sponsored	0.144*** (0.043)	0.071 (0.062)	0.038 (0.027)	0.068* (0.034)	0.171* (0.096)	0.128** (0.062)
Observations	570	570	570	570	570	570
<i>Panel C: Household Fixed Effects, No Demographic Controls</i>						
Sponsored	0.143** (0.056)	0.003 (0.090)	0.066* (0.038)	0.082 (0.050)	0.203 (0.146)	0.151* (0.091)
Observations	455	455	455	455	455	455
<i>Panel D: Household Fixed Effects with Demographic Controls</i>						
Sponsored	0.160** (0.063)	0.024 (0.098)	0.055 (0.040)	0.065 (0.052)	0.138 (0.153)	0.113 (0.095)
Observations	455	455	455	455	455	455
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender, birth order, and enumerator dummies in panels B and D. Panel B additionally controls for family size and parent's education. Summary indices in columns 1, 2, and 6 are measured in standard deviations. Columns 3 and 4 are measured in percentage points, and column 5 is in years of education.						

Table 6. 2SLS Estimations for Kenya

	(1) Self Esteem Index	(2) Optimism Index	(3) Hope for White Collar Job	(4) Expect White Collar Job	(5) Years of Education Expected	(6) Aspirations Index
<i>Panel A: Community Fixed Effects, No Demographic Controls</i>						
Sponsored	0.099 (0.065)	-0.001 (0.085)	0.120*** (0.045)	0.129** (0.054)	0.377** (0.173)	0.401*** (0.104)
Observations	570	570	570	570	570	570
<i>Panel B: Community Fixed Effects with Demographic Controls</i>						
Sponsored	0.135** (0.066)	-0.015 (0.089)	0.093** (0.043)	0.089* (0.053)	0.276* (0.150)	0.325*** (0.096)
Observations	570	570	570	570	570	570
<i>Panel C: Household Fixed Effects, No Demographic Controls</i>						
Sponsored	0.152*** (0.055)	-0.042 (0.081)	0.123*** (0.040)	0.109** (0.052)	0.405*** (0.155)	0.329*** (0.095)
Observations	455	455	455	455	455	455
<i>Panel D: Household Fixed Effects with Demographic Controls</i>						
Sponsored	0.187*** (0.065)	0.001 (0.093)	0.113*** (0.039)	0.083 (0.055)	0.298** (0.148)	0.287*** (0.094)
Observations	455	455	455	455	455	455

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender, birth order, and enumerator dummies in panels B and D. Panel B additionally controls for family size and parent's education. Summary indices in columns 1, 2, and 6 are measured in standard deviations. Columns 3 and 4 are measured in percentage points, and column 5 is in years of education. Excluded instruments for sponsorship in first stage of two stage least squares estimations are dummy variables for age at sponsorship program introduction. F-statistic for first stage estimation were the following: panel A: 315.6, panel B: 109.7, panel C: 110.0, panel D: 68.1.

Table 7. Summary Statistics for Survey Questions for Indonesia

	Mean, All (std. dev.)	Mean, Sponsored (std. dev.)	Mean, Non- Sponsored (std. dev.)	Difference <i>t</i> -test (std. error)
Self Esteem Index	-0.001 (0.527)	0.008 (0.522)	-0.011 (0.533)	0.018 (0.043)
Optimism index	0.000 (0.705)	0.066 (0.682)	-0.079 (0.726)	0.144** (0.061)
Hope for White Collar Job (%)	0.552 (0.498)	0.544 (0.499)	0.561 (0.497)	-0.018 (0.046)
Expect White Collar Job (%)	0.557 (0.497)	0.521 (0.500)	0.601 (0.491)	-0.080* (0.043)
Years of Education Expected	14.992 (2.200)	15.275 (1.923)	14.650 (2.456)	0.625*** (0.183)
Aspirations Index	0.006 (0.710)	0.040 (0.709)	-0.035 (0.711)	0.075 (0.065)
Age	10.798 (3.428)	11.045 (2.547)	10.500 (4.244)	0.545* (0.303)
Male	0.466 (0.499)	0.458 (0.499)	0.475 (0.500)	-0.016 (0.043)
Birth Order	2.225 (1.251)	2.184 (1.290)	2.274 (1.202)	-0.090 (0.113)
Family Size	3.528 (1.326)	3.490 (1.349)	3.574 (1.299)	-0.084 (0.116)

Full sample = 526: 288 sponsored, 78 waitlist, 113 sibling of sponsored, 47 sibling of waitlist. All *t*-tests include robust standard errors clustered at household level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8. OLS Estimations for Indonesia Survey

	(1)	(2)	(3)	(4)	(5)	(6)
	Self Esteem Index	Optimism Index	Hope for White Collar Job	Expect White Collar Job	Years of Education Expected	Aspirations Index
<i>Panel A: Community Fixed Effects, No Demographic Controls</i>						
Sponsored (γ)	-0.047 (0.057)	0.014 (0.079)	0.014 (0.056)	-0.079 (0.056)	0.326 (0.229)	0.034 (0.075)
Sponsored Household (π)	0.124* (0.068)	0.250*** (0.092)	-0.038 (0.071)	0.032 (0.064)	0.430 (0.303)	0.076 (0.099)
$\gamma + \pi$	0.077 (0.052)	0.264*** (0.072)	-0.024 (0.060)	-0.047 (0.053)	0.756*** (0.239)	0.110 (0.087)
Observations	525	525	475	515	524	467
<i>Panel B: Community Fixed Effects with Demographic Controls</i>						
Sponsored (γ)	-0.018 (0.056)	0.068 (0.078)	0.004 (0.043)	-0.076 (0.051)	0.432* (0.238)	0.047 (0.069)
Sponsored Household (π)	0.062 (0.066)	0.094 (0.091)	-0.062 (0.056)	-0.007 (0.060)	0.129 (0.315)	-0.003 (0.088)
$\gamma + \pi$	0.044 (0.053)	0.162** (0.073)	-0.057 (0.049)	-0.083* (0.047)	0.561** (0.239)	0.044 (0.075)
Observations	524	524	474	514	523	466
<i>Panel C: Household Fixed Effects, No Demographic Controls</i>						
Sponsored	-0.052 (0.090)	0.025 (0.123)	0.065 (0.099)	-0.047 (0.093)	0.250 (0.385)	0.102 (0.146)
Observations	395	395	326	378	394	316
<i>Panel D: Household Fixed Effects with Demographic Controls</i>						
Sponsored	-0.038 (0.090)	0.037 (0.124)	0.030 (0.073)	-0.056 (0.083)	0.238 (0.404)	0.046 (0.134)
Observations	395	395	326	378	394	316

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender, birth order, and enumerator dummies in panels B and D. Panel B additionally controls for family size. Summary indices in columns 1, 2, and 6 are measured in standard deviations. Columns 3 and 4 are measured in percentage points, and column 5 is in years of education.

Table 9. 2SLS Estimations for Indonesia Survey

	(1) Self Esteem Index	(2) Optimism Index	(3) Hope for White Collar Job	(4) Expect White Collar Job	(5) Years of Education Expected	(6) Aspirations Index
<i>Panel A: Community Fixed Effects, No Demographic Controls</i>						
Sponsored (γ)	-0.129 (0.108)	0.087 (0.145)	0.050 (0.104)	-0.082 (0.098)	0.211 (0.367)	0.129 (0.151)
Sponsored Household (π)	0.183* (0.098)	0.198 (0.125)	-0.064 (0.095)	0.034 (0.087)	0.513 (0.364)	0.008 (0.141)
$\gamma + \pi$	0.054 (0.056)	0.285*** (0.080)	-0.014 (0.065)	-0.048 (0.056)	0.724*** (0.251)	0.137 (0.091)
Observations	525	525	475	515	524	467
<i>Panel B: Community Fixed Effects with Demographic Controls</i>						
Sponsored (γ)	-0.044 (0.106)	0.231* (0.140)	0.052 (0.093)	-0.061 (0.093)	0.532 (0.383)	0.188 (0.142)
Sponsored Household (π)	0.081 (0.097)	-0.027 (0.122)	-0.096 (0.082)	-0.018 (0.083)	0.054 (0.385)	-0.106 (0.136)
$\gamma + \pi$	0.038 (0.055)	0.204** (0.080)	-0.045 (0.053)	-0.079 (0.051)	0.586** (0.248)	0.081 (0.076)
Observations	524	524	474	514	523	466
<i>Panel C: Household Fixed Effects, No Demographic Controls</i>						
Sponsored	0.021 (0.103)	0.279** (0.138)	0.144 (0.104)	0.033 (0.097)	0.498 (0.396)	0.259 (0.167)
Observations	518	518	424	500	516	412
<i>Panel D: Household Fixed Effects with Demographic Controls</i>						
Sponsored	0.068 (0.099)	0.355*** (0.135)	0.061 (0.083)	0.007 (0.088)	0.534 (0.416)	0.166 (0.154)
Observations	518	518	424	500	516	412

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender, birth order, and enumerator dummies in panels B and D. Panel B additionally controls for family size. Summary indices in columns 1, 2, and 6 are measured in standard deviations. Columns 3 and 4 are measured in percentage points, and column 5 is in years of education. Excluded instruments for sponsorship in first stage of two stage least squares estimations are dummy variables for age at sponsorship program introduction. F-statistic for first stage estimation ranged from the following: panel A: 19.2 to 25.4, panel B: 16.7 to 21.2, panel C: 26.6 to 45.0, panel D: 17.6 to 28.2.

Table 10. Drawing Analysis of Psychological Factors Summary Statistics

	Mean, All (std. dev.)	Mean, Sponsored (std. dev.)	Mean, Non-Sponsored (std. dev.)	Difference <i>t</i> -test (std. error)
Huge Figure [^]	0.036 (0.187)	0.049 (0.215)	0.021 (0.144)	0.028* (0.016)
Monster [^]	0.074 (0.262)	0.045 (0.208)	0.109 (0.313)	-0.064*** (0.023)
Long Arms [^]	0.203 (0.403)	0.240 (0.428)	0.160 (0.367)	0.080** (0.036)
Shading	0.253 (0.435)	0.250 (0.434)	0.256 (0.438)	-0.006 (0.038)
Missing Mouth or Nose [^]	0.266 (0.442)	0.229 (0.421)	0.311 (0.464)	-0.082** (0.038)
Frowning or Crying [^]	0.165 (0.372)	0.156 (0.364)	0.176 (0.382)	-0.020 (0.035)
Dark Colors [^]	0.477 (0.500)	0.424 (0.495)	0.542 (0.499)	-0.118*** (0.044)
Single Color [^]	0.160 (0.367)	0.135 (0.343)	0.189 (0.392)	-0.054* (0.032)
Weather (-1 if lightning, 1 if sun)	0.072 (0.452)	0.066 (0.500)	0.080 (0.387)	-0.014 (0.037)
Smiling	0.679 (0.467)	0.733 (0.443)	0.613 (0.488)	0.119*** (0.044)
Cheery Colors	0.477 (0.500)	0.531 (0.500)	0.412 (0.493)	0.119*** (0.044)
Tiny Figure ^{^+}	0.276 (0.447)	0.215 (0.412)	0.349 (0.478)	-0.133*** (0.039)
Poor Integration of Body Parts ^{^+}	0.099 (0.299)	0.059 (0.236)	0.147 (0.355)	-0.088*** (0.026)
Missing Arms or Hands ^{^+}	0.477 (0.500)	0.490 (0.501)	0.462 (0.500)	0.027 (0.046)
Missing Legs [^]	0.112 (0.316)	0.073 (0.260)	0.160 (0.367)	-0.087*** (0.029)
Erasure Marks or Scribble Outs [^]	0.078 (0.268)	0.066 (0.249)	0.092 (0.290)	-0.026 (0.023)
Carrying Umbrella/Sought Shelter	0.317 (0.466)	0.358 (0.480)	0.269 (0.444)	0.089** (0.041)
Body Language	0.141 (0.802)	0.219 (0.812)	0.046 (0.781)	0.173** (0.068)
Tiny Head [^]	0.015 (0.123)	0.010 (0.102)	0.021 (0.144)	-0.011 (0.011)
Short Arms [^]	0.219 (0.414)	0.191 (0.394)	0.252 (0.435)	-0.061 (0.037)

Full sample = 526: 288 sponsored, 79 waitlist, 112 sibling of sponsored, 47 sibling of waitlist, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All *t*-tests include robust standard errors clustered at household level. [^]indicates this measure is taken as “negative” indicators and the rest are positive, +are used in the drawing self-esteem index.

Table 11. Rotated Factor Loadings

	Happiness	Self- Efficacy	Hopelessness	Uniqueness
Hopefulness Question 1	0.014	-0.016	-0.178	0.968
Hopefulness Question 2	0.022	-0.087	-0.085	0.985
Hopefulness Question 3	0.027	-0.041	0.103	0.987
Huge Figure	0.005	-0.037	0.019	0.998
Monster	-0.044	-0.059	0.428	0.812
Long Arms	0.046	-0.014	-0.067	0.993
Shading	-0.009	0.144	-0.084	0.972
Missing Mouth or Nose	-0.390	0.129	0.316	0.732
Frowning or Crying	-0.685	-0.138	-0.190	0.475
Dark Colors	-0.048	-0.928	-0.033	0.135
Single Color	-0.031	-0.383	0.205	0.810
Weather	0.023	0.141	0.195	0.942
Smiling	0.896	0.011	-0.134	0.179
Cheery Colors	0.082	0.921	-0.017	0.145
Tiny Figure	-0.138	-0.026	0.105	0.969
Poor Integration of Body Parts	-0.045	0.000	0.450	0.796
Missing Arms or Hands	-0.268	0.054	0.133	0.908
Missing Legs	-0.189	0.078	0.329	0.850
Erasure Marks or Scribble Outs	0.029	-0.049	0.181	0.964
Carrying Umbrella/Sought Shelter	0.000	0.176	-0.158	0.944
Body Language	0.706	0.187	0.071	0.462
Tiny Head	0.032	-0.084	0.092	0.984
Short Arms	0.009	-0.052	0.043	0.995
Self Esteem Question 1	-0.012	0.058	0.283	0.916
Self Esteem Question 2	-0.031	0.060	0.227	0.944

Table 12. Drawing Analysis Summary Statistics

	Mean, All (std. dev.)	Mean, Sponsored (std. dev.)	Mean, Non- Sponsored (std. dev.)	Difference <i>t</i> - test (std. error)
Happiness Factor	0.000 (0.923)	0.092 (0.900)	-0.111 (0.941)	0.203** (0.082)
Self-Efficacy Factor	-0.000 (0.955)	0.100 (0.947)	-0.121 (0.953)	0.221*** (0.084)
Hopelessness Factor	-0.000 (0.762)	-0.153 (0.657)	0.185 (0.838)	-0.338*** (0.065)

Full sample = 526: 288 sponsored, 79 waitlist, 112 sibling of sponsored, 47 sibling of waitlist, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All *t*-tests include robust standard errors clustered at household level.

Table 13. Estimations for Indonesia Drawings

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>Ordinary Least Squares</u>				<u>Two Stage Least Squares</u>			
	<u>Community Fixed Effects</u>		<u>Household Fixed Effects</u>		<u>Community Fixed Effects</u>		<u>Household Fixed Effects</u>	
Demographic Controls?	N	Y	N	Y	N	Y	N	Y
<i>Panel A: Happiness Factor</i>								
Sponsored (γ)	0.240** (0.104)	0.257** (0.105)	0.281* (0.163)	0.303* (0.166)	0.507*** (0.194)	0.558*** (0.196)	0.483** (0.197)	0.505** (0.196)
Sponsored Household (π)	-0.063 (0.124)	-0.090 (0.130)			-0.253 (0.166)	-0.315* (0.174)		
$\gamma + \pi$	0.178* (0.103)	0.167 (0.104)			0.253** (0.115)	0.242** (0.114)		
Observations	526	525	396	396	526	525	520	520
<i>Panel B: Self-Efficacy Factor</i>								
Sponsored (γ)	0.367*** (0.101)	0.323*** (0.102)	0.351** (0.166)	0.352** (0.170)	0.254 (0.183)	0.138 (0.183)	0.225 (0.177)	0.178 (0.182)
Sponsored Household (π)	-0.282** (0.122)	-0.162 (0.127)			-0.201 (0.162)	-0.023 (0.170)		
$\gamma + \pi$	0.085 (0.105)	0.161 (0.106)			0.053 (0.113)	0.114 (0.111)		
Observations	526	525	396	396	526	525	520	520
<i>Panel C: Hopelessness Factor</i>								
Sponsored (γ)	-0.330*** (0.082)	-0.389*** (0.081)	-0.282** (0.123)	-0.313*** (0.124)	-0.650*** (0.145)	-0.884*** (0.140)	-0.534*** (0.141)	-0.644*** (0.134)
Sponsored Household (π)	-0.089 (0.104)	0.102 (0.104)			0.141 (0.132)	0.472*** (0.135)		
$\gamma + \pi$	-0.419*** (0.084)	-0.287*** (0.081)			-0.509*** (0.091)	-0.412*** (0.085)		
Observations	526	525	396	396	526	525	520	520

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender and birth order. Community fixed effects estimations additionally control for family size. Dependent variable in each panel is measured in standard deviations. Excluded instruments for sponsorship in first stage of two stage least squares estimations are dummy variables for age at sponsorship program introduction. F-statistic from first stage estimation for column 5 is 25.2, column 6: 20.9, column 7: 44.9, and column 8: 28.5.

APPENDIX

Table A1. OLS Estimations for Indonesia Survey – Ages 10-18

	(1)	(2)	(3)	(4)	(5)	(6)
	Self Esteem Index	Optimism Index	Hope for White Collar Job	Expect White Collar Job	Years of Education Expected	Aspirations Index
<i>Panel A: Community Fixed Effects, No Demographic Controls</i>						
Sponsored (γ)	-0.087 (0.090)	0.020 (0.118)	-0.016 (0.081)	-0.056 (0.080)	0.206 (0.284)	0.019 (0.100)
Sponsored Household (π)	-0.031 (0.114)	0.062 (0.153)	-0.144 (0.102)	-0.107 (0.096)	-0.045 (0.399)	-0.172 (0.132)
$\gamma + \pi$	-0.119 (0.084)	0.081 (0.118)	-0.160* (0.082)	-0.163* (0.079)	0.160 (0.331)	-0.152 (0.111)
Observations	309	309	275	303	309	269
<i>Panel B: Community Fixed Effects with Demographic Controls</i>						
Sponsored (γ)	-0.063 (0.089)	0.139 (0.122)	0.014 (0.064)	0.017 (0.084)	0.371 (0.288)	0.103 (0.090)
Sponsored Household (π)	-0.075 (0.110)	-0.124 (0.148)	-0.166** (0.076)	-0.175* (0.092)	-0.269 (0.397)	-0.262** (0.119)
$\gamma + \pi$	-0.138* (0.083)	0.015 (0.113)	-0.152** (0.064)	-0.158** (0.068)	0.102 (0.334)	-0.158 (0.103)
Observations	309	309	275	303	309	269
<i>Panel C: Household Fixed Effects, No Demographic Controls</i>						
Sponsored	-0.149 (0.141)	0.077 (0.195)	0.027 (0.158)	-0.023 (0.157)	-0.128 (0.406)	0.014 (0.195)
Observations	170	170	138	162	170	132
<i>Panel D: Household Fixed Effects with Demographic Controls</i>						
Sponsored	-0.113 (0.170)	0.111 (0.218)	0.062 (0.104)	0.019 (0.166)	0.265 (0.415)	0.116 (0.151)
Observations	170	170	138	162	170	132

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender, birth order, and enumerator dummies in panels B and D. Panel B additionally controls for family size. Summary indices in columns 1, 2, and 6 are measured in standard deviations. Columns 3 and 4 are measured in percentage points, and column 5 is in years of education.

Table A2. 2SLS Estimations for Indonesia Survey – Ages 10-18

	(1)	(2)	(3)	(4)	(5)	(6)
	Self Esteem Index	Optimism Index	Hope for White Collar Job	Expect White Collar Job	Years of Education Expected	Aspirations Index
<i>Panel A: Community Fixed Effects, No Demographic Controls</i>						
Sponsored (γ)	-0.211 (0.154)	-0.117 (0.209)	0.011 (0.144)	-0.061 (0.126)	0.105 (0.470)	0.091 (0.203)
Sponsored Household (π)	0.062 (0.156)	0.164 (0.203)	-0.164 (0.137)	-0.103 (0.122)	0.030 (0.506)	-0.226 (0.191)
$\gamma + \pi$	-0.150* (0.083)	0.047 (0.122)	-0.154* (0.085)	-0.165** (0.081)	0.135 (0.330)	-0.136 (0.116)
Observations	309	309	275	303	309	269
<i>Panel B: Community Fixed Effects with Demographic Controls</i>						
Sponsored (γ)	-0.177 (0.194)	0.180 (0.239)	0.109 (0.159)	0.201 (0.158)	1.145* (0.598)	0.533** (0.230)
Sponsored Household (π)	0.014 (0.180)	-0.156 (0.223)	-0.239* (0.138)	-0.320** (0.140)	-0.870 (0.588)	-0.596*** (0.212)
$\gamma + \pi$	-0.163* (0.087)	0.024 (0.116)	-0.130* (0.069)	-0.118* (0.072)	0.275 (0.338)	-0.064 (0.106)
Observations	309	309	275	303	309	269
<i>Panel C: Household Fixed Effects, No Demographic Controls</i>						
Sponsored	-0.163 (0.130)	0.211 (0.217)	0.031 (0.155)	0.035 (0.136)	-0.119 (0.474)	0.008 (0.206)
Observations	172	172	140	164	172	134
<i>Panel D: Household Fixed Effects with Demographic Controls</i>						
Sponsored	-0.063 (0.158)	0.374 (0.260)	-0.022 (0.142)	0.100 (0.169)	0.655 (0.511)	0.124 (0.176)
Observations	172	172	140	164	172	134

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender, birth order, and enumerator dummies in panels B and D. Panel B additionally controls for family size. Summary indices in columns 1, 2, and 6 are measured in standard deviations. Columns 3 and 4 are measured in percentage points, and column 5 is in years of education. Excluded instruments for sponsorship in first stage of two stage least squares estimations are dummy variables for age at sponsorship program introduction. F-statistic for first stage estimation ranged from the following: panel A: 12.7 to 18.0, panel B: 9.4 to 12.3, panel C: 48.9 to 254.7, panel D: 11.4 to 21.2.

Table A3. OLS Estimations for Indonesia Survey – Family has 1 or 2 children

	(1)	(2)	(3)	(4)	(5)	(6)
	Self Esteem Index	Optimism Index	Hope for White Collar Job	Expect White Collar Job	Years of Education Expected	Aspirations Index
<i>Panel A: Community Fixed Effects, No Demographic Controls</i>						
Sponsored (γ)	-0.184 (0.112)	-0.083 (0.220)	-0.072 (0.151)	-0.067 (0.149)	0.636 (0.644)	0.040 (0.192)
Sponsored Household (π)	0.264** (0.126)	0.317 (0.260)	0.012 (0.178)	0.095 (0.152)	0.590 (0.782)	0.155 (0.225)
$\gamma + \pi$	0.081 (0.093)	0.234 (0.188)	-0.060 (0.139)	0.028 (0.099)	1.226** (0.564)	0.196 (0.181)
Observations	104	104	96	103	104	95
<i>Panel B: Community Fixed Effects with Demographic Controls</i>						
Sponsored (γ)	-0.159 (0.109)	-0.015 (0.210)	-0.150 (0.120)	-0.112 (0.142)	0.631 (0.637)	-0.027 (0.193)
Sponsored Household (π)	0.276** (0.121)	0.194 (0.242)	0.050 (0.147)	0.086 (0.149)	0.462 (0.825)	0.171 (0.250)
$\gamma + \pi$	0.116 (0.097)	0.179 (0.165)	-0.101 (0.107)	-0.025 (0.085)	1.093* (0.572)	0.144 (0.167)
Observations	104	104	96	103	104	95
<i>Panel C: Household Fixed Effects, No Demographic Controls</i>						
Sponsored	0.001 (0.173)	0.120 (0.339)	0.235 (0.232)	0.111 (0.252)	0.842 (0.813)	0.344 (0.259)
Observations	79	79	74	76	79	74
<i>Panel D: Household Fixed Effects with Demographic Controls</i>						
Sponsored	0.022 (0.165)	0.169 (0.329)	0.192 (0.137)	0.091 (0.247)	0.720 (0.689)	0.263 (0.229)
Observations	79	79	74	76	79	74

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender, birth order, and enumerator dummies in panels B and D. Panel B additionally controls for family size. Summary indices in columns 1, 2, and 6 are measured in standard deviations. Columns 3 and 4 are measured in percentage points, and column 5 is in years of education.

Table A4. 2SLS Estimations for Indonesia Survey – Family has 1 or 2 children

	(1)	(2)	(3)	(4)	(5)	(6)
	Self Esteem Index	Optimism Index	Hope for White Collar Job	Expect White Collar Job	Years of Education Expected	Aspirations Index
<i>Panel A: Community Fixed Effects, No Demographic Controls</i>						
Sponsored (γ)	-0.153 (0.171)	0.018 (0.292)	-0.183 (0.217)	-0.199 (0.207)	0.743 (0.786)	0.016 (0.259)
Sponsored Household (π)	0.241 (0.158)	0.240 (0.300)	0.097 (0.202)	0.196 (0.184)	0.508 (0.746)	0.174 (0.236)
$\gamma + \pi$	0.088 (0.096)	0.258 (0.185)	-0.086 (0.143)	-0.003 (0.101)	1.252** (0.596)	0.190 (0.188)
Observations	104	104	96	103	104	95
<i>Panel B: Community Fixed Effects with Demographic Controls</i>						
Sponsored (γ)	-0.105 (0.179)	0.148 (0.215)	-0.281 (0.192)	-0.248 (0.197)	0.930 (0.775)	-0.028 (0.279)
Sponsored Household (π)	0.233 (0.158)	0.065 (0.221)	0.154 (0.176)	0.193 (0.180)	0.226 (0.788)	0.172 (0.278)
$\gamma + \pi$	0.128 (0.100)	0.214 (0.164)	-0.127 (0.106)	-0.054 (0.085)	1.157** (0.580)	0.144 (0.167)
Observations	104	104	96	103	104	95
<i>Panel C: Household Fixed Effects, No Demographic Controls</i>						
Sponsored	-0.034 (0.145)	-0.007 (0.279)	0.198 (0.204)	0.106 (0.226)	1.322* (0.790)	0.359 (0.255)
Observations	100	100	88	98	100	88
<i>Panel D: Household Fixed Effects with Demographic Controls</i>						
Sponsored	-0.021 (0.133)	0.035 (0.241)	0.152 (0.133)	0.062 (0.221)	1.036 (0.638)	0.250 (0.261)
Observations	100	100	88	98	100	88

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender, birth order, and enumerator dummies in panels B and D. Panel B additionally controls for family size. Summary indices in columns 1, 2, and 6 are measured in standard deviations. Columns 3 and 4 are measured in percentage points, and column 5 is in years of education. Excluded instruments for sponsorship in first stage of two stage least squares estimations are dummy variables for age at sponsorship program introduction. F-statistic for first stage estimation ranged from the following: panel A: 93.4 to 140.1, panel B: 27.5 to 46.5, panel C: 23.7 to 28.8, panel D: 12.8 to 30.0.

Table A5. Estimations for Drawings – Family has 1 or 2 Children

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>Ordinary Least Squares</u>				<u>Two Stage Least Squares</u>			
	<u>Community Fixed Effects</u>		<u>Household Fixed Effects</u>		<u>Community Fixed Effects</u>		<u>Household Fixed Effects</u>	
Demographic Controls?	N	Y	N	Y	N	Y	N	Y
<i>Panel A: Happiness Factor</i>								
Sponsored (γ)	0.114 (0.187)	0.169 (0.191)	0.298 (0.243)	0.280 (0.267)	-0.236 (0.188)	-0.150 (0.234)	0.287 (0.178)	0.298 (0.224)
Sponsored Household (π)	0.521** (0.199)	0.358 (0.225)			0.789*** (0.193)	0.610** (0.239)		
$\gamma + \pi$	0.635*** (0.159)	0.527*** (0.167)			0.553*** (0.151)	0.460*** (0.159)		
Observations	105	105	80	80	105	105	102	102
<i>Panel B: Self-Efficacy Factor</i>								
Sponsored (γ)	0.344 (0.232)	0.215 (0.246)	0.283 (0.354)	0.268 (0.380)	0.365 (0.337)	0.154 (0.330)	0.538* (0.279)	0.494* (0.265)
Sponsored Household (π)	-0.141 (0.290)	0.018 (0.289)			-0.157 (0.334)	0.066 (0.309)		
$\gamma + \pi$	0.203 (0.231)	0.232 (0.230)			0.208 (0.234)	0.220 (0.230)		
Observations	105	105	80	80	105	105	102	102
<i>Panel C: Hopelessness Factor</i>								
Sponsored (γ)	-0.525** (0.250)	-0.642*** (0.187)	-0.562 (0.367)	-0.574** (0.272)	-0.651** (0.317)	-0.947*** (0.255)	-0.617** (0.286)	-0.632*** (0.222)
Sponsored Household (π)	0.124 (0.244)	0.359* (0.197)			0.221 (0.300)	0.601** (0.262)		
$\gamma + \pi$	-0.400** (0.163)	-0.283* (0.160)			-0.430*** (0.156)	-0.347** (0.148)		
Observations	105	105	80	80	105	105	102	102

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls include age, gender and birth order. Community fixed effects estimations additionally control for family size. Dependent variable in each panel is measured in standard deviations. Excluded instruments for sponsorship in first stage of two stage least squares estimations are dummy variables for age at sponsorship program introduction. F-statistic from first stage estimation for column 5 is 138.1, column 6: 63.8, column 7: 33.4, and column 8: 30.6.

Table A6. Alternative Rotated Factor Loadings

	Unhappiness	Self-Efficacy	Hopelessness	Uniqueness
Hopefulness Question 1	0.019	0.009	-0.301	0.909
Hopefulness Question 2	0.014	-0.063	-0.245	0.936
Hopefulness Question 3	-0.020	-0.038	0.049	0.996
Huge Figure	-0.008	-0.043	0.006	0.998
Monster	0.066	-0.044	0.127	0.978
Shading	0.030	0.166	-0.147	0.950
Missing Mouth or Nose	0.354	0.100	0.423	0.686
Frowning or Crying	0.705	-0.115	-0.207	0.447
Dark Colors	0.052	-0.931	-0.053	0.128
Single Color	0.037	-0.383	0.117	0.838
Weather	-0.030	0.133	0.177	0.950
Smiling	-0.882	0.018	-0.217	0.175
Cheery Colors	-0.078	0.926	-0.022	0.136
Tiny Figure	0.147	-0.016	0.033	0.977
Missing Arms or Hands	0.242	0.025	0.238	0.884
Missing Legs	0.145	0.032	0.445	0.780
Body Language	-0.722	0.164	0.110	0.440
Self Esteem Question 1	0.004	0.043	0.252	0.935
Self Esteem Question 2	0.016	0.038	0.249	0.936

Table A7. Alternative Drawing Analysis Summary Statistics

	Mean, All (std. dev.)	Mean, Sponsored (std. dev.)	Mean, Non- Sponsored (std. dev.)	Difference <i>t</i> - test (std. error)
Unhappiness Factor	-0.000 (0.920)	-0.091 (0.900)	0.110 (0.933)	-0.200** (0.081)
Self-Efficacy Factor	-0.000 (0.955)	0.099 (0.952)	-0.120 (0.947)	0.220*** (0.084)
Hopelessness Factor	0.000 (0.754)	-0.105 (0.660)	0.127 (0.838)	-0.232*** (0.067)

Full sample = 526: 288 sponsored, 79 waitlist, 112 sibling of sponsored, 47 sibling of waitlist, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All *t*-tests include robust standard errors clustered at household level.

Table A8. Alternative Estimations for Drawings

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>Ordinary Least Squares</u>				<u>Two Stage Least Squares</u>			
	<u>Community Fixed Effects</u>		<u>Household Fixed Effects</u>		<u>Community Fixed Effects</u>		<u>Household Fixed Effects</u>	
Demographic Controls?	N	Y	N	Y	N	Y	N	Y
<i>Panel A: Unhappiness Factor</i>								
Sponsored (γ)	-0.234** (0.104)	-0.248** (0.106)	-0.274* (0.164)	-0.296* (0.166)	-0.466** (0.192)	-0.507*** (0.193)	-0.453** (0.196)	-0.474** (0.195)
Sponsored Household (π)	0.061 (0.122)	0.084 (0.129)			0.228 (0.165)	0.279 (0.172)		
$\gamma + \pi$	-0.172* (0.101)	-0.164 (0.102)			-0.238** (0.112)	-0.229** (0.112)		
Observations	526	525	396	396	526	525	520	520
<i>Panel B: Self-Efficacy Factor</i>								
Sponsored (γ)	0.374*** (0.101)	0.329*** (0.102)	0.358** (0.167)	0.359** (0.170)	0.285 (0.180)	0.176 (0.181)	0.245 (0.176)	0.200 (0.181)
Sponsored Household (π)	-0.289** (0.121)	-0.170 (0.125)			-0.226 (0.158)	-0.055 (0.166)		
$\gamma + \pi$	0.085 (0.104)	0.159 (0.105)			0.060 (0.113)	0.120 (0.111)		
Observations	526	525	396	396	526	525	520	520
<i>Panel C: Hopelessness Factor</i>								
Sponsored (γ)	-0.238*** (0.077)	-0.292*** (0.077)	-0.229** (0.113)	-0.254** (0.116)	-0.655*** (0.158)	-0.869*** (0.160)	-0.527*** (0.139)	0.614*** (0.131)
Sponsored Household (π)	-0.072 (0.100)	0.090 (0.101)			0.226* (0.135)	0.521*** (0.144)		
$\gamma + \pi$	-0.311*** (0.088)	-0.202** (0.085)			-0.429*** (0.099)	-0.347*** (0.093)		
Observations	526	525	396	396	526	525	520	520

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, Robust standard errors clustered at the household level in parentheses. Demographic controls includes age, gender and birth order. Community fixed effects estimations additionally control for family size. Dependent variable in each panel is measured in standard deviations. Excluded instruments for sponsorship in first stage of two stage least squares estimations are dummy variables for age at sponsorship program introduction. F-statistic from first stage estimation for column 5 is 25.2, column 6: 20.9, column 7: 44.9, and column 8: 28.5.

Research Disclosure Statement for Paul Glewwe

(1) Every submitted article should state the sources of financial support for the particular research it describes. If none, that fact should be stated.

Funding for this research was provided by the University of San Francisco's Faculty Development Fund and the university's master's program in International and Development Economics.

(2) Each author of a submitted article should identify each interested party from whom he or she has received significant financial support, summing to at least \$10,000 in the past three years, in the form of consultant fees, retainers, grants and the like. The disclosure requirement also includes in-kind support, such as providing access to data. If the support in question comes with a non-disclosure obligation, that fact should be stated, along with as much information as the obligation permits. If there are no such sources of funds, that fact should be stated explicitly. An "interested" party is any individual, group, or organization that has a financial, ideological, or political stake related to the article.

Compassion International allowed our research team to survey children and families in Kenya and Indonesia. They helped provide some logistical guidance to the team, but no team members received data or financial support from Compassion or any related organization.

(3) Each author should disclose any paid or unpaid positions as officer, director, or board member of relevant non-profit organizations or profit-making entities. A "relevant" organization is one whose policy positions, goals, or financial interests relate to the article.

Not applicable.

(4) The disclosures required above apply to any close relative or partner of any author.

Not applicable.

(5) Each author must disclose if another party had the right to review the paper prior to its circulation.

Neither Compassion International, any of its country affiliates, nor any other organization had the right to review the paper prior to its circulation.

(6) For published articles, information on relevant potential conflicts of interest will be made available to the public.

We know of no potential conflicts of interest.

(7) The AEA urges its members and other economists to apply the above principles in other publications: scholarly journals, op-ed pieces, newspaper and magazine columns, radio and television commentaries, as well as in testimony before federal and state legislative committees and other agencies.

All the authors agree to adhere to the above principles for all possible other publication outlets.

Paul Glewwe.

Research Disclosure Statement for Phillip Ross

(1) Every submitted article should state the sources of financial support for the particular research it describes. If none, that fact should be stated.

Funding for this research was provided by the University of San Francisco's Faculty Development Fund and the university's master's program in International and Development Economics.

(2) Each author of a submitted article should identify each interested party from whom he or she has received significant financial support, summing to at least \$10,000 in the past three years, in the form of consultant fees, retainers, grants and the like. The disclosure requirement also includes in-kind support, such as providing access to data. If the support in question comes with a non-disclosure obligation, that fact should be stated, along with as much information as the obligation permits. If there are no such sources of funds, that fact should be stated explicitly. An "interested" party is any individual, group, or organization that has a financial, ideological, or political stake related to the article.

Compassion International allowed our research team to survey children and families in Kenya and Indonesia. They helped provide some logistical guidance to the team, but no team members received data or financial support from Compassion or any related organization.

(3) Each author should disclose any paid or unpaid positions as officer, director, or board member of relevant non-profit organizations or profit-making entities. A "relevant" organization is one whose policy positions, goals, or financial interests relate to the article.

Not applicable.

(4) The disclosures required above apply to any close relative or partner of any author.

Not applicable.

(5) Each author must disclose if another party had the right to review the paper prior to its circulation.

Neither Compassion International, any of its country affiliates, nor any other organization had the right to review the paper prior to its circulation.

(6) For published articles, information on relevant potential conflicts of interest will be made available to the public.

We know of no potential conflicts of interest.

(7) The AEA urges its members and other economists to apply the above principles in other publications: scholarly journals, op-ed pieces, newspaper and magazine columns, radio and television commentaries, as well as in testimony before federal and state legislative committees and other agencies.

All the authors agree to adhere to the above principles for all possible other publication outlets.

Phillip Ross.

Research Disclosure Statement for Bruce Wydick

(1) Every submitted article should state the sources of financial support for the particular research it describes. If none, that fact should be stated.

Funding for this research was provided by the University of San Francisco's Faculty Development Fund and the university's master's program in International and Development Economics.

(2) Each author of a submitted article should identify each interested party from whom he or she has received significant financial support, summing to at least \$10,000 in the past three years, in the form of consultant fees, retainers, grants and the like. The disclosure requirement also includes in-kind support, such as providing access to data. If the support in question comes with a non-disclosure obligation, that fact should be stated, along with as much information as the obligation permits. If there are no such sources of funds, that fact should be stated explicitly. An "interested" party is any individual, group, or organization that has a financial, ideological, or political stake related to the article.

Compassion International allowed our research team to survey children and families in Kenya and Indonesia. They helped provide some logistical guidance to the team, but no team members received data or financial support from Compassion or any related organization.

(3) Each author should disclose any paid or unpaid positions as officer, director, or board member of relevant non-profit organizations or profit-making entities. A "relevant" organization is one whose policy positions, goals, or financial interests relate to the article.

Not applicable.

(4) The disclosures required above apply to any close relative or partner of any author.

Not applicable.

(5) Each author must disclose if another party had the right to review the paper prior to its circulation.

Neither Compassion International, any of its country affiliates, nor any other organization had the right to review the paper prior to its circulation.

(6) For published articles, information on relevant potential conflicts of interest will be made available to the public.

We know of no potential conflicts of interest.

(7) The AEA urges its members and other economists to apply the above principles in other publications: scholarly journals, op-ed pieces, newspaper and magazine columns, radio and television commentaries, as well as in testimony before federal and state legislative committees and other agencies.

All the authors agree to adhere to the above principles for all possible other publication outlets.

Bruce Wydick.