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Overcoming bias: The long-term effects of a conditional cash transfer program on educational and professional teenager aspirations

An interdisciplinary approach

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Abstract

The following paper studies the effect of the Peruvian Conditional Cash Transfer program *Juntos* ("Together") on educational and professional aspirations through qualitative and quantitative data analysis. It uses propensity score matching to compare beneficiaries to non-beneficiaries with similar socioeconomic characteristics who would have been beneficiaries had they lived in a beneficiary district. Beneficiary teenagers are between 1.5 and 1.8 times more likely to aspire to a higher level of education than non-beneficiaries; and between 1.4 and 1.7 times more likely to aspire to higher paying jobs that require more years of education than non beneficiary comparable teens. The effect was larger for boys, Spanish native speakers and oldest siblings in the household.

Why should I read this research?

The following research is, to my knowledge, the first of its kind to study the long-term effects of a conditional cash transfer program on educational and professional aspirations of teenagers. It is a contribution to the recent growing literature around biased aspirations and its effects on inequality.

Not only does it show that the Peruvian conditional cash transfer program *Juntos* ("Together") has a positive effect on educational and professional aspirations, but it displays this effect by level of education, gender, ethnic group and birth order, so that policy makers can make customized decisions for each group.

You will start with a complete and concise state of the arts on everything that's been said about aspirations, the aspirations-based poverty trap and conditional cash transfer programs, and all the different ways they intertwine. You will access rich longitudinal data that will allow you to look at the distributions of teenager aspirations in an emerging and diverse country like Peru. What jobs do they want to do? How long do they want to study?

This research takes on both quantitative and qualitative data analysis. You'll get to hear the voices of real Peruvian teenagers from the Andes and from the Amazon talk about their aspirations for the future, how they perceive their opportunities, their constraints and how they feel about the conditional cash transfer program that was implemented in their village. This will provide you with the nuances of the phenomenon, and you'll be able to look at the data in a different way.

Finally, you will reflect on the findings. We will discuss the strengths of the program, its limitations, and its implications for public policy.

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I. Introduction

Latin America, a region highly dependent on natural resources, has battled with inequality for centuries; this struggle has been largely discussed across history, sociology and economics (Galeano, 2003). While it can be argued that some leaders implement policies that serve them to maintain the inequalities that keep them in power, it's undeniable that some advances have been done in the field of policy that intend to alleviate them. One of these advances has come in the form of conditional cash transfer programs.

Conditional cash transfer programs (CCT) consist of giving a monetary incentive to individuals in vulnerable situations, conditional on a series of commitments related to the health and education of their families. These kinds of programs started in Mexico and Brazil in the late 1990s and have had positive results in terms of getting children out of work and into schools (Skoufias et al., 2001). Their promise was to alleviate poverty through the investment in human capital. Soon enough, other countries in the region started applying CCTs, among them, Peru.

Peru offers a case of rapid and sustained economic growth, particularly between the years 2002 and 2013, when the average growth rate was 6.2% (World Bank 2019). Monetary poverty fell from 52.2% to 26.1% in the same period (íbid). In 2005 —the midst of the economic boom — *Juntos* ("Together"), the Peruvian CCT, was born. Evidence shows that, like similar programs in the region, *Juntos* has been effective in reducing poverty and increasing children's access to health and education in rural areas (Perova and Vakis, 2012). Since then, however, economic growth has slowed down and big historical challenges have reemerged. The country's vast and diverse geography, its centralisation on the capital and the so called "resource curse" have led to spatial concentration of economic activities, economic capital and opportunities, creating large disparities in development across the country's territory and keeping minorities in disadvantage (World Bank 2017). And so, one may begin to wonder what is the role of CCT programs like *Juntos* in providing the tools to help people out of poverty in the long run.

In Latin America, most of the impact of CCT programs is associated with the fulfilment of the conditionalities, while the long-term effects have shown less conclusive results (Escobal and Benites, 2012). This research aims to contribute to the study of the effects of CCT programs in the long term. Recent evidence shows that aspirations — namely the goals that individuals set for themselves in the future— can imply a "poverty trap", as individuals from lower socioeconomic households tend to set lower aspirations for their future (Guyon and Huillery, 2018; Oketch et al, 2012; Sosu, 2014). In this study, I intend to assess whether family participation in the *Juntos* CCT program in Peru has any effect on adolescents' educational and professional aspirations. Furthermore, I analyze whether this effect is constant or if it' s heterogeneous in terms of other faces of inequality: gender, ethnicity and disability condition.

Through quantitative and qualitative data analysis, I show that there is a positive effect of *Juntos* on both educational and professional aspirations. Beneficiary teenagers are between 1.5 and 1.8 times more likely to aspire to a higher education than comparable non-beneficiary teenagers, once socioeconomic and individual observable characteristics are accounted for. Beneficiaries are also between 1.4 and 1.7 times more likely to aspire to higher paying jobs that require more years of education than non beneficiary comparable teens. The effect is higher and more significant for boys and for Spanish native speakers, in both educational and professional aspirations, although girls and indigenous language native speakers have slightly higher educational and professional aspirations to begin with. Evidence shows that oldest siblings in the household have lower aspirations than younger siblings, and they experience stronger treatment effects. Section 2 describes the *Juntos* CCT program, its objective and main characteristics. Section 3 presents the interdisciplinary state of knowledge on the aspiration based poverty trap and conditional cash transfer programs. Section 4 explains the data sources and methodology. Section 5 presents the identification strategy. Section 6 exposes the main results in quantitative and qualitative data. Section 7 discusses results found in both methods and Section 8 presents the conclusion and policy recommendations.

II. The *Juntos* Program

The *Juntos* Program was created in April 2005. From its creation, its purpose has been

> To implement direct transfers for the benefit of the **poorest families of the population**, in rural and urban areas. The program will provide beneficiary families, through their voluntary participation and commitment, with **health and education benefits aimed at ensuring preventive maternal and child health and schooling without drop-outs**. (Article 1, Supreme Decree Nº 032-2005-PCM cited in Linares García, 2009. Emphasis is mine.)

The program conducts three processes to choose its beneficiaries, in the aim of finding the poorest families: a geographical targeting, an individual targeting, and a communal verification (*verificación comunal*) process. Geographical targeting consists on choosing beneficiary districts[1] according to the following criteria: incidence of monetary poverty, severity of monetary poverty, ratio of chronic child malnutrition in children between six and nine years old, average rate of unsatisfied basic needs in the population, and percentage of population settlements (*centros poblados*) affected by political violence[2] in the district.

Once the Ministry of Economics and Finance determines the priority districts, individual targeting takes place. First, the INEI (National Institute for Statistics and Information), conducts a filter to identify households in which there is a pregnant woman, or a widowed or guardian parent with children up to the age of fourteen. Then, INEI applies to registered households an algorithm and a threshold by which it establishes which households qualify as

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[1] In Peru, political-administrative organization goes as follows: The country is divided in 25 regions (*regiones*) and the Lima Province. The regions are composed of provinces (*provincias*), which are subdivided into districts (*distritos*). Districts in the rural area can be composed of population settlements (*centros poblados*).

[2] During the period 1980-2000 the country suffered an internal armed conflict between terrorist organizations, the Armed Forces and other actors involved. For more information: https://lum.cultura.pe/el-lum/quienes-somos

extremely poor, poor and non-poor. A detailed description of geographical and individual targeting can be found in Annex 01.

Finally, among eligible — classified as poor or extremely poor — households, a Communal Verification Assembly takes place locally to conduct a second filter, where the community can validate the poverty condition of each of the households, in which case they can be incorporated to *Juntos*. If any household doesn't receive validation from the community, it is excluded from the program (Linares García, 2009).

Selected households receive a bimonthly stipend fixed amount of S/. 200 PEN (*Peruvian Nuevos Soles*, around $59 USD); which does not depend on the number of children or the grade they are in school. The person who receives the transfer and who is considered the main beneficiary is either the mother, widow, guardian, or father of the child. They have the right to this benefit from pregnancy until the child completes secondary education or turns 19 years of age, whichever of the two scenarios occurs first (íbid).

In order for families to access the monetary subsidy, they have to comply with a series of co-responsibilities related to education, health and nutrition. Said conditionalities include: (a) for children under age 5, health checks, complete vaccinations, iron and vitamin A supplements and parasite tests; (b) for children aged 6 to 14, school attendance of at least 85 per cent of the school year; and (c) for pregnant or nursing women, prenatal and postnatal checkups (Escobal and Benites, 2012). The program establishes that if beneficiary households fail to comply with their co-responsibilities on four occasions, they are automatically withdrawn from the Register of Affiliated Homes. *Juntos* program representatives are in charge of checking conditionality compliance, and they also have a process called "family accompaniment" (*acompañamiento familiar*). The latter consists of two activities: visits to non-compliant households to see what their difficulty had been, and since 2015 a series of awareness-raising meetings on topics related to health, productive activities, early childhood care, etc.("Memorias Anuales Juntos— Juntos Podemos— MIDIS,"n.d.).

The program has adapted to the challenges it has faced on the terrain: some conditionalities have changed in time responding to the beneficiaries needs and difficulties. The goals have also adapted to time. For instance, success indicators have shifted from regular basic education attendance to dropout indicators at the high school level, and preschool attendance targets for children aged 3 to 5 have been incorporated. There has also been a move from having an indicator of "percentage of children of the correct age for the grade" to having an indicator of "percentage of children aged six who are in the first grade of primary school"(Sanchez & Rodriguez, 2016, p. 219-220). One hypothesis that could explain this change is that they are turning their focus on early childhood, as research suggests that human capital investment in the early years of childhood has higher returns (Psacharopoulos and Patrinos, 2018).

III. Interdisciplinary State of Knowledge

3.1. The Aspiration-Based Poverty Trap

Even when we see and hear stories of "self-made" individuals that come out of poverty, this takes a mixture of ability and luck that is sometimes hard to find. Social scientists have tried to explain the reasons why it is difficult to break out of poverty, and the ways out of it, which is how the term "poverty trap" came into existence. One definition for the term is a situation when the scope for growing income or wealth at a very fast rate is limited for those who have too little to invest, but expands dramatically for those who can invest a bit more (Duflo and Banerjee, 2011). In education, this is often the case, as lower income individuals tend to invest less in education, as costs are marginally higher: they have lower endowments to begin with and therefore endure a higher cost for education. Indeed, empirical literature has shown that poorer families spend a smaller fraction of their income in education (Banerjee and Duflo 2005, cited in Garcia et al, 2018). And it seems that a partial explanation for this difference can be found in a gap of aspirations.

The emergent theoretical literature has coined the term "aspirations failure" — a situation characterized by the inadequacy between an individual's aspirations and their potential (Guyon and Huillery, 2018). It has been shown that not only do lower income families have lower aspirations for their children than richer families (Sosu, 2014; Oketch et al, 2012); but that there are also differences in the aspirations that teenagers set for their future according to their income. Guyon and Huillery (2018) show empirical evidence that lower socio-economic status teenagers in France had lesser knowledge of their own options after junior high school, leading them to aspirations failures when they did not attain their full potential. If poverty affects an individual's ability to set goals in line with their potential, as they suggest, realized outcomes are further suppressed, resulting in an aspiration poverty trap.

This is consistent with a model of low aspirations inducing lower investments and income inequalities (Genicot and Ray, 2017), and a model of an identity-based poverty trap where beliefs related to social inferiority influence the perceived probability of success, which in turn affects their conduct in a manner that reinforces their beliefs (Hoff and Stiglitz, cited in Guyon and Huillery, 2018).

3.2. Social and Individual Factors Influencing Aspirations

Aspirations are biased when they don't match an individual's potential. Instead of optimally setting aspirations according to their strengths and opportunities, individuals might be biased by factors that they cannot control. For instance, both parental (socioeconomic status, household size and age) and child characteristics (birth order, gender and conduct problems) are factors that predict parental aspirations for their children's education (Sosu, 2014).

There are two conditions that we might consider to assess whether an individual sets their aspirations in accordance to their potential: whether they know all the options on the table,

and whether they correctly assess their abilities and constraints. This is the approach that Guyon and Huillery take on their study on French teenagers (2018). They show that adolescents' awareness of existing educational options varies by socioeconomic status (SES), and that their self-perceptions of their academic potential are stereotyped. In their study among classmates of similar achievement, low-SES students underestimated their current academic capacity compared to high-SES students. At the same time, low-SES students incorrectly assessed their constraints: they overestimated the influence of social origin on future academic success (Guyon and Huillery, 2018).

From a sociological point of view, Crivello (2015) conducts a qualitative study following fifty young Peruvians and their families, analysing their aspirations in the light of their migratory stories. She highlights the uncertainty under which impoverished and marginalized young people generate aspirations. In Peru, as is the case in diverse and previously colonized countries, the "myth of progress" promises freedom through education (Degregori, 2007 cited in Crivello, 2015), and schooling remains a powerful narrative shaping aspirations. The aspiration to obtain a higher education is so present that it is one of the main reasons for migration in her study, and it is frequently mentioned as the exit from poverty that the families perceive.

Crivello finds that aspirations are rarely just about the goals of individuals — the role of the family is important, and they partially determine a child's aspirations. This is consistent with the work of Sosu (2014) showing the influence of household size and birth order on parental aspirations: the odds of parents having a higher educational aspiration decreased by 11% for each unit increase in family size; and mothers were 49% more likely to have higher aspirations for a first born child relative to other children in the birth order.

In terms of how gender affects aspirations, results are mixed in literature: whether or not girls (or their parents) will have lower or higher aspirations than boys seem to vary depending on the country (Sosu, 2014). In Scotland, mothers were 25% more likely to have higher aspirations for their girls than for their boys; whereas studies in China and in Japan showed that mothers had higher aspirations for their sons over their daughters(íbid). In a longitudinal study in Peru, Pasquier-Doumer and Risso Brandon (2015) have found that girls have a higher level of aspirations at age 8, other things being equal, but that this effect disappears in time, as girls lower more their aspiration between age 8 and 12 than boys.

Aspirations have also been studied on their role in the intergenerational transmission of ethnic inequalities. In this respect, Cosby and Picou (1973) evaluated differences in occupational aspirations between black and white adolescents. While their model found that social class indicators accounted for the largest effect estimates, the effect of race was inconsequential when socioeconomic controls were applied. Nonetheless, they found that their structural model explained less of the variance in occupational aspirations levels for black people, than for white people and for the general sample. They hypothesize that "an upsurge of black pride and growing black consciousness among southern blacks can be

expected to influence the development of occupational aspirations — even in the presence of very real disparity in current occupational opportunities." In a more recent study, Qian and Blair (1999) explore differences in educational aspirations by racial/ethnic groups, also in the United States. They find different factors affecting educational aspirations in diverse ways per group. For instance, they find parental involvement has a strong impact on educational aspirations for African Americans and Hispanics, while human and financial capital have stronger impact on educational aspirations for whites than for minorities.

In Peru, appurtenance to an indigenous group is also a source for inequalities. Recent research suggests that this is partially explained by an aspirational gap (Pasquier-Doumer and Risso Brandon, 2015a). Although similar, occupational aspirations of indigenous children tend to provide a lower socioeconomic status than non-indigenous children's aspirations. Yet, the authors suggest that the aspiration failure doesn't take the form of a lack of aspiration — they claim that aspirations of both groups are quite similar— but from a larger aspiration gap: the distance between the socio-economic status they aspire to reach and their current one is greater for indigenous groups. Alas, they conclude that indigenous children face the highest external constraints, and that ethnic-racial discrimination from the past has shaped socio-economic stratification, which does indeed work as a predictor of children's occupational aspirations (Pasquier-Doumer and Risso Brandon, 2015b, p. 221).

3.3. Conditional Cash Transfer Programs

The *Juntos* Conditional Cash Transfer Program has been one of the last of its kind to be implemented in Latin America; it is important to understand why these programs were implemented and to highlight what are the most important lessons they have left. During the 1990s, countries in the region started taking a turn in their anti-poverty policies towards investment in human capital, as they believed it was the fundamental reason for intergenerational transmission of poverty. As such, they started this program to provide a cash incentive to poor families on the condition that they invest it in the health and education of their children (Skoufias et al., 2001). One of the first conditional cash transfer programs of this kind[3] was Mexico's *Programa de Educación, Salud y Alimentación* (the Education, Health, and Nutrition Program), known by its Spanish acronym, PROGRESA. At the start of its implementation, 320 communities were to receive benefits immediately (spring of 1998); while 186 were assigned to receive benefits later (end of 1999) (ibid). This random assignment into control and treatment groups offered a great opportunity for economists to measure its short term effects.

Conditional cash transfer programs can influence aspirations in many ways, for instance by impacting education of the population. It has been identified that even if it has little to no short-term effects on primary school enrollment (Paul Schultz, 2004; Skoufias et al., 2001), there has been a significant positive effect for secondary school enrollment, especially for

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[3] Other kinds of conditional cash transfers include grants for business start ups, for an example of a program designed to help the poor and unemployed become self-employed artisans in Uganda, see (Blattman et al., 2014)

girls (Coady and Parker, 2004 cited in Parker and Todd, 2017). Similarly, the program has proven to reduce repetition and dropout (íbid). Some researchers have also run simulations from short run impacts, finding a potential increase of 0.6 to 0.7 years of schooling in the long run. However, it should be noted that research does not find any effects on knowledge attained by children, for example, there have been little to no effects in terms of test scores (íbid).

Another mechanism through which they can impact aspirations is through the change in age by which they enter into the labor force. There have been studies showing its significant impact in the reduction of labor-force participation: the probability of working was reduced up to 6% for boys and 3% for girls aged 12–17 when the program started, and by about 1% in work participation work for boys between 8 and 11 years old, and in 4% in domestic work for girls aged 12–17 pre-program (Skoufias et al., 2001).

There are some studies that suggest that the CCT program would have effects on gender dynamics in the household, which in turn could potentially have an effect on aspirations particularly for the girls in the household. Some gendered effects were intended in the design of PROGRESA. Originally, monetary benefits were given to the mother or female head of household in hopes of improving their status relative to men. Also, grants linked to educational attainment are larger for girls at the secondary and high-school levels than for boys (Parker and Todd, 2017). In this respect, some of the results identified have been that women in the household gain more power in decisions like children's education choices, whether the children can go out, etc. (Adato et al., 2000). Additionally, women in beneficiary households were 5% to 7% less likely to be victims of physical abuse than non-beneficiary women, albeit 3% to 5% more likely to be victims of emotional violence (Parker and Todd, 2017).

As we have seen, research on conditional cash transfer programs have focused on short-term impacts, and now the positive effect they have had on educational enrollment, gender empowerment and the postponement of enter to the labor force is common knowledge in the literature. A recent study has started to venture into its potential effect on aspirations in the short term.

3.4. Conditional Cash Transfer Programs and Aspirations

To my knowledge, there has only been one study on the effects of CCT programs in aspirations. García et al (2019) conducted research analysing the short-term effect of the Colombian large scale conditional cash transfer program "*Familias en Acción*" (FA) on educational aspirations of parents and children in poor households. FA differs from *Juntos* in two ways. First, that the bimonthly transfer is received per child enrolled in school; and second, that this amount doubles if the child is enrolled in high school education. In both cases, the bimonthly stipend is conditioned on school attendance.

The methodology of their study consists in using data from the impact evaluation of the program and a difference-in-differences approach, and they find a positive impact on aspirations for higher education, for both children and parents. After more than one year of exposure, parents were 11% more likely to aspire for higher education for their children, and children were 20% more likely to aspire to higher education. Interestingly, they find a larger effect for parents in the most socioeconomically disadvantaged households.

The authors acknowledge three factors of FA that could potentially contribute to said effect, in addition to the cash subsidy and attendance conditions. On one hand, for parents to prove attendance of their children, they had to ask for a certificate in the school, forcefully increasing their involvement in their children's education as they met with their teacher bimonthly. On the other hand, as part of the program, parents were given informational material discussing how education guarantees a better future for children in urban and rural areas. This was combined with community gatherings and optional activities targeted to mothers where they received training on topics regarding their wellbeing and that of their children. Finally, they acknowledge that frequent contact with community leaders and teachers could increase aspirations as behaviour and belief formation depend greatly on the behaviours and beliefs of others (Bandura, 1971 cited in Garcia et al., 2019). By contrast, in Peru, school attendance is verified by a *Juntos* representative directly at the school, and even though they also occasionally host workshops with the mothers who are beneficiaries of the program, covered topics do not include returns to high school education, but rather focused on health issues, conditionalities' compliance and productive activities. In the next section we will develop the mechanisms that could be behind a potential influence of *Juntos* on aspirations.

3.5. Channels Through Which *Juntos* Could Influence Aspirations

Economic Effect

The most evident effect of conditional cash transfer programs on a household is the income effect. In the case of Juntos, Perova and Vakis (2009), have shown that the program has had a moderate effect on reducing poverty and increasing both income and consumption. Similarly, Escobal and Benites (2012) find an income effect is significantly larger than the amount of the cash transfer — 153 soles, around $51 USD—, suggesting that the parents are able to invest at least a portion of it to generate returns. It's been argued that the attenuation of liquidity constraints can influence aspirations as they reduce the psychological distress and short-sightedness associated to living in poverty (Banerjee, 2011); García et al, 2019)

Access to Education and Health Services

In 2012, Perova and Vakis conducted a comprehensive study on long-term effects that the program had had since its implementation in 2005. Through an instrumental variable methodology, they study the program impact on education and health, among other issues. In

terms of education, they find that family participation to the program had a 25% positive effect on the probability that a child was attending school at the time of the survey. Nonetheless, even if attendance seems to have increased for program beneficiaries, a qualitative study still found some absenteeism issues due to the fact that parents needed help from their children for agricultural tasks, and also because monitoring of assistance from the program administration hadn't been efficient and parents didn't think they would be penalised for the absence of their children (Alcázar, 2009). In the same study, the author compares two similar districts— in terms of poverty rate, altitude, demographics, etc. — among which one had implemented Juntos and the other one hadnot finding there had been an increase in late grade enrolment in the *Juntos* district, particularly for girls.

On a side note, the author also found an unexpected effect of increased teacher involvement on the district where the program was implemented with respect to the comparable town. that in a district where the program was implemented, teachers were more likely to take action when a child missed five days of school in a row, their parents affirming that a teacher would come to the house and ask about the child's absence (Alcázar, 2009).

In terms of health access, Perova and Vakis (2012) find an increase in the use of health services: children from beneficiary households were 69% more likely to have received health checks in the three months prior to their survey and their mothers were 55% more likely to take them to the doctor's office if they had any symptoms of disease. Although less evident, access to health increases general wellbeing and school attendance, which influences educational and professional aspirations.

Family Dynamics

The effects of the program on daily family life is captured in the work of Jones et al. (2007), who conduct a qualitative comparison between beneficiaries and non-beneficiaries. They find change in time use within the beneficiary families, as women who no longer have the support of their children in domestic and agricultural work experience an increase in their workload, and fathers become more interested in the educational performance of their children. Finally, they document a decrease in domestic violence for beneficiary families, as bargaining power and financial independence increases for mothers (cited in Escobal and Benites, 2012). In terms of changes in parent involvement that are associated with the program, according to school officials, beneficiary parents seem more likely to consult teachers, help their children with homework and send them to school (Alcázar, 2009).

Timeuse of Children

Escobal and Benites (2012) find a change in time distribution for children, as time spent on paid work goes from 9.87 minutes a day on average in the control group to less than half a minute in the treated group. On the contrary, however, time spent on unpaid work sees an increase of almost 50%, going from 21.25 to 44.04 minutes a day on average for the control and treated group, respectively. Time use in study and play is not significantly different

between the two groups, although they seem to be marginally reduced for the treated group with respect to the control. The authors hypothesize that the cash transfer generated by *Juntos* allows the adults of the household to carry out new economic activities, potentially causing that domestic work previously carried out by adults be transferred as an additional burden to the children of the household.

Change in Attitude Towards Life and Ambition for Parents and Children

Some research has used a longitudinal data survey to assess differences in feelings, attitudes and perceptions between beneficiaries and non beneficiaries. For instance, Escobal and Benites (2012) found that 67.96% in the control group versus 44.68% in the treatment group were "satisfied with their life" and 80.78% versus 50.53% in the treatment group were "satisfied with life achievements." In the case of the children, when asked if they thought that "the government was doing the right for children like them," 75.87% of the control group agreed, versus 54.36% in the treatment group. To the statement of "if I make an effort, I can improve my life situation," 95.35% of children in the control group agreed, while 83.51% in the beneficiary group agreed. Even if the results above are significant at least to the 95% confidence interval, it should be highlighted that this study does not implement child or mother fixed effects, so results should be read as correlation, not causation.

Success stories and role models

Finally, this hasn't been explored by the literature yet, but the program's family accompaniment could also be a channel through which aspirations grow for beneficiaries. As identified by Garcia et al. (2019) for the FA program, conditional cash transfer programs "increase exposure to positive role models and potentially expand their information set" (p. 50).

All of the mechanisms previously discussed offer ways in which *Juntos* can influence aspirations. Now, we will contrast this view with the features that still offer a challenge for the program's objectives. The following sub-section discusses the identified limits of the program.

3.6. Limits of the Program

Supply and Quality of Services

Even though there have been some undeniable positive results of the program, it still faces some administrative challenges. Research has found that these challenges include, but are not limited to ineffective implementation of mechanisms to verify conditions compliance, logistical issues in the processes for registering, controlling and paying transfers, and difficulties with identifying beneficiaries, among others (Escobal and Benites 2012; Alcázar, 2009). These results occur even after significant transfers received by the ministries of Education and Health from the National Government. The resources supplied by the state don't always get to their intended destination or are enough. For instance, although districts

where *Juntos* is implemented should receive educational kits for the schools including coursebooks and supplies, Alcázar (2009) — who compares schools in a beneficiary and a non beneficiary district — found that students in the beneficiary district were less likely to work with a coursebook on mathematics and communication. The author posits that deficiencies of this kind in areas where Juntos operates are key to explaining the low or no impact of the program on key variables, particularly the fact that it has had no impact on learning (Sánchez and Rodriguez, 2016).

Reaching the Most Vulnerable

Despite the program's best intentions to help the most in need, the administration of the program has to encounter the challenge of Peruvian geography and lack of infrastructure to connect villages in rural areas. This has very tangible effects on the cost-benefit analysis for a household who is a potential beneficiary. For example, in Vinchos, a district that has implemented the program in Ayacucho, Peru, the average time it takes for beneficiaries to reach the bureau to receive the conditional transfer payment is 100 minutes (Alcázar, 2009). More than half (56%) take between one and two hours, 23% take more than two hours and even the beneficiaries from distant population centres, who represent 13% of the total, spend four hours to get to the collection site. Moreover, according to the information provided by the beneficiaries, the cost this represents for them amounts, on average, to S/. 8 — around $2.5 USD— a cost that can be as high S/.20 PEN ($6 USD) — 10% of the value of the cash transfer— for the population who face the longest distance.

Trust of Participants

In a qualitative study, Escobal and Benites (2012) found a negative perception of the program from its own beneficiaires. Some of them mentioned other conditionalities being asked, suggesting information problems, and also that other State programs or policies take advantage of the program's wide coverage to advance their own agendas on the population, resulting in a sense of fatigue towards what is perceived a very demanding program.

IV. Data, Context and Methodology

4.1. Data and Context

This research uses quantitative and qualitative data. The study's quantitative data is derived from Young Lives, a long-term longitudinal study of childhood poverty combining survey and qualitative approaches with children and their parents. The study follows 2000 children in Peru in five rounds, when they are 1, 5, 8, 12 and 15 years old, respectively. I will use mostly data from round five, which was collected in 2016 (Sánchez et al, 2018). The data set is composed by information on community level characteristics, household level socioeconomic characteristics and individual characteristics. Particularly, it includes the data on affiliation to the conditional cash transfer program Juntos at the household level, and

implementation of the program at the community (district) level; which are illustrated in Table 1A.

Table 1A: Juntos distribution community and household level		
Community level Juntos implementation		
Yes	808	45.06%
No	985	54.94%
Total	1,793	100.00%
Household level Juntos affiliation		
Yes	442	24.65%
No	1,351	75.35%
Total	1,793	100.00%

At the household socioeconomic level we will focus on covariates that are taken into account by the poverty index algorithm used by the Peruvian government to select beneficiaries: per-capita monthly spending — as a proxy for monthly income, type of health insurance, combustible used for cooking, roof material, maximum years of schooling in the household, language spoken by the household head, total number of appliances per household and whether the household is in a rural or urban area.

Additionally, we will look at individual characteristics of the Young Lives children's academic ability, gender, ethnicity, disability and birth order. These will allow for us to look for potential heterogeneous effects. Academic ability will be measured by the teenagers' average result (on a scale from 1 to 100) on three cognitive tests: Peabody Picture Vocabulary Test (PPVT), Reading Comprehension Test and Mathematics Test. The variable used to account for ethnicity will be the child's mother native language — referred to as the child's mother tongue. Language is the most commonly used marker of ethnicity identification, and it's very useful in Peru as people don't necessarily use the term of ethnic group except for some native communities in the Amazon region (Pasquier-Doumer and Risso Brandon, 2015a). But knowing that a child's mother tongue is Quechua, Aymara or any other native language will indicate that they belong to an ethnic group that has been historically discriminated against (Portocarrero, 2007). Gender and disability are directly asked in the questionnaire, while a dummy variable was created to indicate if a child is the oldest sibling, in order to measure birth order.

Table 1B presents household and individual level characteristics among beneficiaries and non-beneficiaries of the Juntos program. As could be expected, beneficiary households spend less, and their houses are of worse quality: they are more likely to use solid fuel for cooking (which signals that they have no connection to electricity or gas) and to have a roof made of a material other than concrete. They are in general less educated, and have less household appliances. Heads of households are more likely to speak a native language, and they are more likely to live in a rural area. In terms of individual characteristics, beneficiary and non-beneficiary teenagers are balanced in terms of gender and disability. On the other hand,

beneficiary teenagers are more likely to have their mother tongue be native than non beneficiaries, and 10 percentage points less in their cognitive test average. There are also more oldest siblings in the beneficiary sample.

Table 1B: Household and individual characteristics by for treatment and control groups				
	Non-beneficiaries		Beneficiaries	
	Mean	St. Dev.	Mean	St. Dev.
Household level data				
Per-capita monthly spending	275.7615	293.1364	110.6021	70.88693
Per-capita electricity spending	11.26294	12.01052	2.951237	3.206338
Child receives private insurance	.0125833	.1115085	0	0
Use of solid fuel cooking	.1280533	.3342729	.7036199	.4571781
Presence of non-concrete roof	.5581051	.4967962	.9638009	.1869969
HH max. years of schooling	12.17839	2.59601	10.13348	2.044363
HH head speaks native language	.0170244	.1294102	.2081448	.406441
Total appliances per household	4.015544	2.309509	1.348416	1.1687
Household area (1=Rural; 0=Urban)	.1243523	.3301053	.6628959	.4732564
Individual personal data				
Gender (1=Girl)	.4951887	.500162	.4977376	.5005614
Mother tongue (1=Native; 0=Spanish)	.0717987	.2582498	.3755656	.4848174
Child has disability	.0180587	.1332138	.0137615	.1166331
Young Lives child is oldest child	.5011103	.5001839	.3371041	.4732564
Cognitive Test average	60.44674	13.74179	50.18774	14.17304
Observations	1351		442	

Finally, the Young Lives data set also includes information on educational and professional aspirations. To measure the first, adolescents were asked: "Imagine you had no constraints and could study for as long as you liked, or go back to school if you already left. What level of formal education would you like to complete?" The answers included no education at all (0 years); any number of years of primary school years (first 6 years of formal education); any number of high school years (7th to 11th year of formal education); a productive or occupational course (one year long and normally taken after high school); a technical or pedagogical track in an institute (3 years after high school); a university bachelor degree (5 to 6 years after high school); and the aspiration to attain a master or doctorate degree (approximately 7 years after high school). Table 2A presents the distributions of these categories of educational aspirations by treatment condition.

Table 2A: Descriptive educational aspirations by category and treatment condition							
Non beneficiaries				**Beneficiaries**			
None	5	0.38	0.38	None	2	0.47	0.47
Incomplete primary or high school	3	0.23	0.60	Incomplete primary or high school	2	0.47	0.94
Complete high school	30	2.26	2.86	Complete high school	6	1.41	2.34
Productive or occupational course	5	0.38	3.24	Productive or occupational course	5	1.17	3.51
Technical or pedagogical institute	185	13.94	17.18	Technical or pedagogical institute	63	14.75	18.27

University bachelor degree	1,021	76.94	94.12	University bachelor degree	341	79.86	98.13
Master or doctorate degree	78	5.88	100.00	Master or doctorate degree	8	1.87	100.00
Total	1,327	100.00		Total	427	100.00	

To measure professional aspirations, we will use the answers given to the question "When you are about 25 years old, what job would you like to be doing?" For simplicity, I generated an ordinal scale for professional aspirations, following the model proposed by Pasquier-Doumer and Risso Brandon (2015), who also evaluate professional aspirations in Peru. They create categories of low, intermediate, high and very high aspirations based on the number of years of study they require and the expected wages associated with the job. Table 2B displays the professions according to this ordinal category, by treatment group.

On the qualitative side, 24 interviews were conducted on 24 adolescents (14 girls and 10 boys) between 12 and 17 years old in February 2020. The objective was to learn more about factors that influence their aspirations and attainments after high school. One of these communities was San Pedro de Chonta, located in the high jungle region of Huánuco, and the other two communities were Aco and Fundo Aco, located in the andean region of Ancash. The adolescents interviewed in Aco and Fundo Aco were contacted through their mothers during a bimonthly meeting they had with a representative from the conditional cash transfer program, *Juntos*.[4] The adolescents interviewed in San Pedro de Chonta were reached through a contact in the village who also conducted the interviews.

It is important to acknowledge that the interviews were conducted in the summer, during the school holidays. This is a period when some of the teenagers — around 15 years old and above— work in the field to provide an extra revenue for the family, sometimes away from the household. We were able to contact a sample including those who were not yet working and those who were working in the village by interviewing them early in the morning before they left for work. Because of practical constraints, interviews could only be done to beneficiaries of the program, so even if the content of the interviews is rich in insights about teenager aspirations for the future, it is of course not indicative of the effect of the program on such aspirations, given that the counterparts — teenagers who are not beneficiaries of the program, the control group — are not interviewed.

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[4] The general topic of the research was presented and the mothers agreed to contact their sons so they could be interviewed that same day or the next.

Table 2B: Professional aspirations by category and treatment condition

Non Beneficiaries			Beneficiaries		
Low aspirations	*51*	*4.19%*	*Low aspirations*	*16*	*3.93%*
Construction worker	2	3.92%	Cook	9	56.25
Cook	34	66.67%	Farmer	6	37.50
Domestic Worker/housemaid	1	1.96%	Tailor	1	6.25
Farmer/Labourer	6	11.76%			
Fulltime parent/Housewife	1	1.96%			
Market Trader/shop assistant	4	7.84%			
Sailor/ seaman	3	5.88%			
Intermediate aspirations	*132*	*10.86%*	*Intermediate aspirations*	*49*	*12.04%*
Driver /Taxi driver	8	6.06%	Driver	4	8.16
Mechanic	39	29.55%	Mechanic	21	42.86
Sportsman/woman/athlete	14	10.61%	Taxi Driver	1	2.04
Trader/ businessman/woman	6	4.55%	Trader/ businessman/woman	1	2.04
Secretary/Adm. assistant	26	19.70%	Secretary/Adm. assistant	6	12.24
Banker/Bank manager	2	1.52%	Banker/Bank manager	1	2.04
Pharmacist	7	5.30%	Pharmacist	2	4.08
Carpenter/Painter	3	2.28%	Hairstylist/ beautician	5	10.20
Hairstylist/ beautician	7	5.30%	Heavy machinery operator	6	12.24
Heavy machinery operator	17	12.88%	Electrician/Gasfitter	2	4.08
Electrician/Gasfitter	3	2.27%			
High aspirations	*262*	*21.55%*	*High aspirations*	*133*	*32.68%*
Actor/actress	3	1.15%	Artist	1	0.75
Artist	6	2.29%	Lecturer	1	0.75
Computer operator	10	3.82%	Nurse	35	26.32
Lecturer	1	0.38%	Policeman/woman	39	29.32
Nurse	38	14.50%	Singer	1	0.75
Policeman/woman	92	35.11%	Teacher	33	24.81
Military man/woman	6	2.29%	University Student	5	3.76
Teacher	26	9.92%	Religious leader/priest	1	075
University Student	12	4.58%	Journalist	2	1.50
Journalist	12	4.58%	Musician/ dancer	1	0.75
Singer /Musician/ dancer	10	3.82%	Fashion Designer	6	4.51
Cabin crew/ air hostess	5	1.91%	Obstetrician	8	6.02
Software programmer	2	0.76%			
Model	1	0.38%			
Fashion Designer	26	9.92%			
Obstetrician	12	4.58%			
Very high aspirations	*771*	*63.40%*	*Very high aspirations*	*209*	*51.35%*
Accountant	42	5.45	Accountant	15	7.18
Dentist	7	0.91	Doctor	27	12.92
Doctor	116	15.05	Engineer	100	47.85
Engineer	285	36.96	Lawyer	26	12.44
Lawyer	82	10.64	Pilot	1	0.48
Pilot	4	0.52	Politician	1	0.48
Politician	1	0.13	Scientist	1	0.48
Scientist	3	0.39	Veterinarian(animal doctor)	1	0.48
Veterinarian(animal doctor)	25	3.24	Manager/Management	21	10.05
Manager/Management	81	10.51	Psychologist	9	4.31
Psychologist	49	6.36	Economist	2	0.96
Economist	6	0.78	Architect	5	2.39
Architect	70	9.08			

4.2. Methodology

This research uses a combination of qualitative and quantitative methods; first, to describe what the educational and professional aspirations of teenagers in Peru look like; and second, to assess whether or not the conditional cash transfer program "*Juntos*" has had an effect on this aspirations.

For the qualitative section of the study, the interview guides were constructed based on the methodology used by Guyon and Huillery (2018). In said study, in order to get a comprehensive look on teenager's perspectives of possibilities and preferences, students were first asked to list all the existing educational options of which they were aware (salient options), then, among these, which they felt academically capable of pursuing (attainable options). Finally, among the attainable options, students selected were asked those they would prefer to pursue (preferred options), and which job they would like to have (professional aspirations).

In my version of the interview (Annex 02), to make the questions more concrete— and easier for the adolescents to respond to— , interviewees were put in an imaginary situation of a teenager that lived in the same village and was the same gender as them who had just finished high school and did not know what to do next. Teenagers were then asked to list the salient options for the imaginary subject. Finally, they were asked about their perceptions about potential obstacles they could find in the accomplishments of their goals in the future, and how important they thought they were — if at all. The quantitative analysis methodology is explained in the following section.

V. Identification Strategy

The goal is to evaluate the impact of the conditional cash transfer program *Juntos* on educational aspirations of teenagers. In general, when attempting to assess the effects of a program, the ideal situation is that population assignment to it — to the "treatment"— was random. This way, we could assume that individuals that are not treated (the control group) and individuals that are treated (the treatment group) are similar in all relevant characteristics; and any change in outcome between both groups can be assigned to exposure to the treatment. That is, selection bias is avoided. In social sciences, however, we often encounter the challenge of trying to to identify causation when assignment to treatment isn't random. In the case of the *Juntos* program, the assignment to treatment isn't random: How could we isolate the treatment effect?

The answer lies on the first two steps of the selection process. First, eligible districts are chosen based on socioeconomic characteristics including the poverty rate of the district. Then, individuals are selected in treated districts if they are considered "poor" according to a poverty index algorithm. Graph 01 illustrates correlation between wealth index and whether the individual lives in a district where Juntos operates.

Graph 01: Two way scatter WI and JUNTOPRG
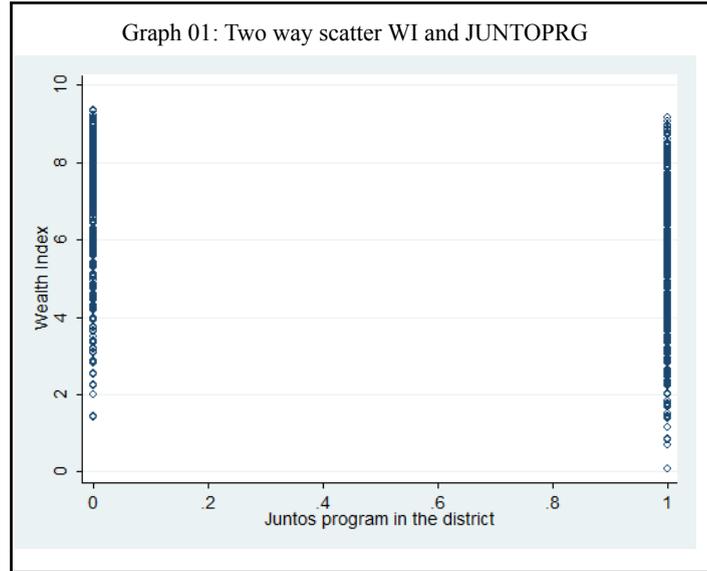
This means that some people who would be eligible for the program can't access it because they live in an untreated district, even though they are as poor as the people in the treated district. By comparing individuals who would've been selected had Juntos been implemented in their district, we will estimate the treatment effect of the program.

The first step will be to regress the probability of treatment (P) in treated communities:

$$P(Tij|(Dj = 1)) = \delta0 + \delta1Hij + \varepsilon ij \tag{1}$$

Where Tij is equal to 1 if individual i is a current beneficiary of Juntos in district j. Dij is a dummy variable with value 1 if the district implements Juntos; and Hij is a vector of a number of socio-economic characteristics that compose the poverty index algorithm used for selection into the treatment. Applying the values $\delta0$ and $\delta1$ to the sample of households in untreated communities will give the predicted probability of treatment in untreated communities had the program been implemented.

This prediction will serve to implement propensity score matching. In this technique, the outcome of each treated individual is compared with that of the untreated individual whose propensity score value is closest, or to a weighted average of the outcomes of control group individuals who have a similar propensity score value (Fougère and Jacquemet, 2020). So, we will apply the following basic logistic model on matched pairs to estimate the effect of Juntos in educational aspirations:

$$Aij = \beta0 + \beta1Tij + \beta3Hi + \beta4Xi + \varepsilon ij \tag{2}$$

where *Aij* is the outcome aspiration of individual *i* in district *j*; $\beta0$ is a constant term and $\beta1$ to $\beta5$ are coefficient estimates; *Hi* is a vector for the socioeconomic characteristics of the household, and *Xi* is a vector for personal characteristics of *i*.

The household characteristics used for this estimation of the propensity score are based on the algorithm used to determine eligible candidates for the Juntos program — the detailed list of the algorithm's variables and its equivalents in the Young Lives database can be found in Annex 03— . Table 3 shows the results of this estimation. The preliminary model includes all variables mentioned in the algorithm, while the final model that I used for the propensity score is the result of a series of tests until the covariates used were all significant at the 90% confidence level and their coefficients were higher than 0.10. I also took into account that covariates were not strongly correlated, and decided to keep the variable "Household maximum years of schooling" because — as we will see in the next section — it's highly correlated to the outcome.

Table 3: Estimation on the probability to be a Juntos beneficiary in the districts where it's implemented (treated districts)

	(Preliminary Model)	(Final Model)
Currently Juntos beneficiary		
Possession of car	-0.048	
Child receives private insurance	0.000	0.000
Rural area	0.083	0.485***
Per-capita monthly spending	-0.002**	-0.001**
Per-capita electricity	-0.035*	-0.049***
Household overcrowding	-0.171***	
Presence of earth floor	0.238	
Use of solid fuel for cooking	0.226	0.443***
Presence of non-concrete roof	0.547**	0.644***
Household with no connected utilities	-0.629*	
Household with all utilities connected	-0.233	
Presence of toilet	0.146	
HH head speaks native language	0.365*	0.581***
Native mother tongue	-0.025	
Maximum schooling in HH	-0.039	-0.027
Consumer durables index	0.453	
Total appliances in the household	-0.148	-0.172***
Total telecom items in the household	-0.056	
Total telecom items and appliances	0.080	
Possession of blender	0.083	
constant	0.687	-0.361
Number of observations	804	
bic	986.141	1232.762

* p<0.05, ** p<0.01, *** p<0.001

Four different methods were used to match observations. The first was nearest neighbour matching, which randomly orders the treatment and control groups, then finds the control observation with the closest propensity score for each treated observation (Baser, 2006). The second one was Kernel matching, where treated units are matched with a weighted average of

all controls, inversely proportional to the distance between the propensity scores of each group (ibid). The option "common support" was selected to exclude any observation in the treatment group whose propensity score was higher than the maximum or less than the minimum score of the controls. The third was entropy balancing, a multivariate reweighting method used to reweight a dataset such that the covariate distributions satisfy a set of specified balance conditions (Hainmueller, 2012). Finally, following Becker and Ichino (2002) a propensity score of the treatment was estimated on the control variables and individuals were stratified in "blocks" according to their propensity scores such that the probability of treatment was balanced in each of the blocks.

As all of the techniques showed relatively similar outcomes, we will display the results obtained with the Kernel matching method; and the results using the alternative techniques will be discussed in the robustness checks section. Annex 04 compares the balancing of covariates before and after matching with each of the methods.

VI. Results

This section will be divided into three parts. First, I will expose the results of the quantitative data analysis on the effect of the Juntos program on educational aspirations. Then, I will continue this analysis on the topic of professional aspirations. Finally, I will present the findings of the qualitative data analysis

6.1. Quantitative Analysis

6.1.1 Educational Aspirations

This section will be divided in four parts. The first will describe educational aspirations before matching and without looking at the treatment effect; the second will display results on matched observations; the third will check for heterogeneous effects; and the fourth will specifically look at effects on higher education.

6.1.1.1. Descriptive Results

We have seen in the existing literature that aspirations are somehow influenced by socio-economic status, so a very natural first step would be to verify whether this tendency exists in the data. For this, we will use the wealth index as a proxy of socioeconomic status. This value is a weighted average of housing quality, consumer durable items and utilities available in a household (Annex 05 exhibits the calculation details for the index). Graph 02 shows the relationship between educational aspirations and wealth index.

Graph 02: Educational aspirations by wealth index
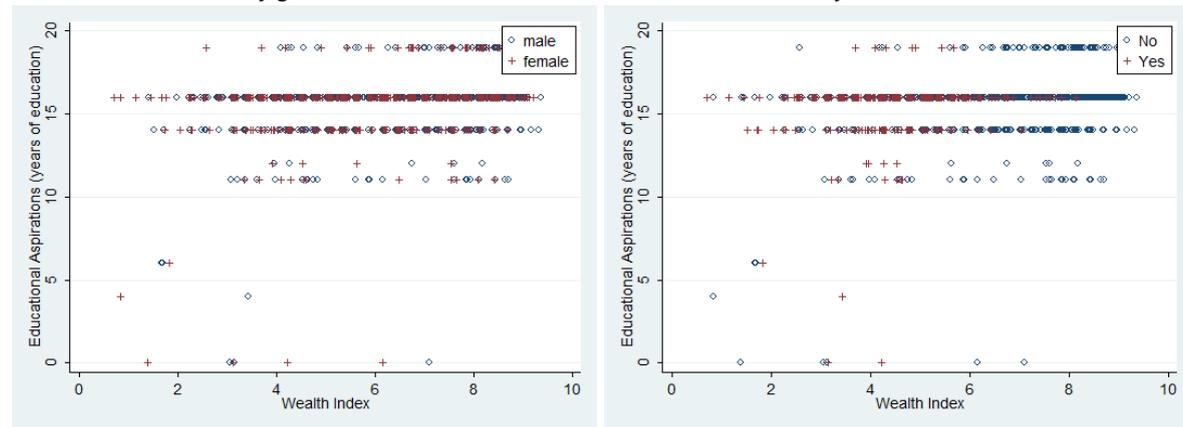
Notice that there seems to be a correlation between educational aspirations and socioeconomic status. Table 4A displays a regression of the number of years of education on the wealth index and a series of individual characteristics. Unfortunately, the sub-sample of disabled children was too small to conduct significant quantitative data estimations, so I decided to not include this covariate in the models. Models 1 to 3 include the control for wealth index, while alternately including gender, native mother tongue and birth order covariates. Model 4 control for the components of the wealth index: housing quality, consumer durable and service index. Models 5 adds the household's maximum years of schooling covariate. Cognitive test average is included as a proxy for ability.

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Table 4A: Logistic regression on Educational aspirations (number of years of education)

	(1) b/se	(2) b/se	(3) b/se	(4) b/se	(5) b/se
Wealth Index	0.062* (0.02)	0.076** (0.03)	0.063** (0.02)		
Housing Quality Index				-0.005 (0.02)	-0.019 (0.02)
Consumer Durable Index				0.018 (0.03)	-0.011 (0.03)
Services Index				0.150* (0.06)	0.134* (0.06)
HH maximum years of schooling					0.087*** (0.02)
Gender (1=girl)	0.184* (0.08)				
Native mother tongue		0.231* (0.12)			
Any oldest child			-0.062 (0.08)		
Cognitive Test average	0.037*** (0.00)	0.038*** (0.00)	0.037*** (0.00)	0.037*** (0.00)	0.032*** (0.00)
constant	12.995*** (0.20)	12.924*** (0.21)	12.807*** (0.22)	12.710*** (0.24)	12.355*** (0.24)
r2	0.102	0.101	0.104	0.103	0.115
df_r	1750.000	1750.000	1748.000	1748.000	1747.000
bic	6651.149	6653.269	6662.249	6664.058	6646.506

* p<0.05, ** p<0.01, *** p<0.001

We can confirm that there is positive correlation between socioeconomic status and educational aspirations. For each unit increase on the wealth index (value from 1 to 10), the estimated educational aspiration increases 0.06 years. Interestingly though, when looking at the components of the wealth index, the strongest effect is carried out by the services index. The interpretation is that for any additional utility in the household (for example, drinkable water or electricity), years of education that the teenager aspires to increases between 0.13 and 0.15. Note that the constant value on each of these models is at least 12.24 years of education. This means that holding all variable values to 0, the average teenager in the sample will aspire to continue their studies one year after high school, as the latter finishes at year 11 of regular formal education.

As for individual characteristics, we notice that girls aspire to 0.18 additional years of education compared to boys; and native mother tongue individuals have higher educational aspirations than spanish mother tongue individuals by 0.23 years. Cognitive test averages (measured on a scale from 1 to 100) are also positively correlated to the outcome: 1 additional point on the test renders an increase in aspiration of years of education of 0.03.

6.1.1.2. Educational Aspirations on Matched Observations

Now I will present the results of the estimation of the effect of the *Juntos* program on educational aspirations, before and after matching. Educational aspirations are now measured in an ordinal category, where 0 represents the wish (aspiration) to have no education at all; 1 is the aspiration to study some years of primary or high school, but not complete it; 2

Table 4B: Ordered logit model, odds ratio on ordered educational aspirations

	(1) WI	(3) Kernel
Currently Juntos beneficiary	1.683**	1.804***
	(0.28)	(0.21)
Cognitive Test average	1.060***	1.046***
	(0.01)	(0.01)
Gender (1=girl)	1.430**	1.389**
	(0.17)	(0.16)
Native mother tongue	1.56*	1.787***
	(0.29)	(0.24)
Child with disability	1.683	0.304
	(1.03)	(0.21)
Oldest sibling	.910	.896
	(0.11)	(0.11)
Wealth Index	1.176***	
	(0.05)	
Rural area		0.693*
		(0.10)
Per-capita monthly spending		1.002*
		(0.00)
Per-capita electricity spending		0.984
		(0.02)
Use of solid fuel cooking		0.765
		(0.12)
Presence of non-concrete roof		1.739
		(0.65)
HH max. years of schooling		1.168***
		(0.03)
HH total appliances		1.009
		(0.06)
cut1constant	0.358*	0.996
	(0.18)	(1.00)
cut2 constant	0.623	1.839
	(0.28)	(1.79)
cut3 constant	2.679*	6.901*
	(1.04)	(6.61)
cut4 constant	3.286**	8.192*
	(1.27)	(7.85)
cut5 constant	22.306***	46.128***
	(8.42)	(44.26)
cut6 constant	3116.035***	16047.540***
	(1376.49)	(16749.02)
bic	2579.662	1313.155

* p<0.05, ** p<0.01, *** p<0.001

represents desire to obtain a high school degree; 3 indicates a productive or occupational 1 year course after high school; 4 indicates aspiration to complete a technical or pedagogical track in an institute; 5 is equivalent to aspire to a university bachelor degree; and 6 is equivalent to a master or doctorate degree.

Column 1 in Table 4B displays the regression of ordered educational aspirations categories on the treatment before matching, controlling for wealth index. Column 2 displays the estimations of this regression using Kernel matching: keep in mind that this is a comparison between *Juntos* beneficiaries living in treated district, and teenagers with similar propensity scores who are non-beneficiaries of the program, meaning that they would've been eligible had the program been implemented in their district. In both cases, results show a positive correlation of the treatment with educational aspirations. Just by holding the wealth index and child characteristics constant, we see that beneficiaries of the program are 1.69 times more likely to have a higher category of educational aspirations than their non-beneficiary counterparts. When we compare teenagers of similar propensity scores, this coefficient goes up, rendering beneficiary teenagers to be 1.804 times more likely to have a higher aspiration than their non-beneficiary pairs.

In terms of their individual characteristics, being a girl maintains its positive effect on educational aspirations, along with having a native language as a mother tongue and the average of the cognitive tests. In terms of household characteristics, teenagers living in a rural area have 69% more chances of having higher educational aspirations, holding all other variables constant. An increase of one nuevo sol (approximately $0.33) is correlated with a 0.2% increase in likeliness of a higher aspiration, and an increase of one year in schooling in the household is strongly associated with a 1.16 higher chance of teenager's having a higher aspiration.

6.1.1.3. Heterogeneity Check

Literature suggests that gender, ethnicity and birth order have an effect on aspirations. So, we will use the database to check whether the program has different effects subject to these factors. Table 4C displays treatment coefficients for different demographics, using the same socio-economic controls and Kernel matching from the results in Table 2B, column 2.

Table 4C: Ordered logit models, odds ratio on ordered educational aspirations by demographic groups

	(Boys)	(Girls)	(Spanish)	(Native)	(Non oldest)	(Oldest)
Currently Juntos beneficiary	2.310**	1.328	1.838*	1.797	1.641	2.053*
	(0.67)	(0.44)	(0.46)	(0.76)	(0.43)	(0.74)
Native mother tongue	1.951	1.798			1.973*	1.997
	(0.76)	(0.71)			(0.63)	(0.94)
Any oldest child	0.772	1.086	1.032	0.670		
	(0.23)	(0.32)	(0.26)	(0.28)		
Gender (1=Girl)			1.436	1.166	1.224	1.838
			(0.37)	(0.49)	(0.32)	(0.64)
Cognitive Test average	1.050*	1.043*	1.037**	1.065*	1.040*	1.066***
	(0.02)	(0.02)	(0.01)	(0.03)	(0.02)	(0.02)
HH max. years of schooling	1.102	1.230*	1.166*	1.147	1.084	1.297*
	(0.08)	(0.11)	(0.09)	(0.11)	(0.07)	(0.15)
Socio-economic controls	Yes	Yes	Yes	Yes	Yes	Yes
cut1 constant	0.927	0.321	0.283	1.484	0.322	0.199
	(1.55)	(0.53)	(0.41)	(2.96)	(0.52)	(0.29)
cut2 constant	2.804	0.475	0.519	3.550	0.512	7.346
	(4.71)	(0.79)	(0.78)	(7.30)	(0.84)	(12.26)
cut3 constant	8.545	1.081	2.240	6.476	1.012	46.030*
	(13.99)	(1.72)	(3.08)	(13.25)	(1.60)	(76.91)
cut4 constant	9.815	1.266	2.631	7.419	1.215	49.922*
	(15.95)	(1.99)	(3.57)	(15.12)	(1.90)	(82.90)
cut5 constant	51.761*	7.786	17.549*	30.297	6.492	319.802***
	(83.70)	(11.52)	(23.12)	(60.17)	(9.83)	(521.61)
cut6 constant	15346.42***	2678.65***	9548.57***	6412.43***	1421.56***	239553.59***
	(28296.52)	(4271.61)	(14130.71)	(13646.28)	(2269.31)	(477128.07)
Number of observations	861	851	1467	247	927	787
bic	780.751	712.862	931.853	538.631	965.754	519.079

Even though we've seen that girls have generally higher educational aspirations than boys, treatment effects are higher and more significant for boys than for girls. Girls also have a positive treatment effect, but it is of smaller magnitude and less significant. A similar situation appears in terms of mother tongue. Although native maternal tongue children have higher aspirations, the program has a higher and more significant effect on spanish maternal tongue speakers than their native counterparts. In terms of birth order, children who are the oldest siblings in the household receive a greater effect of the *Juntos* program on their aspirations than children who are not.

6.1.1.4. Aspirations to Attend Higher Education

A different measure for educational aspirations is the probability of aspiring to continue their studies into university or a pedagogical or technical institute. Table 5A shows the result of a logit regression on the probability to aspire to go to university; Table 5B, on the probability to aspire to go to a pedagogical or technical institute; and Table 5C also conducts a regression on the aspiration to go to an institute, but excluding from the sample those who aspire to go to university.

Table 5A: Logit regression on probability to aspire to go to university

	(Overall)	(Boys)	(Girls)	(Spanish)	(Native)	(Non oldest)	(Oldest)
Currently Juntos beneficiary	1.736**	2.083**	1.506	1.623*	2.099	1.788*	1.572
	(0.35)	(0.59)	(0.43)	(0.38)	(0.82)	(0.44)	(0.55)
Gender (1=Girl)	1.297			1.386	1.020	1.061	1.868
	(0.26)			(0.33)	(0.37)	(0.27)	(0.60)
Native mother tongue	1.397	1.510	1.351			1.489	1.381
	(0.34)	(0.55)	(0.45)			(0.44)	(0.60)
Any oldest child	0.979	0.726	1.390	1.035	0.836		
	(0.21)	(0.21)	(0.43)	(0.25)	(0.37)		
Cognitive Test average	1.043***	1.051***	1.035***	1.044***	1.043**	1.040***	1.054***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
HH max. years of schooling	1.087	1.034	1.172*	1.046	1.173	1.064	1.114
	(0.05)	(0.06)	(0.09)	(0.06)	(0.11)	(0.06)	(0.09)
Socio-economic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
constant	0.099**	0.069*	0.165	0.135*	0.101	0.196	0.025***
	(0.08)	(0.09)	(0.17)	(0.13)	(0.15)	(0.22)	(0.03)
Number of observations	1714	861	851	1467	247	927	787
bic	1002.696	529.697	528.876	689.914	363.996	675.062	382.506

* p<0.05, ** p<0.01, *** p<0.001

Similarly to the ordered categories, the *Juntos* program has a positive effect on the probability to aspire to go to university. This is especially true for beneficiary boys, who are 2.08 times as likely to aspire to go to university than non-beneficiary boys when holding all other variables constant. Among those whose mother tongue is Spanish, beneficiaries have a more significant treatment effect on their aspirations than native mother tongue beneficiaries. But the treatment effect for native mother tongue teenagers is potentially larger — it's just not statistically significant. Finally, the effect among younger siblings is higher and more significant than among the oldest siblings.

In the case of aspiration to follow a technical or pedagogical track in an institute when looking at the whole sample (higher and lower aspirations), the treatment is now negatively correlated. Beneficiary teens are 0.7 times as likely as comparable non-beneficiaries to aspire to this educational level. This treatment effect is particularly statistically significant for boys: beneficiary boys are half as likely to want to study in an institute after high school than non -

Table 5B: Logit regression on aspiration to attend Technical or pedagogical institute - odds ratio by demographic group

	(Overall)	(Boys)	(Girls)	(Spanish)	(Native)	(Non oldest)	(Oldest)
Currently Juntos beneficiary	0.736	0.502*	1.093	0.792	0.515	0.699	0.854
	(0.17)	(0.16)	(0.35)	(0.20)	(0.24)	0.20)	(0.32)
Gender (1=Girl)	0.816			0.875	0.771	0.909	0.744
	(0.19)			(0.22)	(0.35)	(0.26)	(0.26)
Native mother tongue	0.541*	0.578	0.467			0.392*	1.008
	(0.16)	(0.23)	(0.20)			(0.14)	(0.48)
Any oldest child	1.093	1.318	0.869	0.866	2.195		
	(0.27)	(0.47)	(0.30)	(0.23)	(1.15)		
Cognitive Test average	0.986	0.978	0.998	0.980*	1.004	0.988	0.980
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
RURAL	1.541	2.339*	1.166	1.466	1.718	1.699	1.273
	(0.40)	(0.87)	(0.44)	(0.39)	(1.42)	(0.61)	(0.53)
HH max. years of schooling	1.055	1.128	0.969	1.071	1.065	1.069	1.089
	(0.05)	(0.08)	(0.08)	(0.06)	(0.10)	(0.07)	(0.09)
Socio-economic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
constant	0.363	0.686	0.127	0.484	0.033*	0.172	0.647
	(0.30)	(0.82)	(0.16)	(0.47)	(0.05)	(0.21)	(0.74)
Number of observations	1714	861	851	1467	247	927	787
bic	840.913	447.203	442.654	611.435	275.610	549.511	345.268

* p<0.05, ** p<0.01, *** p<0.001

Table 5C: Logit regression on aspiration to attend Technical or pedagogical institute - odds ratio by demographic group among non-university aspirers

	(Overall)	(Boys)	(Girls)	(Spanish)	(Native)	(Non oldest)	(Oldest)
Currently Juntos beneficiary	1.960	1.494	3.254	2.886	0.311	1.814	1.054
	(0.89)	(0.96)	(2.56)	(1.86)	(0.37)	(1.02)	(0.92)
Gender (1=Girl)	1.269			2.132	0.734	1.479	2.523
	(0.56)			(1.11)	(0.77)	(0.82)	(1.83)
Native mother tongue	0.356*	0.445	0.165			0.203**	1.251
	(0.18)	(0.31)	(0.15)			(0.12)	(1.35)
Any oldest child	1.809	1.681	2.455	0.885	10.709*		
	(0.81)	(0.98)	(1.88)	(0.45)	(12.77)		
Cognitive Test average	1.014	1.034	0.997	1.013	0.984	1.002	1.050
	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.04)
RURAL	1.761	5.359*	0.306	1.284	11.434	1.678	2.976
	(0.89)	(4.17)	(0.30)	(0.78)	(14.96)	(1.04)	(4.15)
HH max. years of schooling	1.720***	1.766***	1.751	1.560**	4.294*	1.615**	2.554*
	(0.21)	(0.26)	(0.50)	(0.23)	(2.58)	(0.24)	(0.94)
Socio-economic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
constant	0.005**	0.004*	0.035	0.026	0.000*	0.003*	0.001*
	(0.01)	(0.01)	(0.10)	(0.05)	(0.00)	(0.01)	(0.00)
Number of observations	368	205	163	314	54	204	164
bic	261.896	158.208	133.372	181.714	101.957	184.856	114.000

* p<0.05, ** p<0.01, *** p<0.001

beneficiary boys. Interestingly, the treatment effect for girls is potentially positive, albeit it is not statistically significant.

When restricting the sample to only the teenagers whose aspirations are lower or equal to the institute level (Table 5C), the correlation is positive on all demographic groups except for indigenous mother tongue children, suggesting that the *Juntos* program is correlated to higher aspirations among lower aspiration groups in most demographics. However, the results are not statistically significant.

6.1.2. Professional Aspirations

This section will focus on analysing whether the Juntos program had any effect on teenagers' professional aspirations, based on the categories of low, intermediate, high and very high aspirations discussed in Section IV.

Table 6A: Ordered logistic regression of categories of professional aspirations				
	(Overall) b/se	(Gender) b/se	(Ethnic) b/se	(Birth order) b/se
Gender (1=Girl)		1.094 (0.18)		
Native mother tongue			1.182 (0.23)	
Any oldest child				0.839 (0.15)
Cognitive Test average	1.048*** (0.01)	1.049*** (0.01)	1.050*** (0.01)	1.050*** (0.01)
Per-capita monthly spending	1.004** (0.00)	1.004** (0.00)	1.004** (0.00)	1.004** (0.00)
HH max. years of schooling	1.049 (0.04)	1.047 (0.04)	1.047 (0.04)	1.038 (0.05)
Socioeconomic controls	Yes	Yes	Yes	Yes
cut1 constant	0.849 (0.60)	0.898 (0.64)	0.924 (0.67)	0.742 (0.53)
cut2 constant	4.074* (2.84)	4.322* (3.10)	4.435* (3.16)	3.560 (2.54)
cut3 constant	18.303*** (13.11)	19.460*** (14.35)	19.935*** (14.61)	16.008*** (11.72)
bic	1798.817	1805.768	1805.039	1804.825
* p<0.05, ** p<0.01, *** p<0.001				

6.1.2.1. Descriptive Statistics

Similarly to how we started the previous subsection, we will first look at the socioeconomic and individual characteristics that potentially affect professional aspirations. Table 6A displays the results of an ordered logistic regression of categories of professional aspirations on the same socioeconomic and individual covariates used to estimate educational aspirations.

Similar to the case of educational aspirations, being a girl and having a native mother tongue are positively correlated to higher categories of professional aspirations, and being the oldest child in the household is negatively correlated to higher categories, meaning that the oldest child in the household is more likely to have lower professional aspirations than younger siblings. These coefficients, however, are not statistically significant.

Cognitive Test average results continue to be a strong predictor of the level of professional aspirations, as it worked for educational aspirations. Interestingly, while household's maximum years of schooling loses significance in predicting professional aspirations with respect to educational ones, household's monthly spending increases in importance predicting these kinds of aspirations. An increase of S/.1 PEN in monthly spending is correlated with a 0.4% increase in the probability of aspiring a higher category of professional aspiration.

6.1.2.2. Treatment Effect on Matched Observations

Now we will assess whether *Juntos* has an effect on beneficiaries once we apply matching methods. Table 6B presents the results of the ordinal logit regression on matched observations. We find that overall, *Juntos* beneficiaries are 1.45 times more likely to be in a higher aspirational category than matched non-beneficiaries when all other variables are held constant. Interestingly, the household's maximum years of schooling is not a statistical predictor for professional aspirations, as it was for educational ones. Instead, a one unit increase in per-capita monthly spending in the household — our proxy for monthly income— is associated with a 1.004 increase in the odds ratio of attaining higher professional aspirations categories. Cognitive test average is as strong a predictor for professional aspirations as it was for educational aspirations. In terms of demographic characteristics, the treatment effect is higher and more significant among boys, where beneficiaries are 1.72 times as likely to aspire for a higher category of aspirations than non beneficiaries. The effect is also higher among spanish speakers and oldest children, whose treatment effect (measured in odds ratio increase) is 1.54 and 1.9 respectively.

Table 6B: Ordered logit regression on categories of professional aspirations							
	(Overall)	(Boys)	(Girls)	(Spanish)	(Native)	(Non oldest)	(Oldest)
Currently Juntos beneficiary	1.457*	1.719*	1.258	1.538*	1.389	1.294	1.902*
	(0.25)	(0.42)	(0.31)	(0.30)	(0.48)	(0.29)	(0.54)
Cognitive Test average	1.048***	1.052**	1.054***	1.041***	1.075***	1.049***	1.048***
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)

	(Overall)	(Boys)	(Girls)	(Spanish)	(Native)	(Non oldest)	(Oldest)
RURAL	0.802	0.717	0.877	0.817	0.733	0.658	1.067
	(0.15)	(0.19)	(0.23)	(0.17)	(0.25)	(0.15)	(0.36)
Per-capita monthly spending	1.004**	1.005**	1.003	1.003*	1.006*	1.005**	1.003
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
HH max. years of schooling	1.045	1.010	1.068	1.059	1.005	1.007	1.097
	(0.04)	(0.06)	(0.07)	(0.06)	(0.07)	(0.06)	(0.08)
Native mother tongue		1.400	1.036			1.192	1.087
		(0.44)	(0.27)			(0.29)	(0.39)
Any oldest child		0.567*	1.304	0.925	0.735		
		(0.14)	(0.35)	(0.19)	(0.27)		
Gender (1=Girl)				1.212	0.828	0.820	1.819*
				(0.25)	(0.26)	(0.18)	(0.51)
Socio-economic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
cut1 constant	0.986	0.658	1.700	0.995	1.234	0.548	2.116
	(0.70)	(0.68)	(1.83)	(0.90)	(1.90)	(0.66)	(1.89)
cut2 constant	4.797*	5.799	4.671	3.745	10.567	2.952	8.905*
	(3.37)	(6.39)	(4.87)	(3.41)	(16.04)	(3.54)	(8.14)
cut3 constant	21.783***	17.078*	35.476***	17.392**	48.444*	11.899*	53.531***
	(15.75)	(19.43)	(37.69)	(16.35)	(74.18)	(14.54)	(50.40)
Number of observations	1751	881	870	1491	257	951	800
bic	1798.964	916.015	925.821	1231.411	638.996	1171.611	704.233

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

Accordingly, when regressing the probability to have high or very high aspirations on the treatment (Table 6C), the positive treatment effect maintained and increased in magnitude. Teenager beneficiaries are 1.8 times as likely to have high or very high aspirations than their matched counterparts. The effect is positive and statistically significant across gender and birth order, and the tendency that boys and oldest siblings have a higher treatment effect remains. In terms of maternal tongue, the treatment effect is higher and statistically significant among Spanish speakers, while there's no statistically significant effect among native speakers in this sample.

Table 6C: Logit regression on high or very high professional aspirations

	(Overall)	(Boys)	(Girls)	(Spanish)	(Native)	(Non oldest)	(Oldest)
Currently Juntos beneficiary	1.883**	2.018**	1.899*	2.139**	1.557	1.757*	2.436*
	(0.36)	(0.54)	(0.55)	(0.51)	(0.56)	(0.41)	(0.89)
Cognitive Test average	1.037***	1.037**	1.041***	1.030**	1.063***	1.036***	1.044***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
RURAL	0.731	0.514*	0.976	0.844	0.440	0.641	1.018
	(0.16)	(0.16)	(0.34)	(0.21)	(0.27)	(0.18)	(0.45)
Per-capita monthly spending	1.005**	1.004*	1.006*	1.003	1.009**	1.004*	1.007*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
HH max. years of spending	1.034	1.042	1.032	1.054	1.013	1.006	1.087

	(0.05)	(0.06)	(0.08)	(0.06)	(0.09)	(0.06)	(0.09)
Native mother tongue	1.114	1.456				1.516	0.673
	(0.36)	(0.49)				(0.40)	(0.30)
	(0.26)	(0.16)	(0.45)	(0.36)	(0.05)	(0.27)	(0.13)
Any oldest child	1.024	2.162*	1.780*	0.745			
	(0.28)	(0.78)	(0.45)	(0.33)			
Gender (1=Girl)				1.699*	2.120*	1.462	3.195**
				(0.41)	(0.76)	(0.35)	(1.20)
Socio-economic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
constant	0.350	0.135	0.492	0.408	0.030*	0.245	0.132*
Number of observations	1751	881	870	1491	257	951	800
bic	1007.616	564.646	499.754	696.130	354.650	708.348	356.349

* p<0.05, ** p<0.01, *** p<0.001

6.3. Qualitative results

A total of 24 teenagers were interviewed in February 2020, consisting of 14 girls and 10 boys. First, teenagers were asked their name, age and which grade they were at in school. Their ages were between 12 and 18, with an average of 14.2 years old and a median of 15. Out of the 24 teenagers; one was in 6th grade of primary school, one had finished high school and attended a preparatory academy to prepare for the university admission exam, one had finished high school and was neither working nor studying, and 21 were between 1st and 5th year of high school. Among them, 17 were in the right grade for their age, whereas the rest were one or two years behind. Second, they were asked about what they consider their strengths (or qualities) and their weaknesses. In general, they found it easier to identify positive than negative attributes, as they highlighted values like being studious, responsible and helping one's family and friends. Among the ones that mentioned weaknesses, they brought up irresponsibility and grouchiness, underlining the value given to responsibility and collaboration within the family and the community.

Next, they were asked about their salient options after finishing high school. As mentioned before, interviewees were put in the context of an imaginary teenager from their village, who asked about all options available for them after high school. The general salient options mentioned across the group were to work and/or to study, although usually, working was subdued to studying. For example, three girls and one boy mentioned they would have to work in order to get money to study, two girls pointed out that one would work after high school only if they "failed" or "didn't want to" become a professional. Interestingly, the first version of this question included the anecdotal detail that the subject had two little brothers, and this information led the first adolescent who was interviewed to say that they would have to work in order to support their siblings, impeding them to study after high school. From that point on, the detail was suppressed and was replaced by a general question about key factors in deciding the future that we will discuss later on.

In terms of the options to work, the most mentioned jobs were farming, produce sale, construction and child care. It's worth mentioning that two girls mentioned going to the city to work on child care while only one boy mentioned construction. Both boys and girls pointed out produce sales, working in a restaurant and working as a mechanic. With regards on where to get educated, nine adolescents mentioned the university or the preparatory academy to get into university, and only two of them, aged 16 and 17, mentioned a technical or pedagogical institute. Two other adolescents mentioned careers that could be learnt in an institute (teaching, cooking, sewing and cosmetology), but they didn't know or didn't remember where they could study it.

A fourth topic that was raised during the interview was that of attainable and prefered options after high school. They were asked "From these options [mentioned in the previous question], which do you consider possible for you, according to your strengths and the support you receive from your family?", and "Which options do you prefer?", respectively. For the first one, all teens mentioned studying, 7 specified that their options would include studying in a university and 4 mentioned a preparatory academy for university; while 5 of them mentioned working — in general and specifically as mechanics or chefs. Jorge,[5] a 16 year old from San Pedro de Chonta, explained the crossroads most of these adolescents find by the end of high school: "One option would be to talk to my parents and see if with that amount of money I can study the career I want, to see if I can enter an academy and apply [to university], if not, I work and then I can study."

For the second element— the preferred options—all adolescents indicated that they wanted to study something, and would either specify a career or just the preference to study at a university. The most popular career was policeman/woman, and engineer. During this open questions section, the options of setting up a business or studying in technical or pedagogical institute weren't mentioned neither as attainable nor as preferred options. The idea of progress through education seems to be very ingrained as the teenagers expressed their desire to study to "have something and be someone" (Sara, 15 years old), to "get ahead" (Ramón, 15 years old), and because it was "the best for them" (Elena, 13 years old). This is something they might hear in school: "In school we are already given the idea that it doesn't stop there, that you have to study in a institute or a university to be able to be someone, to be able to support a family. Because the most important thing is to have a profession, to have a place to live, to eat, to dress" (Jorge, 16 years old).

When they were asked to choose what is best between studying at a university, studying at a technical or pedagogical institute, working without having studied or setting up a business, the preference to study at the university remained constant: "Studying and others would say the same" (Paulo, 12 years old). However, as they get older, they might consider the option of studying in an institute, although it is usually considered a second (worse) option than a university: "Study in a university, but if I don't have the money then I would study in an

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[5] Names have been randomly assigned to protect identities.

institute (Jorge, 16 years old) "Depending on your ability, if you want to study you should better prepare for university or institute (...) If you have low resources in an institute" (Laura, 17 years old). The most usual second options were setting up a business, and studying in an institute. The least preferred was working without having studied, and it was associated with dropping out of school " If you have not finished school, you can work for others"(Laura, 17 years old). Finally, an issue that standed out was that for the majority of them, studying and working or setting up a business came together: "I'd choose university, studying and working at same time (...) studying you can support yourself better" (Ramón, 15 years old), "Among those options it's better to own a business, but study" (María, 15 years old).

The next section of the interview discussed the criteria they should take into account to decide their future — what to do after high school. The answers were obtained through two main channels: an open question about the things the fictional teenager in the story should take into account to decide what to do in the future, and a four-option question about factors leading to success and a question about someone they admired and how they got where they are. As mentioned, birth order was mentioned to be a factor influencing their educational aspirations as older siblings are expected to economically support the household while the youngest ones are still in school: "If he has two little brothers, I guess he's got to work. If he doesn't work there is no income since he can't study because he has two little brothers. If he doesn't have any siblings, then he could work for himself and start studying (Martín, 15 years old). Similarly, when asked about her attainable options, Sharon (14 years old) responded "study, thanks to the support of my family and my brother who works."Also related to family, one of the teenagers pointed out the perceived importance of having a present father: "One would be that if [Pepito, the fictional character] has a dad, he could go to university, so he has a better future. If not, he can work for a year or two to earn money so he can study" (Elder, 13 years old).

As it has been said, another key factor is money: "some people are going to study. Others, since they have no possibilities — money, that kind of thing— , work on the farm" (Fabiola, 15 years old). This factor was mentioned by seven teenagers on the open question, tied in frequency with motivation and hard work. This issue was brought up especially in the question about the person they admired: "My teachers. They worked hard and studied hard to achieve this as their parents wanted" (Macarena, 14 years old). However, some of them also underlined the importance of making a living even when motivation is lacking: "If you do not want to study, you can work in a job you like, to survive" (Laura, 17 years old).

When asked what the most important determinants of success were, out of four options — skills and values, money, connections and the place where you come from— most of the interviewees chose skills and values as a first option, and money as a second option. The third most popular option was the place where you come from, although this entailed different interpretations among the respondents: "[The most important is the] place where I come

from, because wherever I come from I [can] go to the city, no matter the difficulties" (Luis, 16 years old); "the place is important, to do something for my people" (Rita, 15 years old).

The following section of the interview aimed to assess the level of awareness of the teenagers the effects that social origin and gender could have on their future. First they were asked whether they thought social origin — or social background — had an effect on the attainment of their dreams and goals. Some of them were asked to elaborate on their answer, or asked to grade this effect from 1 (small effect) to 5 (big effect). Again, different teenagers had different interpretations: "Not much. It provides motivation. For example, I leave my village with a goal, I come to the city to be a professional and help my family" (Luis, 16 years old). "It's not very important, if one decides to achieve his goals, we do it at all costs. It is not worth saying that if no one has achieved it, I will not achieve it either" (Jorge, 16 years old). Even though 9 answered it had no effect, and 6 responded it had a lot of effect and 3 identified a little effect, some of them did perceive their social origin could be a limitation, on different levels of awareness: "A lot, I don't know why" (Elena, 13 years old); "It shouldn't matter, but your origin matters. It matters where you come from" (Rita, 15 years old). "Yes, because in these times there is still discrimination" (Joselyn, 18 years old).

On the question about the effect of gender on goal attainment, adolescents were even more inclined to reply that there was no effect: "No. Because they're both the same, they can be any profession and they succeed" (Daniela, 14 years old). 14 teenagers answered that the effect was non-existent, but 6 said it was "a little important" and 2 said it mattered a lot. Sometimes, there was incongruence inside the answer. Lucía (12 years old), replied "No, if we have a profession, everywhere we go we're going to be hired, whether we're men or women", however when she was asked to rate the effect from 1 to 5, she answered 3 out of 5. On the same note, Jorge (16 years old) said "no, because if you are dedicated to your studies, if you are a good professional, wherever you are you will be able to have a job or the admiration of people." Nonetheless, he gave a 2 out of 5 to the effect. Similarly, in some cases, they would acknowledge an effect but considered themselves not affected: "No, we both have the same rights and the same capacity. For others, yes, it can lower their self-esteem, but not for me" (Laura, 17 years old). In this set of answers, there were no significant differences in the answers of boys and girls.

The final section of the interview with the teenagers is about knowledge of the Juntos program, its characteristics and benefits, and whether they thought it had had an impact on their aspirations for the future. Only one out of the 24 teenagers wasn't sure about their family's adherence to the program. In terms of knowledge of the program's characteristics and benefits, 20 of them were aware that it was an economical aid for the most disadvantaged families "It helps us. With that we can buy the supplies and the books so we can learn more" (Macarena, 14 years old); "Help in the economy of food, studies, supplies, or general household expenses" (Lucía, 12 years old); "Even if it's a small amount of money it gives us,

it already benefits us for food, or buying a shoe if it breaks... it already benefits us in some way" (Jorge, 16 years old).

On the question of whether they thought it had an effect on their aspirations for the future, or whether they thought they would have the same plans if their families didn't receive the economical aid, the majority said that they didn't think it had an effect: "I'd still like to finish school and be a professional" (Elena, 13 years old). However, some of them did admit to certain changes that the program has had on their aspirations: "I'd still be in school, but my expectations would be a little less. It would be a little more difficult" (Ramón, 15 years old). The intention was to also ask this question to the parents, but unfortunately this was only possible with one of the parents in Fundo Aco and the parents in San Pedro de Chonta. The father we were able to interview in Fundo Aco highlighted the help the aid from *Juntos* had had to buy school supplies, however he didn't comment on its effects on the aspirations. In San Pedro de Chonta, all parents agreed that even without the cash transfer, they would find a way to help their children and keep them in school: "Even if I wasn't 'in *Juntos*,' I'd want my daughter to be something in life."

VII. Robustness Checks

In order to check the validity of the results shown above, I will proceed to conduct the ordered logit regressions for educational and professional aspirations using alternative methods for matching. Table 7A shows the estimates for the effect of the program on educational aspirations: the model in column 1 presents the results before matching, controlling for wealth index. Columns 2 to 5 display results from four different kinds of balancing mechanisms: nearest neighbour matching, Kernel matching, entropy balance and propensity score blocks, respectively. Finally, Column 6 presents the marginal effect of the program for each of the propensity score blocks.

Table 7A: Ordered logit model, odds ratio on Ordered Educational aspirations

	(1) WI	(2) NN	(3) Kernel	(4) E-balance	(5) PS Blocks	(6) Block FX
Currently Juntos beneficiary	1.695**	1.566**	1.804***	1.867***	1.762**	
	(0.28)	(0.27)	(0.21)	(0.22)	(0.32)	
Cognitive Test average	1.060***	1.055***	1.046***	1.046***	1.049***	1.049***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Gender (1=girl)	1.428**	1.678**	1.389**	1.229	1.318*	1.336*
	(0.17)	(0.29)	(0.16)	(0.14)	(0.18)	(0.18)
Native mother tongue	1.581*	2.510***	1.787***	1.796***	1.555*	1.606*
	(0.29)	(0.52)	(0.24)	(0.24)	(0.33)	(0.33)
Child with disability	1.683	0.224	0.304	0.066***	1.404	1.315
	(1.03)	(0.28)	(0.21)	(0.03)	(1.09)	(1.00)
Wealth Index	1.176***					
	(0.05)					
Rural area		0.641*	0.693*	1.000	1.000	1.000
		(0.14)	(0.10)	(.)	(.)	(.)
Per-capita monthly spending		1.001	1.002*	1.002	1.001	1.000
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Per-capita electricity spending		0.940*	0.984	1.021	1.061*	1.021
		(0.03)	(0.02)	(0.02)	(0.03)	(0.02)

	(1)	(2)	(3)	(4)	(5)	(6)
Use of solid fuel cooking	1.152	0.765	0.816	0.537*	0.819	
	(0.26)	(0.12)	(0.13)	(0.15)	(0.16)	
Presence of non-concrete roof	1.314	1.739	1.466	0.593	0.933	
	(0.71)	(0.65)	(0.50)	(0.16)	(0.19)	
HH max. years of schooling	1.115*	1.168***	1.157***	1.150***	1.125***	
	(0.05)	(0.03)	(0.03)	(0.04)	(0.04)	
HH total appliances	1.190*	1.009	1.007	1.153	1.014	
	(0.10)	(0.06)	(0.06)	(0.09)	(0.06)	
Number of block=1				1.000		
				(.)		
Number of block=2				1.772		
				(0.55)		
Number of block=3				2.162		
				(0.92)		
Number of block=4				3.954*		
				(2.13)		
Number of block=5				4.696*		
				(2.95)		
Number of block=6				6.801*		
				(5.60)		
Number of block=7				6.900*		
				(6.22)		
JNTS_block1						1.959
						(1.40)
JNTS_block2						1.707
						(0.93)
JNTS_block3						2.351
						(1.10)
JNTS_block4						1.545
						(0.62)
JNTS_block5						1.685
						(0.48)
JNTS_block6						1.987**
						(0.53)
JNTS_block7						2.099*
						(0.75)
cut1constant	0.358*	0.996	0.935	0.978	1.090	0.360
	(0.18)	(1.00)	(0.55)	(0.53)	(0.85)	(0.22)
cut2 constant	0.623	1.839	1.986	2.124	1.912	0.629
	(0.28)	(1.79)	(1.12)	(1.13)	(1.41)	(0.36)
cut3 constant	2.679*	6.901*	5.470**	4.509**	7.138**	2.328
	(1.04)	(6.61)	(3.06)	(2.39)	(5.04)	(1.24)
cut4 constant	3.286**	8.192*	6.351***	5.207**	9.072**	2.956*
	(1.27)	(7.85)	(3.56)	(2.76)	(6.39)	(1.56)
cut5 constant	22.306***	46.128***	35.663***	28.645***	59.955***	19.473***
	(8.42)	(44.26)	(20.06)	(15.28)	(42.12)	(10.20)
cut6 constant	3116.035***	16047.540***	11031.182***	8686.894***	11239.662***	548.754***
	(1376.49)	(16749.02)	(6924.65)	(5181.05)	(8639.64)	(2106.01)
bic	2579.662	1313.155	2705.700	2783.108	2030.372	2036.908

* p<0.05, ** p<0.01, *** p<0.001

The treatment effect is positive and statistically significant across all methodologies. Most of the matching methods render a stronger effect than the pre-matching regression (column 1), except for nearest neighbours method (column 2). The strongest effect for the program is

found when using the entropy balancing technique, when we find that beneficiaries are 1.87 times more likely to have a higher educational aspiration than non-beneficiaries. Demographic and socioeconomic covariates behave in the same tendency that was identified in the results section for the most part. Columns 5 and 6 present results from the technique based on propensity score blocks of balanced covariates. A higher block number signals a higher probability of being treated. Note that while Column 6 shows no evident tendency in the heterogeneous effects by block, as coefficients vary in intensity without a clear pattern among them, Blocks 6 and 7 display a more statistically significant effect. This potentially signals that the effect of the program on educational aspirations is higher among the most vulnerable, but this question is out of the scope of this research.

Similarly, Table 7B assesses the effect of *Juntos* on an ordinal categorization of professional aspirations. We find a positive and statistically significant treatment effect across all matching methods, and they are all stronger and more significant than the estimated treatment effect pre-matching. Similar to what was discussed before, a strongly correlated variable for professional aspirations is per-capita monthly spending in the household, which is statistically significant using nearest neighbour, Kernel and entropy balancing methods. In contrast, a household's maximum years of schooling is correlated to professional aspirations when using the propensity block method. We find no statistically significant effect of gender, mother tongue or disability on professional aspirations.

Table 7B: Ordered logit model - Odds ratio on categories of professional aspirations						
	(1) WI	(2) NN	(3) Kernel	(4) E-balance	(5) PS Blocks	(6) Block FX
Currently Juntos beneficiary	1.409*	1.759***	1.469***	1.547***	1.597**	
	(0.20)	(0.25)	(0.15)	(0.15)	(0.25)	
Cognitive Test average	1.049***	1.049***	1.049***	1.055***	1.043***	1.044***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Gender (1=Girl)	1.205	1.171	1.079	1.026	1.160	1.201
	(0.12)	(0.16)	(0.11)	(0.10)	(0.14)	(0.14)
Native mother tongue	1.078	1.164	1.135	1.192	1.101	1.142
	(0.17)	(0.19)	(0.13)	(0.13)	(0.20)	(0.20)
Disability (1=Yes)	1.558	0.643	0.901	0.655	1.950	2.028
	(0.87)	(0.62)	(0.56)	(0.41)	(1.33)	(1.38)
WI	1.145***					
	(0.04)					
RURAL		0.716*	0.808	1.000	1.000	1.000
		(0.12)	(0.10)	(.)	(.)	(.)
Per-capita monthly spending		1.004***	1.003***	1.003***	1.001	1.001
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Per-capita electricity spending		0.944*	0.966*	0.971	0.991	0.989
		(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Use of solid fuel for cooking		0.856	0.788	0.802	0.775	0.828
		(0.16)	(0.10)	(0.11)	(0.19)	(0.15)
Presence of non-concrete roof		1.025	1.084	1.085	0.737	0.746
		(0.46)	(0.34)	(0.31)	(0.17)	(0.13)
HH max. years of schooling		1.041	1.046	1.036	1.105***	1.102***
		(0.04)	(0.03)	(0.02)	(0.03)	(0.03)
Total appliances per household		0.903	0.958	0.963	0.962	0.953
		(0.06)	(0.05)	(0.05)	(0.06)	(0.05)

	(1)	(2)	(3)	(4)	(5)	(6)
Number of block=1					1.000	
					(.)	
Number of block=2					1.066	
					(0.29)	
Number of block=3					1.104	
					(0.40)	
Number of block=4					0.660	
					(0.29)	
Number of block=5					1.404	
					(0.74)	
Number of block=6					1.100	
					(0.76)	
Number of block=7					0.951	
					(0.71)	
JNTS_block1						1.259
						(0.67)
JNTS_block2						5.345**
						(3.43)
JNTS_block3						2.695*
						(1.13)
JNTS_block4						0.745
						(0.23)
JNTS_block5						1.731*
						(0.42)
JNTS_block6						1.496
						(0.35)
JNTS_block7						1.220
						(0.36)
cut1 constant	1.627	1.169	1.156	1.431	1.131	1.113
	(0.56)	(0.77)	(0.54)	(0.65)	(0.66)	(0.51)
cut2 constant	7.169***	6.051**	5.674***	7.239***	4.976**	4.889***
	(2.39)	(3.96)	(2.65)	(3.26)	(2.89)	(2.19)
cut3 constant	29.092***	27.411***	25.382***	31.153***	21.375***	21.058***
	(9.89)	(18.15)	(11.99)	(14.23)	(12.54)	(9.57)
Number of observations						
bic	3168.104	1810.991	3506.857	3593.961	2590.438	2584.426

* p<0.05, ** p<0.01, *** p<0.001

VIII. Discussion

Our data has shown evidence of an aspiration-based poverty trap: socioeconomic household characteristics strongly influence teenager aspirations when keeping ability — measured by cognitive tests average— constant. A general wealth index that takes into account housing quality, access to public services and consumer durables is highly correlated to both ordinal

categories of educational and professional aspirations. Particularly, household's maximum years of education has a strong effect for educational aspirations; and monthly spending, for professional aspirations.

Positive Effect of the Treatment

Juntos beneficiaries — who are in general poorer than non-beneficiaries— , had lower educational and professional aspirations when looking at raw data. However, quantitative data analysis has rendered a positive effect of *Juntos* program on both educational and professional aspirations. These results are consistent with our qualitative data analysis, in which we found that a vast majority of the *Juntos* adolescent beneficiaries had high aspirations for their future. The results are also consistent with another study on the effect of conditional cash transfer programs (Garcia et al., 2019), which also finds a positive effect of the Colombian CCT program Familias en Acción on parental and children educational aspirations for the future in the short term.

Constructing optimal aspirations

Literature on the subject of aspirations tells us that in order for an individual to maximize their aspirations, they need to know all the options on the table, and they need to correctly assess their abilities and constraints. There was a tendency during the qualitative data analysis in which most teenagers were much more aware of universities than alternate institutions like pedagogical and technical institutes. Even though our quantitative data doesn't include information on knowledge of salient options after high school, we definitely find that teenagers substantially prefer a university track over an institute track. Furthermore, *Juntos* had a positive effect on the first, and negative effect on the second. This is consistent with findings in the interviews, where institutes seemed to have a lower perceived prestige, as some of the teenagers mentioned that one could aspire to go to an institute if they didn't have enough money to pay for a university.

Perception of Constraints and Heterogeneous Effects

It's much more difficult to check whether individuals correctly assess their abilities and constraints to construct optimal aspirations. On one hand, this seems to partially be the case as it was shown that cognitive tests results were correlated to aspirations, signaling that individuals with higher ability had higher educational and professional aspirations. But even students with the same score in the test would aim higher if their socioeconomic condition was higher. And it's difficult to know to what extent this is a reflection of objective economical constraints, and to what extent its an aspiration-based poverty trap. Even though the answer to this question is out of the scope of this research, I did conduct a series of checks for heterogeneity to see if any constraints related to gender, ethnicity, disability and birth order translated into differences of aspirations.

Even though the sample of disabled teenagers was too small to give any significant results, we did find heterogeneous effects in terms of gender, ethnicity and birth order, a variable that

was added after realizing its importance during the fieldwork and looking at the recent literature. Data shows that the *Juntos* program has a stronger effect on aspirations for boys than for girls, and for Spanish native speakers rather than indigenous language native speakers; even though girls an

d indigenous language speakers have higher educational and professional aspirations in the first place. In the case of birth order, we find that albeit oldest siblings in the household have lower educational and professional aspirations, the *Juntos* program has a stronger and most significant positive effect among oldest siblings. All this evidence may suggest that *Juntos* has a balancing effect in that it increases educational and professional aspirations in population that tends to have lower aspirations: boys, spanish speakers and oldest siblings.

The fact that teenagers who are the oldest sibling in the household had lower aspirations than younger siblings is consistent with literature that suggests that individual aspirations are not isolated from family's aspirations, and qualitative data findings that show that older siblings were expected to find a job quickly after high school to support their younger siblings. The fact that children from an indigenous background showed slightly higher aspirations than native spanish speakers in the quantitative data analysis is consistent with literature that posits indigenous children have aspirations as high as their non-indigenous pairs, but that the distance between the socio-economic status they aspire to reach and their current one is greater.

Qualitative data analysis in this research also focused on the perceived difficulties teenagers found in the attainment of their goals for the future, in order to identify whether and how they thought dimensions like gender and ethnic origin played a role. Talking about whether they thought gender and ethnic origin could affect outcomes in the future proved very challenging. It was clear that the teenagers weren't used to talk about these topics. In most cases, they were more comfortable speaking in general rather than from their own experiences, and were more open to respond when the question included options such as "influences at lot", "a little" and "not at all". In general, most didn't perceive that gender or social origin could affect outcomes, or didn't want to speak about it if they did.

Dichotomy of Studying and Working

Finally, we find evidence that schooling remains a powerful narrative shaping aspirations. The general salient options mentioned across the group were to work and/or to study, although usually, working was subdued to studying. For example, three girls and one boy mentioned they would have to work in order to get money to study, two girls pointed out that one would work after high school only if they "failed" or "didn't want to" become a professional. Similarly, quantitative data analysis showed that *Juntos* had increased the

incidence of high and very high professional aspirations among beneficiaries, which were composed of jobs that required higher formal education.

IX. Conclusion: Policy Recommendations Based on Findings

This empirical research uses propensity score matching to find quantitative evidence of the effect of the conditional cash transfer program *Juntos* on both educational and professional aspirations. Beneficiary teenagers are between 1.5 and 1.8 times more likely to aspire to a higher category of education than comparable non-beneficiary teenagers, once socioeconomic and individual observable characteristics are accounted for. Beneficiaries of the program are more likely to prefer university studies over technical or pedagogical institute studies; and institute studies over high school (among those who do not wish to follow university studies).

Heterogeneous effects with respect to gender, maternal language and birth order have been found. Even though girls aspire to higher levels of educations, beneficiary boys have a higher and more significant effect on their educational aspirations. Among boys, beneficiaries are 2 times as likely than non-beneficiaries to want to aspire to go to university, and half as likely to aspire to follow a technical or pedagogical institute track. Among girls, beneficiaries are 50% more likely to aspire to go to university than non-beneficiaries, and 9% more likely to aspire to go to an institute. However, results for girls are not statistically significant at the 95% level. It's not clear whether this is simply because the treatment effect is smaller for girls, or because girls have generally very high aspirations (higher than boys), and there's not enough variance to have significant treatment effects.

In terms of ethnic group, the treatment effect was higher and more significant for those whose maternal language is Spanish, although indigenous language native speakers have slightly higher educational aspirations to begin with. Among Spanish speakers, beneficiaries were 1.6 times as likely as non-beneficiaries to aspire to follow university studies, whereas there was no statistically significant effect for indigenous language native speakers. There were no significant heterogeneous effects by ethnic group in the aspiration to go to an institute.

Quantitative data analysis has also shown evidence that oldest siblings in the household tend to have lower educational aspirations than younger siblings, but they are the ones who receive the greatest positive effect from Juntos. Among older siblings, beneficiaries are twice as likely to have a higher educational aspirations than non beneficiaries, while there are no statistically significant effects for younger siblings in the household.

Beneficiaries are also between 1.4 and 1.7 times more likely to aspire to higher paying jobs that require more years of studying. While girls, indigenous native tongue teenagers and younger tend to have higher professional aspirations *ex ante*; they receive weaker — albeit still positive — treatment effects. Among boys, beneficiaries are 2 times as likely as non-beneficiaries to aspire to a high or very high ranked profession. By contrast, beneficiary girls are 1.80 times as like to aspire to these kinds of professions as non-beneficiary girls.

Among spanish speakers, the increased odds for beneficiaries go up to 2.1; and among oldest siblings in the household, it goes up to 2.4 for beneficiaries over non-beneficiaries.

In the qualitative data analysis, we also find that most beneficiary teenagers interviewed have high educational and professional aspirations: most of them wanted to go to university. But the interviews helped as see more of the nuance. For instance, some of interviewees wanted to go to university even though the job they wanted to do did not require university studies. And some of them did not know what other parts apart from university could be. The majority of the teenagers did not mention pedagogical or technical institutes as salient option for them after high school. And if they did, it was described as a second option.

Furthermore, we find that the educational path of children in areas where *Juntos* works is not linear. At least in the rural areas visited, a teenager's path after high school commonly envisioned some time between high school and higher studies to work, and also to prepare for the university's admission exam. And in the cases where they had younger siblings, this time also meant they had to provide for them, as we saw that families take on an important role on shaping aspirations.

Finally, qualitative data analysis also showed that even though there were no perceived effects of the *Juntos* program on aspirations, both teenagers and their parent considered that the program had helped them to buy school supplies, and some that the program helped them overcome some difficulties associated with continuing education.

While we encounter great effects of *Juntos* on the aspirations of the least advantaged, these results shed light on the fact that there are equally disadvantaged teenagers in untreated communities that could benefit from this aspiration effect. Graph 03 shows the correlation between household wealth index and adherence to Juntos. I recommend that the program opens applications to neighbour districts so that more families can benefit.

Graph 03: Treatment by wealth index
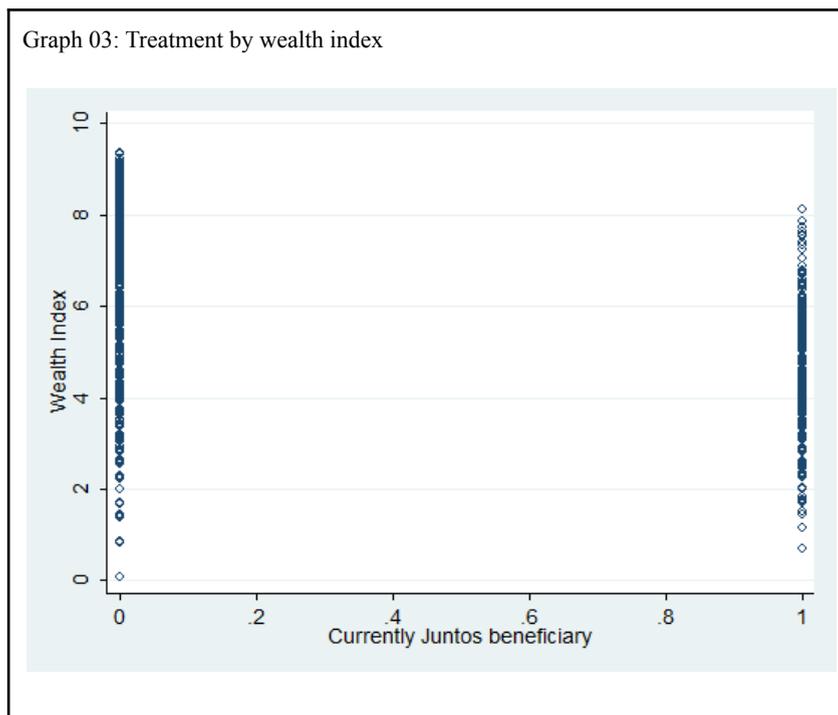
Although it's good to raise aspirations of the least advantaged when they are not aligned to their fullest potential, policy should focus on teaching students to set attainable aspirations, as raising all aspirations to the maximum may produce worse outcomes among the weakest students (Goux et al., 2014). Particularly, education in technical and pedagogical institutes should be promoted as a more accessible and also very profitable career option, to avoid the perceived dichotomy of either going to university or working directly after high school to save up for university that some of the teenagers described .

This is important as the narrative of schooling out of poverty doesn't always come true in real life. Crivello (2015) offers the case of Diana as an example. A Peruvian girl that at age twelve said studying was important 'so you can be somebody in life'. But by age fourteen, she was no longer in school; she had met a young man working in the community and became pregnant. Future research should focus on the mechanisms through which aspirations shape and transform, so that policy can be developed in order to guide teenagers into their desired futures.

Finally, as data showed a difference in Cognitive Tests average relative to socioeconomic groups, I'd like to highlight the importance of increasing quality of education as access to education increases with programs like *Juntos*, in order to achieve greater results in learning. As indicated by Escobal and Benites (2012), the cash transfer alone will not lead to greater child development if it is not complemented by an improvement in the supply and quality of the health and education services that children receive.

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<u>Annex 01: Juntos program's Geographical and Individual Targeting</u>

Geographical Targeting takes into account five variables: incidence of monetary poverty (IMP), severity of monetary poverty (SMP), chronic child malnutrition ratio of children between six and nine years old (CCM), average rate of unsatisfied basic needs (UBN) and percentage of population settlements (*centros poblados*) affected by political violence (PSPV).

Geographical Index=0.10*IMP + 0.10*SMP + 0.30*CCM + 0.167*UBN + 0.333*PSPV

Once the Ministry of Economics and Finance determines the priority districts, individual targeting takes place. First, the INEI (National Institute for Statistics and Information), conducts a filter to identify households in which there is a pregnant woman, or a widowed or guardian parent with children up to the age of fourteen. Then, INEI applies to registered households an algorithm and a threshold by which it establishes which households qualify as extremely poor, poor and non-poor.

Although the exact algorithm isn't publicly available — to avoid people manipulating their information to be eligible for the program — , the variables used to generate it are public and can be found in Ministerial Resolution N° 107-2015-MIDIS, and it is further discussed in Annex 03 .

<u>Annex 02: Interview guide</u>

INTERVIEW GUIDE - TEENAGE BENEFICIARIES OF THE JUNTOS ("TOGETHER") PROGRAM - FEBRUARY 2020

Consent

This academic research is independent and it's not produced by the Juntos Program. Its objective is to learn about the beneficiaries of the Juntos Program and the effects that the program has on their lives. The questions in this interview are optional; the interviewee may stop the interview at any time during the interview. The data collected will be used collectively and anonymously without exposing the names of the interviewees, for academic purposes only. You have the right to:

- Stop the interview or delete some questions without offering explanations

- Ask questions at any time during the interview

- That your personal data is protected and not be shared publicly under any circumstances

- At any time, you may access the data collected by this interview or delete your data if possible by writing to: marisol.dextrepolo@sciencespo.fr, cc: cnil@sciencespo.fr

Interview N° _____ Date _____ Time_____ Place_____

START OF INTERVIEW

1. Introduction of the adolescent beneficiary of Juntos

a. What's your name?   How old are you?

b. What grade are you in?

2.   Knowledge of career options.

a.   Imagine that Pepito (or Pepita) lives in [name of town where teenager lives]. He's 17 years old [and has two little siblings]. He has just finished high school and doesn't know what to do. What are their options? Tell me all the options you can think of.

b.   To help them decide, what would you ask Pepito(a)? What things should they take into account to decide?

3.   Possibilities and Preferences

a.   Now back to you. What are your strengths, or positive qualities [interviewer gives very different examples]?

b.   Out of the options you gave Pepito, which ones do you think are possible (not necessarily preferable) for you, according to your strengths and the support your family can give you?

c. Which do you prefer? Why?

d.   For you, what is better, to work without having studied, to study in a university, to study in technical institute or to set up a business, or a combination of any of them? What do you think the boys and girls in your community think?

e. Which person in your entourage (or outside of it) do you admire? How did they get that which you admire of them?

f. What does it mean for you to live a successful life?

g. For you, what is more important to be successful: one's personal strengths and skills, the place one lives in, one's connections, or money?

h. Do you think your social background has an effect on whether you can achieve your dreams and goals? In which way? How strong is this effect from 1 to 5?

i. Do you think your gender (being a boy or a girl) affects your future outcomes? How strong is this effect from 1 to 5?

4.   Juntos Program perception

a. Did you know that your parents are beneficiaries of the Juntos program? What are the advantages of that?

b.   Imagine if your parents were not beneficiaries of Juntos, do you think you would have finished school? What would your expectations be?

END OF TEENAGER INTERVIEW

5.   Questions to mother or father:

a. Do you think that being a beneficiary of the Juntos program affects, or changes in any way the expectations you have for your child in the future? In what way?

b. Do you think that being a beneficiary of the Juntos program affects in any way the possibilities of your child to meet his/her objectives or expectations in the future? How?

Annex 03: Variables used in the *Juntos* selection process and poverty index algorithm; and their equivalents in the Young Lives dataset.

Some variables in the Young Lives survey are not exact from the variables used in the criteria used to select beneficiaries for the Program. For instance, household monthly spending in the survey is used as a proxy for income, which is not asked in the survey. Similarly, the language chosen to respond the survey by the head of the household is used as a proxy for the language spoken by them, which is one of the criteria used by the government to select beneficiaries.

Criteria	Cut	Application (Urban/Rural)	Equivalent variable in YL database	
Car ownership	Positive result leads to exclusion from the program	U/R	CAR	Possession of car
Private health insurance	Positive result leads to exclusion from the program	U/R	PRVTHLTH	Child has private insurance
Total household income (public record) per person	S/ 631 for Metropolitan Lima ; S/ 543 for the rest of the urban area; and S/. 358 for the rural area	U/R	TOTALSPENDPP	HH Total monthly spending per person
Per-capita electricity consumption		U/R	ELECPERP	Spending in electricity / hh size

Estimation of Household Targeting Index (IFH 2015)

Household overcrowding ratio	U/R	OVRCRWD	House hold size / Number of rooms
Presence of earthen floor	U/R	EARTHFL	Earth/sand floor
Use of solid fuel for cooking	U/R	SFCOOK	Use of solid fuel for cooking
Presence of ceiling other than concrete	U/R	NCROOF	Presence of ceiling other than concrete
Household with no connected utilities	U	NOUTIL	Household with no connected utilities
Household with all three utilities connected	U	ALLUTIL	Household with all three utilities connected
Head of household speaks indigenous language	U	HLN	Head of household responds questionnaire in native language
Maximum years of education in the household	U/R	MAXSCHOOL	Maximum years of education in the household
Head of household's number of years of education	U	HHHSCH	Head of household's number of years of education
Number of goods in the HH	U/R	TOTITVAL	Monetary value of top five HH items
Number of durable goods in the HH	U/R	cd	Consumer durables index
Number of HH appliances	U/R	totalappl	total appliances per household
Number of HH telecom assets	U	totaltlc	Total telecom assets per household
Number of goodsper per capita	U/R	ITPERP	Number of telecom items and appliances per person
Possession of electric blender	U/R	BLENDER	Posession of blender
Possession of electric iron	U	IRON	Posession of iron
Possession of refrigerator	R	FRIDGE	HH Items (11)

Possesion of gas cooker	R	COOKER	HH Items (12)
Use of gas for cooking	R	GASCOOK	Use of gas or electricity for cooking
Home connected to public sewerage system inside	R	SANITATION	Household connected to public sewerage system
Head of HH with incomplete secondary education	R	HHHINCSC	Head of HH with incomplete secondary education

Annex 04: Matching methods

The following table reflects the covariate means before and after three different methods for matching: Nearest Neighbour, Kernel matching and Entropy balancing.

	Before matching		After matching (Nearest neighbour)		After matching (Kernel)		After balancing (Entropy balancing)	
Covariates	Treat	Control	Treat	Control	Treat	Control	Treat	Control
Lives in rural area	.6629	.12519	.65826	.58486	.65826	.58339	.6629	.6627
Household total monthly spending (S/.) per person	110.6	270.62*	111.49	102.91*	111.49	106.86	110.6	110.7
Electricity spending (S/.) per person	2.9512	11.05*	2.9698	2.8958*	2.9698	2.9036*	2.951	2.956
Use of solid fuel for cooking	.70362	.12894	.69954	.70872	.69954	.68331	.7036	.7034
Presence of non-concrete ceiling	.9638	.56222	.9633	.97248	.9633	.97892	.9638	.9635
Head of household has private health insurance	0	0	0	0	0	0	.00017	.00017
Maximum years of schooling in household	10.133	12.148*	10.177	9.9037*	10.177	9.896*	10.13	10.13
Head of household speaks native language	.20814	.01724	.19725	.13991	.19725	.11892	.2081	.208
Household total number of appliances	1.3484	3.9865*	1.3647	1.3532*	1.3647	1.2838	1.348	1.349
Number of observations used			826		1687		1687	

*if variance ratio outside [0.83; 1.21]

The following graphs represent treated and untreated groups (on support and in support) using Nearest Neighbour matching and Kernel matching.

Nearest neighbour matching   Kernel matching
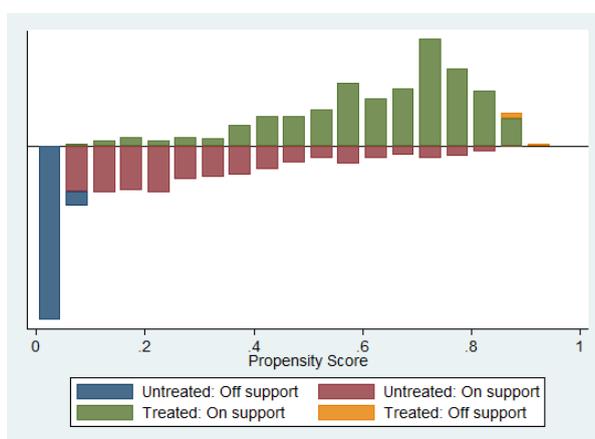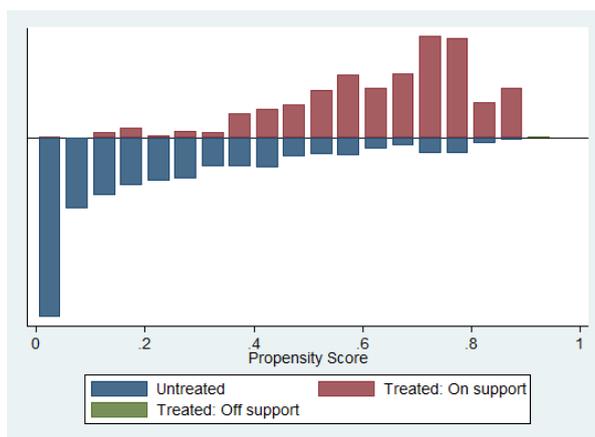
	Before matching		After matching		
	Treatment	Control	Treatment	Control	**
Lives in community where Juntos is implemented	.940	.290	.940	.542	
Block 1			.444	.198	
Block 2			.643	.577	
Block 3			.7	.953	**
Block 4			.987	1	
Block 5			1	1	
Block 6			1	1	
Household food spending per person	71.773	145.723	71.773	107.490	
Block 1			128.511	124.737	
Block 2			113.137	109.910	
Block 3			100.748	107.188	
Block 4			79.686	91.872	

Block 5			67.376	63.853	
Block 6			50.085	47.582	
Household non food spending per person	39.047	129.984	39.047	64.000	
Block 1			94.541	73.656	
Block 2			61.470	70.966	
Block 3			70.021	69.471	
Block 4			38.400	43.034	
Block 5			32.530	38.164	
Block 6			28.603	23.940	
Electricity spending per person	2.964	11.263	2.964	5.557	
Block 1			9.707	7.203	
Block 2			4.918	5.507	
Block 3			4.191	4.870	
Block 4			3.005	3.075	
Block 5			2.424	2.352	
Block 6			2.458	2.254	
Overcrowding ratio	1.931	1.903	1.931	2.123	
Block 1			2.768	2.077	
Block 2			2.792	2.089	*
Block 3			2.060	2.264	
Block 4			2.217	2.472	
Block 5			1.867	2.09	
Block 6			1.593	1.722	
Presence of earth floor	.8	.221	.8	.430	
Block 1			.333	.267	
Block 2			.428	.340	
Block 3			.6	.388	**
Block 4			.526	.678	
Block 5			.905	.910	
Block 6			1	1	
Use of solid fuel for cooking	.702	.128	.702	.252	
Block 1			.222	.043	**

Block 2			.357	.278	
Block 3			.42	.176	**
Block 4			.788	.850	
Block 5			1	1	
Block 6			1	1	
Presence of non-concrete ceiling	.963	.558	.963	.839	
Block 1			.777	.798	
Block 2			.571	.711	
Block 3			.88	.870	
Block 4			.987	.966	
Block 5			.994	1	
Block 6			1	1	
Household has no utilities connected	.025	.013	.025	.026	
Block 1			.111	.012	*
Block 2			0	.0309	
Block 3			.02	.035	
Block 4			.051	.085	
Block 5			.022	.030	
Block 6			.009	0	
Head of household has private health insurance	0	.013	0	0	
Block 1			0	0	
Block 2			0	0	
Block 3			0	0	
Block 4			0	0	
Block 5			0	0	
Block 6			0	0	
Head of household speaks native language	.209	.017	.209	.183	
Block 1			0	0	
Block 2			0	0	
Block 3			.06	.023	
Block 4			.025	.017	
Block 5			.106	.134	

Block 6			.624	.344	
Maximum years of schooling in household	10.139	12.178	10.139	11.197	
Block 1			11.111	11.615	
Block 2			10.643	11.268	
Block 3			11.2	11.518	
Block 4			10.320	10.644	
Block 5			10.078	10.567	
Block 6			9.477	8.281	
Household total number of appliances	1.352	4.015	1.352	2.687	
Block 1			3.222	3.432	
Block 2			2.571	2.505	
Block 3			1.8	2.823	**
Block 4			1.987	1.712	
Block 5			1.217	1.134	
Block 6			.605	.437	

*=difference is significant at the 95% level; **=difference is significant at the 99% level

Annex 05: Wealth Index

The wealth index has three components: housing quality, consumer durables, and services. In the calculation of these variables if any of the component variables are missing, then the resulting variable is set to 99 and treated as missing.

hq   Housing Quality Index. Value between 0 and 1. 99=Missing.

This value is based on the number of rooms per person in the household and the main materials used for the walls, roof and floor. The number of rooms (NUMROOM) is divided by the size of the household (HHSIZE). This result is divided by 1.5 to allow for rooms such as kitchens and bathrooms not used for general living. If the result of this calculation is greater than 1, it is set to 1. If the walls are made of brick or concrete then 1 is added to the index. If the roof is made of iron, concrete, tiles or slate then 1 is added to the index. If the floor is made of cement or is tiled or laminated then 1 is added to the index. This gives a value between 0 and 4 which is then divided by 4 to give a housing quality index of between 0 and 1. Variables used in this calculation are: NUMROOM, HHSIZE, WALL, FLOOR, ROOF.

cd   Consumer Durable Index. Value between 0 and 1. 99=Missing.

This value is based on the number of assets owned by the household. A typical set of assets is considered – productive assets (e.g. sewing machines) are not included in this calculation. For

Ethiopia 11 assets are considered: radio, refrigerator, bicycle, television, motorbike/scooter, car, mobile phone, landline telephone, bedstead, table & chair (together as one asset), and sofa. For each asset owned by the household a 1 is added to the index; the result is then divided by 11 to give a value between 0 and 1. Variables used in this calculation are: RADIO, FRIDGE, BIKE, TV, MOTOR, CAR MOBPHONE, PHONE, BEDSTED, TABCHAIR, SOFA.

sv   Services Index. Value between 0 and 1. 99=Missing. This value is based on whether or not the dwelling has electricity, the source of drinking water, type of toilet facility and the main type of fuel used for cooking. If the dwelling has electricity then 1 is added to the index. If drinking water is piped into the dwelling or the yard then 1 is added. If the household has their own toilet facility (not shared with other households) then 1 is added and if paraffin, kerosene, gas or electricity is used for cooking another 1 is added. The result is then divided by 4 to give a value between 0 and 1. Variables used in this calculation are: ELEC, DRWATER, TOILET, COOKING.

wi Wealth Index. Value between 0 and 1. 99=Missing.

This value is calculated as the average of the Housing Quality Index, the Consumer Durables Index and the Services Index. The calculation is WI=(HQ+CD+SV)/3.

Note: In order to be more easily interpreted, variables were modified as follows on the regressions conducted in this paper :

New variable WI=wi*10

New Variable HQ=hq*10

New variable CD=cd*10

New Variable SV=sv*4

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