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Social Protection and Health Division

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Pensions for the Poor: The Effects of Non-Contributory Pensions in El Salvador[1]

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Abstract. A majority of Salvadorans reach retirement age without a formal pension, resulting in increased financial vulnerability and poverty in old age. In this paper we study the effects of the Universal Basic Pension (UBP), a non-contributory pension of $50 per month for individuals aged 70 years and over in the poorest municipalities of the country. Using a purpose-specific sample of 2,255 households with adults between 66 and 74 years of age in the 32 poorest municipalities in the country, we apply an instrumental variables identification strategy to estimate treatment on the treated effects of the pension. Our results suggest that receipt of a pension reduces work activities amongst pensioners by 50%, and household income from remittances drops by $4.9 per month. Despite these reductions in income, non-labor income in beneficiary households increases on average by $40.86, reducing the probability that a beneficiary household lives below the extreme poverty line by 26 percentage points. Receipt of the pension increases per-capita food consumption, thus reducing the perception of food insecurity amongst the elderly by 8 percentage points. Furthermore, school attendance of 11 to 18 year olds who live with a pensioner increases by 6 percentage points, suggesting that the pension may also contribute to human capital investments for the next generation.

JEL Codes: O22, C23, I38, J14
Keywords: Pensions, El Salvador, universal basic pension, impact evaluation, older adults

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I. Introduction

The search for effective mechanisms to provide financial security to the elderly population has become a social priority for governments. In this context, pension programs have become one of the most important components of the social security system, as part of an overall strategy for poverty reduction and social risk management with a focus on elderly rights (Cecchini and Martínez, 2011). Pension programs that cover financial risks associated to aging in high-income countries are typically contributory schemes, financed by taxes on labor income or individual contributions. In countries with large informal labor markets, however, these tax mechanisms are more difficult to implement and scale up (Dethier, 2007; Galiani and Weinschelbaum, 2012 and Levy 2007). As a result, a high percentage of the population in developing countries is not covered by contributory pension schemes. Indeed, the coverage of contributory pensions in Latin America ranges between 10 and 60% (Dethier et al., 2010). Thus, many of these countries have opted for non-contributory pensions as a mechanism to strengthen social safety nets for seniors (Holzmann et al. , 2010 and McKinnon and Sigg, 2006). These non-contributory schemes generally provide uniform benefits, are conditioned on age and may be universal of targeted on poverty criteria (Bertranou, F. 2005). The primary objective of most non-contributory pensions programs is to provide a basic income to sustain an adequate level of consumption, and thus alleviate poverty and vulnerability associated with aging that cannot be covered by the contributory system.

The Our Elder´s Rights Program (OER) in El Salvador was established as part of the Government's 2009-2014 Five Year Development Plan. The program serves the social protection of senior citizens in a specialized manner by offering a non-contributory basic pension, called the Universal Basic Pension (UBP), of $ 50 per month to persons aged 70 years or older. The program initiated in 2010 in the 32 poorest municipalities in the country and scaled up to additional poor municipalities over time, reaching an estimated 29,000 senior citizens in 75 municipalities by 2013. We study the effects of the UPB using a purpose-specific survey of over 2,000 households with members collected in the second half of 2014 in the 32 municipalities where the program was first introduced. The survey covers the universe of households with an oldest member between 66 and 74 years old, providing a relatively narrow age range where program participation is determined primarily by the exogenous program age-elegibility rule. We use an instrumental variables approach to estimate treatment-on-the-treated effects of the program on eligible households that participate in the program. We analyze a number of welfare indicators including household income, monetary poverty, consumption per capita, participation in the labor market, health, household demographic effects and investments in the human capital of children and youth.

This paper is organized into six sections. Section 2 presents a literature review of the main findings and impacts of non-contributory pension programs, followed by the description of the OER program in El Salvador. Section 3 explains the design of the impact evaluation and Section 4 describes the sample for analysis. Section 5 presents the impacts of the Program according to

the different types of performance indicators. Finally, Section 6 concludes with a summary of the main findings and a discussion of the implications in terms of public policy.

II. Background

The risk of falling into poverty increases substantially with age, not only due to the reduction in the ability to perform a job and ensure an income, but also to the increasing levels of expenses incurred as a result of a deteriorating health and increased disabilities. Pension policies, therefore, not only serve the purpose of helping alleviate poverty, but also provide security for the elderly who are in danger of falling into poverty (Holzman et. al., 2009). Aging of the population places increasing emphasis on the need to increase the coverage of pensions in the region. Thus the search for effective mechanisms to provide financial security to the elderly has become a social priority for governments; under this context, pension programs have become one of the most important components of the social security system.

Pension or benefits programs that cover most of the risks associated to aging among high-income countries are commonly contributory schemes financed by taxes on labor income. In countries with large informal labor markets, however, these tax mechanisms are more difficult to implement and scale up (Dethier, 2007; Galiani and Weinschelbaum, 2012 and Levy 2007). As a result, a high percentage of the population in developing countries is not covered by contributory pension schemes. Indeed, the coverage of contributory pensions in Latin America ranges approximately between 10 and 60% (Dethier et al., 2010); only Brazil, Chile, Uruguay and Argentina have rates of coverage higher than 50% (Bosch, Melguizo and Pages, 2013). and therefore, many of these countries have opted, for non-contributory pensions (Holzmann et al. , 2010 and McKinnon and Sigg, 2006) to complement their contributory systems. In the short term they may be the only way to increase coverage effectively in low coverage countries (Bosch, Melguizo and Pages, 2013). These pensions programs are relatively uniform benefits conditioned on age and are normally targeted on poverty criteria. Their main objective is to provide a basic income aimed at achieving an adequate level of consumption, and thus alleviate poverty and vulnerability associated with aging that cannot be covered by the contributory system. In Bolivia, Ecuador, Chile and Costa Rica beneficiaries of non-contributory pensions represent 58%, 17%, 14% and 21% of the elderly population, respectively (Lucchetti et. al., 2008).

There are two different schemes to provide a basic income for the elderly in developing countries. The first consists on universal access to the existing retirement systems, regardless of employment status, and the supply of a minimum income for all persons 65 years and over. The option of a unified, universal system, however, may yield a high fiscal cost and perverse incentives against the formal labor sector. Several administrations have, therefore, chosen direct transfers financed by taxpayers in order to provide a replacement income for all elderly people under the poverty line. These targeted transfers are divided into two types. The first provides a minimum, unconditional equal pension to all senior citizens, regardless of income, assets, or employment history. Only four developing countries have such schemes: Bolivia, Botswana,

Mauritius and Namibia. Except for Mauritius, these pension schemes are not high enough to exceed the poverty line. The second type is also a universal pension, but subject to income tests. Six Latin American countries have implemented these non-contributory schemes: Argentina, Brazil, Chile, Costa Rica, Uruguay and most recently, El Salvador. The programs in these countries have a social assistance nature focusing on the poorest and most vulnerable older adults that are unable to participate in the contributory pension system. Brazil has the largest program by reaching more than 8 million beneficiaries (Dethier, 2007). More recently Bosch, Melguizo and Pages, 2013 propose a model in which noncontributory pensions are universal and articulated with the contributory system in a way that noncontributory benefits decline for people who receive benefits from the contributory system while at the same time ensuring that the system does not represent a tax on formality or an disincentive to save in the contributory system (see Bosch, Melguizo and Pages, 2013 for more details).

Studies on the impact of pensions in South Africa indicate a significant reduction in poverty levels among the elderly. Barrientos (2003) estimated that poverty levels would be 1.9% higher without these pensions. Case and Deaton (1998) concluded that the incidence of poverty among the elderly would have been 45% - and not 40% - in the absence of pensions, and Samson (2006) found that the poverty gap among households with an elderly family member is reduced by 54%, and 96% for households where the elderly adult lives alone.

Using regression discontinuity, the impact evaluation of the Renta Dignidad Program in Bolivia (Escobar et. al., 2013) found that beneficiary households increased their monthly per capita income in an amount equivalent to 16.4% and increased the monthly per capita consumption in 15.4%. The program also reduced the incidence of moderate poverty in beneficiary households by 13.5 percentage points, and the incidence of subjective poverty - defined as the self-perception of household members on the income they think to need for living for a month- by 16.1 percentage points. A panel is used in the case of Mexico, and the regression discontinuity methodology was applied to estimate the effects of the Elderly Program, which benefits adults over 70 years in rural areas of the country. The study found that beneficiary households show 23% higher average consumption levels, ruling out anticipatory effects that may have been associated with the program. The authors conclude that the non-contributory pensions improve the welfare of the elderly without affecting income or savings of future program participants (Galiani et. al., 2014).

On the other hand, Delgado and Cardoso (2000) compared the effect of poverty among beneficiaries and non-beneficiaries households of pensions in rural Brazil. The study concluded that the incidence of poverty is substantially higher among households without a beneficiary: in the northeast area of the country, 51.5% of households without a beneficiary received less than half the minimum wage per capita, but the percentage is reduced to 38.1 for households that are beneficiaries. In southern Brazil, these figures are 18% and 14.3%, respectively. Additionally, Gasparini et. al. (2007), concluded that in the absence of pensions, the poverty rate among the elderly in Brazil would be 47.9%, compared with the 3.7% rate for beneficiaries. Rivera-Marques et. al. (2003) studied the non-contributory pension for the elderly in Mexico City and

showed that the program reduces poverty and inequality: though the impact in terms of poverty reduction is weaker, as the rules on eligibility soften (no income tests and the extension to non-poor areas). Another study in Argentina found that the poverty incidence among households with a non-contributory pension beneficiary over 65 years would be 5% higher if the pension was not taken into account, and that extreme poverty would be 16% higher in the absence of pensions (Bertranou and Grushka 2002). In a broader exercise, Dethier et. al. (2010) examined the impact of pensions for the elderly on poverty in 18 Latin American countries. Using the data from household surveys, they determined that the minimum hypothetical universal pension reduces poverty levels in almost half among the elderly in countries where poverty rates are higher.

An argument against the implementation of the transfers is the discouragement of other forms of informal support to vulnerable groups. So far, however, empirical evidence is scarce and inconclusive. Jensen (1996) investigated the relationship between the remittances of South African migrants and the presence of the pension in households where the migrant left home to find work. This study found that for every rand of income from a pension, migrant remittances were reduced between 40 and 50 cents. Juarez, 2009 finds that in Mexico D.F. private transfers decline by 87 cents for each peso received from the Government by the elderly. Posel´s subsequent research (2010) studied the nature of this relationship, noting that the amount of the remittances was influenced more by the nature of the household that sent the remittances, than by the pension received by beneficiaries. If the household that issues the remittances has school aged children, it is less likely that they send money.

Labor supply evidence among beneficiaries and their dependents is mixed. In Brazil, while there is no requirement to prove being jobless to receive the pension, there is some evidence that the pension promotes the continued employment of elderly persons (Delgado and Cardoso, 2000). However, Carvalho Filho (2008) concluded that access to the pension increases the probability of retirement of older workers in rural Brazil by about 38 percentage points and that it reduces in 22.5 the total number of hours worked in a week. In Bolivia, the impact evaluation of the Renta Dignidad Program concluded that the program caused a decrease in the child labor rate by 8.4 percentage points, while increasing school enrollment among children from beneficiary households by 8 percentage points (Escobar et. al., 2013). In the case of the Older Adults Program in Mexico, the formal labor force among beneficiaries was reduced by 20%, since they opted to work in their family business, as well as the weekly working hours by 2.6. Also there may be indirect effects in dependents of persons receiving an old age noncontributory pension, Bosch, Melguizo and Pages, 2013 summarize some of the evidence on this though the evidence does not show any large effects.

In terms of jobs of other adult household members, results are not consistent. While Bertrand et. al. (2003) concluded that in South Africa the transfer reduced the labor supply of prime-aged individuals living with the elderly, Ardington et. al. (2009) determined that the transfer results in an increase in employment among this same group.

It is also considered that access to non-contributory pensions can influence enrollment of school and preschool-aged children, since it reduces the need for young children to work and help with school related expenses. Carvalho Filho (2008) used a social security reform to estimate the effect on child labor and school enrollment among children living with pension beneficiaries in rural Brazil, finding that school enrollment increased while child labor decreased among children living with pensioners.

El Salvador is the country with the third lowest pension coverage for both contributory and noncontributory systems (Bosch, Melguizo and Pages, 2013). In 2009 the Government started the "Our Elder´s Rights" Program, intended for the elderly population in El Salvador (over 60 years) as an initiative to improve the living conditions and the exercise of the rights of older persons. The program includes a noncontributory pension component called the Universal Basic Pension (UBP), of $ 50 per month to persons aged 70 years or older (Cordova, 2013). The UBP component began in the 32 poorest municipalities of the country, according to the 2005 national poverty map (severe extreme poverty), subsequently adding more municipalities in mid-2011 to total 21 municipalities (high extreme poverty), and reaching a total of 15,300 participants. A third expansion between 2012 and late 2013 included 28 additional municipalities, reaching by the end of 2013 a total of 29,085 participants in 75 municipalities of the country. Our study aims at evaluating the impact of the Universal Basic Pension (UBP) on beneficiaries using a specialized survey collected for this purpose. The following section of the study discusses data and methodology, then we discuss main results and finally we include some conclusions and policy recommendations based on our results.

III. Evaluation Design and Methodology

Our research focuses on the UBP component of the OER program. The objective of this study is to quantitatively determine the effects of the UBP cash transfers on the living standards of households with participating adults. Our retrospective analysis of program impacts was originally conceived as a regression discontinuity design, comparing outcomes of households around the age-eligibility threshold of 70 years. This strategy was abandoned following initial analysis of the program participation data, given very low participation during the first year of eligibility and no variation in treatment around the threshold, which invalidated the regression discontinuity approach. However, given that treatment is conditioned deterministically on age, we are able to apply an instrumental variables approach to correct for potential endogenous selection of the 70+ age population enrolled in the program. We additionally re-define the regression discontinuity at the empirically observed cutoff of 70 years and 10 months, when enrollment rates begin to increase, and estimate a "fuzzy" regression discontinuity model around this cutoff. For completeness, we present and report results from both the fuzzy regression discontinuity design as well as the instrumental variables approach, though our preferred identification in this context is the instrumental variables analysis.

1.1. Regression-discontinuity Model

The proposed strategy for evaluating the UBP uses the regression discontinuity method (Hahn, Todd and Van der Klaauw, 2001; Imbens, GW and Lemieux, 2007; Lemiux and Lee, 2010) based on a quantitative and continuous eligibility rule. In the context of UBP, there are two potential program eligibility rules meeting the conditions needed for a regression discontinuity analysis; namely (1) the age of the elderly person in the household and (2) the poverty index of the municipality of the elderly person/household residence.[3] In the first case, only households with people aged 70 or more are eligible to participate in the program. In the second case, only eligible households in municipalities with severe high end extreme poverty can participate in the program.

A first analysis to determine possible comparability between treatment and control groups was conducted using the survey on the Characterization of the Elderly, implemented in 2011 in the 100 Municipalities with severe and extremely severe poverty levels according to the 2005 poverty map. This approach concluded that the levels of comparability between the exogenous characteristics of eligible and non-eligible households living in non-intervened and intervened municipalities were low, but found better comparability levels between eligible and non-eligible households within the same municipality. The impact analysis, therefore, uses only the eligibility rule based on age of the elderly to participate in the program as the forcing variable.

The treatment status can then be described as a discontinuous and determining function on age. If we assume that the unobservable characteristics vary continuously around this threshold, the Program´s allocation rule replicates a randomized trial for the treatment for a near cutoff interval. Therefore, it is expected that individuals between 66 and 69 years are similar to individuals over 70 years, except for the fact that the latter receive a money transfer. Under this logic, the comparison group consists of those households where the oldest member does not exceed 70 years of age, but whose age is close to this point. The treatment group, on the other hand, consists of households whose oldest adult is at least 70 years. Furthermore, following the strategy proposed by Imbens and Kalyanaraman (2009), the consumption variable of the 2011 Elderly´s Characterization Survey proved that the optimal bandwidth for the regression discontinuity analysis is the range between 66 and 74 years of age.

As proposed by Lee and Lemieux (2010), then, it is possible to estimate the causal impact of granting the pension on the outcome indicator by the following regression:

$$Y_{ij} = \alpha T_{ij} + \beta X_{ij} + F_{-}(B_{ij}) + F_{+}(B_{ij}) + \lambda_j + \varepsilon_{ij} \qquad (1)$$

Where Y_{ij} represents the outcome indicator for an individual *i* residing in region *j*. T_{ij} *is a binary* variable equal to one if the individual is eligible for receiving the cash transfer and zero otherwise; i.e. $T_{ij} = 1\{Z_{ij} \geq 70\}$ where Z_{ij} is a variable that represents age and takes values between 66 and 74 years. X_{ij} is a vector of covariates affecting the dependent variable. $F_{-}(.)$ is a

[3] The program intervenes in the 75 poorest municipalities of the country according to the 2005 poverty map

k order polynomial for negative values of B_{ij}, and $F_+(.)$ is a k order polynomial for B_{ij} values equal or greater than zero, where the latter variable is defined as $B_{ij} = Z_{ij} - 70$. Centering Z_{ij} on the cutoff point, in this case 70, is simply a normalization. The model also includes fixed effects by municipality, represented by λ_j. Finally, ε_{ij} is the error term, which is independent and identically distributed. The parameter of interest, α, represents the local average treatment effect around the discontinuity point.

It is noteworthy that T_{ij} is an exogenous variable, as it depends only on Z_{ij}, and Z_{ij} is a function of B_{ij}; therefore, the exogenous nature of the treatment is guaranteed by controlling through this variable in the regression model.

The validity of the estimates obtained by this approach depends on the fact that the proposed polynomial functions provide an adequate description of $E[Y_{ij}|Z_{ij}]$. Otherwise, what could be reflected as a jump or discontinuity due to treatment could be simply a non-linearity not taken into account in the function of the conditional average of the counterfactual (Angrist y Pischke, 2008).

1.2. Effective Enrollment and Extensions to the Identification Strategy

According to the UBP operating manual, all persons aged 70 years or more, who live in extreme poverty and social exclusion, are eligible as UBP participants. In practice, this is determined geographically by using the poverty map. However, the effective incorporation of the elderly into the UBP is not immediate upon turning 70 years old. The registration process involves a series of procedures that range from the listing of candidates and validation of the vulnerability conditions by the municipal committees, to the verification of other benefits and further revalidation of pension agreements between the Social Investment Fund for Local Development (FIIVL) and the participants.

In fact, upon analyzing the rates of program enrollment in the elderly person´s survey carried out for the evaluation purposes, it was observed that enrollment rates at age 70 extremely low. In fact, it was discovered that the operation of the program is not designed to incorporate all elderly persons who reach age 70 every month. New participants are added in three cuts of four months each and the registration process takes about 6 months before having the elderly person effectively enrolled in the program and able to collect the UBP. This mechanism, by definition, determines that while the key eligibility age for the program is 70, as initially proposed in the evaluation design, in reality the effective participation rate in the program occurs at 70 years and 6 months of age, and picks up effectively near age 71. In fact, the enrollment rate at age 70 is only 9% of eligible elderly persons, and it increases to 56% at age 71.

Given this program operational context, the participation rate at 840 months of age (70 years) is only 6%, and begins to pick up at 850 months of age (70 years and 10 months) where the rate rises to 21%.However, it is not until 852 months (71 years) that the participation rate reaches almost half of the people who should be enrolled, and at 856 months of age (71 years 4 months) that the participation percentage exceeds 70%. Figure 1 shows enrollment rates by age in

months, starting at 840 months (70). The red dots represent the percentage of participation at 840, 850, 852 and 856 months of age.

Given that the regression discontinuity strategy (RD) reflects the impact of the program near the eligibility cutoff point, the effective eligibility cutoff age to participate in the program was redefined to 70 years and 10 months (850 months), when empirically a sustained increase begins to be seen in the participation rate –albeit even with this adjustment, participation rates remain low around this new cutoff. This context with low rates of effective participation at the cutoff point describes a scenario of fuzzy discontinuity, since the probability of participating in the program does not "jump" from 0 to 1 at the cutoff point (a sharp context). In the context of a fuzzy discontinuity, we estimated the regression discontinuity model in equation (1) by using the method of instrumental variables. Under this additional adjustment, the effective participation of elderly persons in the program was instrumented by the eligibility to participate binary variable; i.e. being over 70 years and 10 months. This method involves estimating the causal impact of the effective participation in the program in two stages:

$$T_{ij} = \delta Z_{ij} + \gamma X_{ij} + F_{-}(B_{ij}) + F_{+}(B_{ij}) + \lambda_j + \varepsilon_{ij} \qquad (2)$$

$$Y_{ij} = \alpha \hat{T}_{ij} + \beta X_{ij} + F_{-}(B_{ij}) + F_{+}(B_{ij}) + \lambda_j + \varepsilon_{ij} \qquad (3)$$

Where T_{ij} is a binary variable equal to one if the individual has received the money transfer and zero otherwise, and Z_{ij} is a binary variable for program eligibility equal to one if the age of the elderly person is 70 years and 10 months or more, and zero otherwise. X_{ij} is a covariate vector affecting the dependent variable . $F_{-}(.)$ is a k order polynomial for negative values B_{ij} and $F_{+}(.)$ is a k order polynomial for B_{ij} values equal or greater than zero, where this last variable is defined as $B_{ij} = Z_{ij} - 850\, months$. Y_{ij} represents the outcome of interest for an individual i residing in region j. As in equation (1), centering Z_{ij} on the cutoff point, which is now 70 years and 10 months, is simply a normalization. The model also includes fixed effects by municipalities, represented by λ_j. Finally, ε_{ij} is the identically distributed and independent error term. In the first stage (equation (2)) the probability that an elderly person has received the UBP is estimated according to age. In the second equation (3), the impact of receiving the transfer is estimated; thus, the parameter of interest is given by α, which represents the local average treatment effect around the point of discontinuity. [4]

In addition to the adjustments to the regression discontinuity model presented above, we added a second identification strategy to deal with potential methodological challenges of low participation around the original cutoff point at 70 years. The instrumental variables (IV) also takes advantage of the treatment according to the age of elderly persons, since only households with a member between 71 and 74 years is eligible to participate (households with elderly members aged exactly 70 years were excluded from the sample).

[4] It should be noted, moreover, that with such a low participation in the official cutoff point (so few observations by the treatment group), the statistical power of the impact analysis is greatly reduced; which adversely affects the likelihood of finding significant effects in the program.

Like the RD model, IV identification also takes advantage of the exogenous variation in treatment eligibility based on the age of the elderly person, but rather than estimating the impact on the cutoff point (with the corresponding favorable comparability properties) it estimates the average impact on enrolled households, using the elegibility criteria to correct for potential endogenous selection into treatment. All models include municipal fixed effects and exogenous baseline characteristics to make corrections in case of potential observable imbalances, either due to exogenous or geographical differences among households, as for instance the education level of the elderly member. To identify the local impact of treatment on the treated in all the age distribution ranges (71-74), we replicated the strategy of instrumental variables (equations 3 and 4), where participation in the program based on eligibility due to age is instrumented. In addition to solving the low enrollment rates at the cutoff point (possibly including the problem of weak instruments under the fuzzy strategy), we believe that the simple differences methodology, in which the 70 year cohort is eliminated, has two additional advantages. First, the potential effects of delay or temporary lags in the program are reduced; i.e. households with elderly members taking some time to adjust their decisions and behaviors once they start to receive the pension, and therefore, appear only several months after participating in the program; and (2) any anticipatory effects of pension benefits by the "comparison" group of the RD are reduced -which in practice are those households with elderly members younger than 70 years and 10 months of age, and therefore eligible to officially enroll in the program- but due to operational reasons are not eligible to collect benefits. If this particular group of households shows anticipatory effects, then we might underestimate the detectable impact with the RD strategy.

When presenting the results in Section 6, we report the estimates for each variable according to the RD and IV models. In the main text, we report the results from the linear model with controls. The tables on the appendix show additional specifications for each variable, including models with flexibility in the functional form for RD models, and an estimated average impact on the entire eligible population (OLS models), which are equivalent to the effect of the "intent to treatment." We assume that the theoretical properties of the RD model are superior to the IV in terms of comparability among elderly persons in the treatment and comparison groups, since it actually compares outcome indicators between groups that, except for the participation in the program, are indistinct in a range around the cutoff point. As the sample of elderly persons in the program has been effectively incorporated into the program just a few months, we propose that in our context, the RD results can be interpreted as short-term impacts. By contrast, the IV model averages program impacts across the distribution of ages and therefore can be interpreted as a medium-term impact, where the average time in the program is one year and 7 months. The methodological cost of the IV is that, as it distances itself from the eligibility limit and not explicitly controlled by this key variable, the estimated impacts are more susceptible to potential biases due to omitted variables.

IV. Sample and Data

The 2013 Elderly Persons Survey (EAM2013) was carried out during the second half of 2013 in the 32 municipalities under severe extreme poverty in the country, following the proposed impact analysis methodology. Through the Single Register of Participants (RUP), an instrument whose purpose is to have a database of potential participants in social investment programs, it was identified that the population of households with an adult between 66-74 years in the 32 municipalities under severe extreme poverty was about 2,000, and it matched the sample sizes needed to capture the minimum detectable effects desirable for the consumption variable. For this reason, sample selection was performed in a single stage, by including into the sample all the households with at least one adult between 66 and 74 years in these 32 municipalities.

According to the information from the RUP, a total of 2489 households were planned to be surveyed, selecting only one elderly adult per household. Given that the RUP provided age information of all household members, when more than one elderly person was identified in the same household, then not only the eldest of all was selected for the analysis, but also he or she determined the treatment status for the household. In this sense, households whose elderly member selected was at least 70 years was classified as household / elderly person of the treatment group; whereas those below 70 years were identified as part of the comparison group.

Of the 2,489 surveys originally scheduled, the final sample consisted of 2,255: households/ elderly persons with ages outside the range of 66 to 74 years (102 households) were excluded, and because the strategy analysis required to have a variation of treatment status, those households / elderly persons within a sampling point with only one type of group, either treatment or control (13 households), were excluded as well.

Table 1 breaks down the composition of the sample by program eligibility: 994 households with adults over 70 years make up the group eligible for treatment and 1,261 households the comparison group. Even though the sample was constructed based on the selected elderly persons, the questionnaire collected information both at the household and at the individual level. In our analysis we have information for 3,726 individuals in the treatment group and 4,807 in the comparison group.

While the eligibility rule is based on the elderly persons, in the results section we generally refer to impacts on the eligible / treatment and non-ineligible / comparison households, whose status, as mentioned above, is given by the eldest member in the household. The analysis reported in this study reflect the impact results assuming the presence of just one single elderly person in the household since only a small fraction of the sampled households (3.41%) have more than one eligible elderly member (see table 2). That is, for the impact evaluation purposes we included households with both one and two eligible elderly members in the treatment group. However, since the percentage of households with two elderly adults is very low, we ignored this condition in the presentation of results. In fact, of the cases with two elderly members in the household (77), one fourth does not receive any pension (16), another quarter received only one UBP (16), and only slightly more than half (58.4%: 45 cases) actually receives two pensions; reason why the differentiated treatment in these cases should not make any difference. As a

robustness check, nonetheless, we replicated the analysis (1) controlling the number of elderly persons in the household, and (2) using only the sample of households where there is only one elderly member. Although the results in these additional exercises are not exactly equal in magnitude, they are very similar and consistent with those presented below.

In order to be able to empirically verify comparability between the treatment and comparison groups, a module was included in the EAM2013 where the features of the elderly and the household are investigated before their introduction of the UBP. This section emulates the building of the baseline survey that records a series of indicators before the program started and could have any impact on them. Information is collected retrospectively with this module, as it inquires about the prevalent conditions and characteristics in 2008, and which are, therefore, exogenous to the program.

We compared these exogenous variables between the treatment and comparison groups according to RD and IV estimation strategies. Table 3 presents the results of this analysis. Column (1) shows the indicators' average for eligible households and Column (2) shows the indicators' average for non-eligible households. Columns (3) and (4) present the estimated differences according to the models presented in equations (3) and (4). With the RD method we found significant differences only in the percentage of households that reported living in a private or independent house in 2008. The difference, significant at 10%, is 6 percentage points. The remaining 18 indicators are statistically equal between the treatment and comparison households; which shows good comparability between both groups. Moreover, under the IV model, which excludes 70 year old adults from the sample, 4 of 19 variables are statistically different in the context of the IV analysis (21%); namely, the number of household members in 2008, whether the elderly person could read, spouse number of years of schooling, and the number of rooms in the household. Indeed, by definition, better comparability is expected among adults whose age is around the cutoff point (RD), than among those more distant from it (IV). Usually, the absolute magnitude of imbalances is not large; however, we controlled for these variables in the regressions.

V. Results

For each outcome indicator we present the regression discontinuity (RD) model and the simple differences (IV) model estimation results described in section 4.2, controlling for the imbalances found in the retrospective section and including fixed effects per municipality. Each column presents the results of a separate regression. In the Appendix we present additional models, including models of intention to the treatment, higher order RD equations without baseline controls or any municipal fixed effects.

Income and Poverty

Non-labor income includes rental income, remittances, food fees, rents, UBP income and support from other government programs. To reduce measurement error potential, the income

variable was truncated at the 99 percentile, assigning a value equal to the maximum 99 percentile income to all the 1% greatest values in the sample. The average monthly non-labor income in the comparison group is $ 43.24. The $ 50 monthly UBP enters as a component of non-labor income in the household; therefore, in the absence of substitution effects with other sources of non-labor income, we would expect that the impact of the program would be for an equivalent amount. Indeed, in Table 4 the estimated coefficient impact in model 1 with RD is $46.76 per month in households participating in the UBP, and it is not statistically different from $50. Model 2 estimates the average effect for the whole population of elderly persons aged 71 to 74 years, with an impact of $40.86, which is statistically significantly lower than $ 50 (See Figure 2).

One part of the reduction in non-labor income of IV participant households could be explained by the reduction in other income received by the household, particularly from remittances. In this sense, the program could generate a displacement effect on other sources of income. For example, after learning about the additional income generated by the pension, the transfers and remittances from other relatives or acquaintances of the elderly persons are reduced. In Model 2 of Table 5 we observe a monthly decrease of $ 4.96 in remittances received by households with participants between 71 and 74 years. In other words, a household not participating in the pension receives on average about $ 25 a month in remittances; but the participant household will receive on average about $ 20 a month. These results are statistically significant at 10% level. We note that this substitution effect is not manifested in the short term, as it can be observed in 1 and 3 RD regression models presented in Table 5 (see Figure 3).

With respect to other types of income; i.e. wages, business and agricultural activities, no significant program effects were observed -although the coefficient in Model 2 is negative, suggesting the possible displacement effects from other sources of income (Table 6, Figure 4).

Table 7 shows the aggregate of income indicators presented above (see Figure 5). In particular, in model 1, an effect of $ 65 a month is observed, and in model 2, an effect of $30. As noted above, this increase in total revenue was primarily due to higher non-labor income for UBP transfers. Models 1 and 2 report the estimated impacts on total revenue in dollars. We note that in the case of model 1, the estimated impact is not statistically different from the $ 50, the total transfer amount, while model 2 is significantly less than 10% (but not than 5%). This result in total income includes the net effect of the increase in income from the pension, plus the displacement effects (or multiplier effects for investment) that could occur in the household. Although we cannot rule out that the total amount of revenue will increase by $ 50, in light of the above evidence on remittances, is likely that the net effect of the UBP on income will be less than $ 50 in the medium term. Later on, the impact of the program on independent and dependent labor participation will be discussed, to complement the evidence of potential displacement sources resulting from the transfer.

What does the additional $50 a month represent on the welfare of the elderly and their families? Further analysis to evaluate the impact of the pension is the one referred to in the poverty line.

Table 8 shows the impact of the program in terms of poverty and extreme poverty (See Figures 6 and 7). The poverty lines for rural areas in 2012 were $ 62.56 per person per month, and $31.28 in the case of extreme poverty. In the first two columns we present the impact results for poverty and in the second two the results for extreme poverty. In three of the four models we concluded that the UBP reduces the incidence of poverty. The reduction of the percentage of households living in poverty conditions is 15% in the RD model but not significant in the IV model; but in the case of extreme poverty, UBP reduces the probability that a household be under the extreme poverty line from 13 to 26 percentage points. While it is observed that in non-participants group 59% of households are extremely poor, this percentage is reduced to 33% with the UBP transfer in the short term (RD) and to 46% in the medium term (IV). The difference in the impact of the program in reducing poverty in the short and medium term could be explained, as observed above, by substitution effects, where household income from other sources tends to decrease with the program.

Consumption and Food Security

What has the increase in total household revenues translated into? This section describes the impacts on consumption disaggregated into different categories.

Model 2 in Table 9 indicates an increase in per capita consumption of $5.00 or 9% per month for households with elderly participants (see Figure 8). That is, while the per capita consumption in households with older adults aged 66 to 69 years is $ 66.17, for adults between 71 and 74 years it is $ 71.11.

The results shown in the following three tables (10, 11 and 12) indicate that the increase in per capita consumption is mainly due to an increase in the value of food consumption. Model 2 reports an increase of nearly $ 4 per month in per capita food consumption in households with elderly participants. While in households with adults aged between 66 and 69, food consumption averaged $ 41.49 a month, households with adults aged 71 to 74 consumed 45.3 dollars.

The coefficients shown in Table 11 also illustrate that the increase in food intake occurs via two different behavioral changes. Food consumption consists, first, of self-supplied food products, given free or paid in kind; and secondly, purchased food products. The first two columns of Table 11 report the results of food consumption by self-consumption, and columns 3 and 4 by purchased food. This table highlights that the increase in food consumption comes from the ability to buy more food. The results indicate a decrease in self-supplied food, given free or paid in kind, though not significant. The pension, therefore, allows participating households to increase consumption between 5 and 7 dollars a month per capita (see Figure 9 and 10).

In fact, according to descriptive information reported by program participants in terms of the use of the UBP, the most important use that elderly participants give to their pension is (1) the purchase of food and beverages (54 %), followed by (2) doctor consultations, medications, vitamins and / or supplements (21%), and (3) 8% savings.

The results of non-food consumption are shown in Table 12. Although the coefficients are positive, none of them are significant, so it can be concluded that the observed increase in total consumption per capita is due to the increase in food consumption via food purchase. Indeed, on the health side, it seems that no net increased amount is spent on health services. A likely explanation for this lack of a positive effect could be that the pension transfer shifts prior health expenses covered by other income sources, thus freeing resources for other expenses. An important result is that the percentage of expenditure in tobacco or alcohol is practically zero; however, it must be noted that this indicator is self-reported and can be susceptible to under-reporting.

The questionnaire also inquires about food insecurity. In particular, it asks whether the elderly person (1) had been concerned about not having enough food, (2) stopped eating certain foods, (3) ate the same food for several days in a row for not having money to buy / prepare something different, (3) had to skip some of the meal times for not having enough food, (4) reduced the amount of food for lack of money, (5) stopped preparing food and skipping meals for not having enough food, and (6) gone to bed without supper for not having enough food at home in the last 12 months. These six items help define the concept of food insecurity: the higher the proportion of items to which the elderly responds affirmatively, the greater the food insecurity faced.

When we analyze this food insecurity ratio we can see that the UBP reduces such uncertainty by 8 percentage points. That is, while adults between 66 and 69 years who do not receive the pension suffer food insecurity in 47% of the items that make up the index, those between 71 and 74 years who are program participants have a food insecurity of 39%. These results are reported in Table 13 and Figure 11.

In an effort to reconcile the different effects on income, consumption and remittances, to determine the effect of the UBP on budget constraints faced by elderly persons and their families, we analyzed the monthly net cash balance per capita resulting from the sum of income (labor, pension and subtracting remittances) minus total consumption. Table 14 shows the results for the treatment and comparison groups, and what can be observed is that both groups face a household budget shortfall. The results indicate that there is no significant difference between income and consumption of households in treatment and control and therefore, the UBP has no differential effect on savings between intervention groups. Indeed, the additional income that treatment households have via UBP has no effect on their debt levels, so we can conclude that this additional income is mainly intended for consumption without affecting the levels of household surplus or deficit.

Employment

We analyzed the impacts of UBP on the work activity of elderly persons and other household members using two key indicators: dependent or paid employment and independent employment either as self-employed or independent farmers. We split the sample into different

age groups: (1) adults between 66 and 74 years, (2) adults between 18 and 65 years, and (3) minors between 5 and 17 years. The results are shown in Tables 15, 16 and 17 respectively. The first two columns report the results for the dependent employment indicator, and the last two columns show the results on self-employment.

In the case of adults between 66 and 74 years, the effect of the pension results in a reduction in both dependent and independent employment: 3% and 10% respectively in IV models. Labor force participation rates in the comparison group are 6% in dependent employment and 57% in self-employment. However, with the UBP, this participation drops 3% and 47%, respectively (see Table 15). On the other hand, in the RD models, an immediate program impact on older adults' probability of employment was not observed.

For adults 18 to 65 years employment results are significantly different from zero only in the case of independent occupation, where being a program participant increases the probability by 3.5 percentage points (Table 16). The coefficient on dependent occupation is negative but not significant, which may reflect a substitution effect between dependent employment and self-employment in the presence of the program. Although a deeper analysis of the impacts of UBP on productive investment is outside the scope of this paper, we argue that the increase in independent occupation may reflect greater liquidity in the household and / or an effect of contributory pension assurance, which allows some households to take on more profitable economic activities, albeit riskier.

For children and young people aged 5 to 17 labor income results are different. Contrary to what was found for adults under 66 years, there seems to be a substitution effect between dependent and independent work activities, but only in the short term. For the young population, the RD model reports an increase of 5 percentage points in dependent employment and a decrease in 10 percentage points in self-employment. In the long term any initial effect that could occur in the employment of children is reduced and no impacts are detected on the IV model (Table 17).

In summary, the UBP significantly reduces direct labor activity among elderly transfer participants and results also suggest a swap from dependent labor activities to independent ones within 18-66 years old household adults. Program impacts on employment could contribute, together with the reduction in remittances, to explain the less than $50 overall increase in revenues noted in previous paragraphs. One way to interpret the employment outcome for the elderly is that the UBP allows them to enjoy more free time.

Health

Analysis on health indicators is a particular topic. First, because the Family ECOS Program mentioned in previous sections, is present in the municipalities where the pension is awarded, and since it is a program that is open to the entire population of these areas, it can neutralize any differential that the pension could have generated between treatment and control groups. On the other hand, it is difficult to anticipate the effects of the UBP on health, especially when age is directly related to the prevalence of certain diseases and conditions, and when the

pension program per se is not offering any specific service in this regard. Given this context, this section focuses on the use of health services; in particular, health care and medical expenses in the last 30 days.

It is estimated that in the comparison group, on average, 24% of the elderly have sought medical care in the past 30 days, and according to Model 2 of Table 18, the elderly program participants between 71 and 74 years old show an increase of 5 percentage points in the probability of seeking medical services. This increased health care-seeking, however, is not associated with significantly higher medical costs. As shown in Table 19, the results are not statistically significantly different from zero; so it can be concluded that on average, participants spend the same amount of money on health-related costs as non-participants (between 11 and 15 dollars).

Community Participation

A variable representing the proportion of organizations in which the elderly participated in or provided a voluntarily service in the last 12 months was added to study the issue of community participation. In particular, we researched the participation of the elderly in a (1) business association, (2) agricultural group, (3) union / cooperative group work, (4) group of senior citizens, (5) women's group (6) local committees, (7) church / prayer groups, or (8) other community organizations. None of the models reported a significant effect different from zero. Table 20 indicates that in the comparison group, the level of community involvement is 6% on average, and since there is no effect of the pension in this area, the average for participants is the same.

Side Effects in the Family

Finally, we have explored possible effects of the UBP on other issues related with other family members. In particular, in terms of changes in household composition, credit access and changes in enrollment rates of children and young school age students (Tables 21, 22 and 23).

Besides causing changes in the behavior of the elderly, the UBP transfer could lead to changes in household composition. The presence of an additional income represented by the pension could, for example, create incentives for other members of the family to move in with the elderly participant. To evaluate this possibility, the change in household composition was analyzed, as well as the difference between the number of household members from 2013 to 2008. Table 21 reports the results of this analysis. The models did not report any significant result in household demographic changes among participating households.

Another variable of interest is the probability to request a credit in the last 12 months. As in the previous case, the results are not conclusive or significant. That is, both the comparison group and the treatment group are equally likely (40%) to have applied to a loan in the last year. The UBP did not affect this indicator (see Table 22). We also looked at the probability that a household member had a standing loan when surveyed. However, as in the previous case, the

results are not significant. Both the comparison group and the treatment group are equally likely (16%) to have an active credit (Table 22).

Finally, in regards to impact indicators, we studied if the pension affected or improved the probability of enrollment and attendance of children and youngsters between 11 and 18 years old. This probability tends to drop after 11 years of age. Table 23 shows the results of the analysis. Model 1 shows an increase in the probability of school enrollment and attendance of 7 percentage points, but not significantly different from 0. Model 2 shows an increase of 6 percentage points, significant at 10%. That is, without the pension, the rate of school attendance among children 11 to 18 years is 73%, but it increases to 79% among those whose households members are pension participants.

VI. Conclusions and Policy Recommendations

Evaluation results show a generally positive picture of the UBP. On the one side, some displacement effects by other household income sources and remittances are evident, but these effects are small relative to the increase in income and household consumption as a result of the pension. The net effect of the transfer is a reduction in 26 percentage points in the participant households' probability to be below the extreme poverty line and 15 percentage points to be below the moderate poverty line. This finding is makes sense if the income of participating households was well below the moderate poverty line before receiving the pension. The use of additional resources occurs mainly in the purchase of food, which results in a reduction in the food insecurity index of 12% or 6 percentage points.

There is also a reduction in senior labor participation, which may be consistent with the idea of providing a pension to a population that never contributed to the formal system and allow them to retire at age 71. This effect appears to act simultaneously with migration of adults between 18 and 49 years of about 4 percentage points from dependent to independent labor activities.

In general, one should not expect effects in the health area as the prevailing services eliminate potential differences between participants and non-participants. We only found UBP participants higher likelihood of seeking medical attention but not increased spending on health. No positive effects were found on community participation of seniors. An interesting an important effect of the UBP is the positive effect on school enrollment of young people aged 11 to 18 years (6 percentage points).

In balance, results indicate that the program is an effective tool to combat poverty, at least in the 32 poorest municipalities in the country. Beyond the improvements that the program provides on the welfare of the elderly, however, there are areas for improvement that should be explored in greater depth. The program seems to have a desirable effect in the sense that it allows individuals to retire at age 71 when they do not have access to a pension in the formal sector. The effect observed in other adults in the household must be further explored. Migration to

independent labor activities might be possible after the UBP due to previous liquidity constraints. Although the evidence is not clear, it is recommended to monitor beneficiary households and carry out specific evaluations to verify that the net effects do not cause a fall in labor participation -although this possibility seems less likely.

Although health care reform brought health care closer to homes in the municipalities included in the study, it appears that the pension has a positive effect on the use of health services. This could indicate that there is still a gap in supply that seniors are closing through the use of the pension; a gap that could be closed by the supply side under the new service delivery model. This difference could also be due to the fact that in the initial stages of the program, participants received health services when they collected the pension. This circumstance may have generated a remaining effect in the older population of the program. The effects in this area are small and must be confirmed by further observation. This may indicate the need to incorporate complementary policies to increase demand for health care by the elderly.

An indirect and unexpected result of the program is its effect on school enrollment of young people aged 11 to 18. Given that the level of significance of this result is not high, it should be analyzed in greater depth using both quantitative and qualitative methods. This finding represents a potential that should be explored and used as a policy option in the future, particularly if it can be a more cost effective mechanism than other policies currently in effect.

Are the effects applicable to the rest of the population participating in the program? This remains an open question, but we emphasize that the results of this study cannot be extrapolated directly to the other 43 municipalities where the program operates or by an expansion to new municipalities. The regression discontinuity strategy identifies a "local" impact for participating eligible households whose members are between the ages 70 and 74 years, and therefore these results cannot be directly generalized to the population of participants older than 74. This study used the 32 poorest municipalities according to the 2005 poverty map as the target population. In the same way that the effects on poverty are less than the effects on extreme poverty, it is possible that program impacts might be reduced as the program expands coverage to the less poor municipalities. However, given the current level of program coverage there is an opportunity to achieve similar effects among the population that has not yet benefited from this program. There are still a significant number of elderly persons in the country under extreme poverty who do not receive a pension benefit and to which the results of this evaluation would be more informative. It is important to keep monitoring the effects on new municipalities and if possible, to implement rigorous assessment strategies to detect impacts as the intervention model of non-contributory pension is expanded throughout the country.[5]

[5] Implementing experiments with randomized UBP allows for the identification of the average effects on populations with methodological advantages over the identification strategies used in this study. It is recommended to consider experiments at the municipal level or even at the household level as the program expands nationwide. Another alternative is to experiment on non-eligible households, eg the segment of

Finally, it is important to note that a non-contributory pension could motivate informality among those who are currently contributing to the formal pension system. This could occur when the transfers of a non-contributory program are high enough to discourage a [potential] beneficiary of a contributory pension system to continue contributing to the formal system. In El Salvador, nonetheless, approximately 21% of the elderly population is now retired through the formal contributory sector. The low current coverage of the UBP and its focus on the population of the poorest municipalities suggests that the program is far from the point where the two systems might have conflicting incentives. However, as the program grows, it is important to evaluate the performance of the initial objectives and avoid incentives to informality or onerous burdens to the country's fiscal balance with the expansion of the UBP to new populations of elderly persons in the country.

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households with elderly persons between 65 and 60 years, although the results could not be directly extrapolated to the population of participants aged 70 years and over

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Annex Tables

Table 1. Sample Composition

	Households with Member 70 years or older	Households with Members 69 years and younger	Total
Households/elderly persons	994	1,261	2,255
Household Members	3,726	4,807	8,533

Table 2. Number of eligible elderly persons in the households

Number of eligible elderly persons per household	Observations	Percentage
0	1,247[6]	55.3
1	931	41.29
2	77	3.41
Total	2,255	100

[6] This figure differs from the 1261 elderly persons compared in Table 1 because it was identified from the RUP that the oldest adults in the 14 households were individuals younger than 70 years. However, during the survey of the EAM2013 another adult over 70 years was found.

Tabla 3. Retrospective variable balance

Variable	Average in eligible households (1)	Average in Non-eligible households (2)	Difference RD (3)	Difference IV (excludes EP = 70 years) (4)
Number of members in the household in 2008	3.84	3.97	0.611	-0.244*
			[0.431]	[0.135]
Literate in 2008	43.89%	49.72%	-0.090	-0.076**
			[0.095]	[0.030]
School years	1.33	1.51	-0.115	-0.165
			[0.422]	[0.135]
School years of spouse	1.19	1.39	-1.024	-0.334*
			[0.647]	[0.173]
Father finished basic school	14.25%	11.87%	0.083	0.018
			[0.068]	[0.021]
Mother finished basic school	6.58%	7.94%	-0.027	-0.021
			[0.053]	[0.016]
Used to live in the same municipality where they live today	97.38%	97.15%	-0.046	0.008
			[0.032]	[0.010]
Used to live in the same house where they live today	92.77%	92.49%	-0.017	0.006
			[0.051]	[0.016]
Private or independent house	96.48%	96.59%	0.059*	-0.007
			[0.036]	[0.011]
Room in the house	1.41%	1.11%	-0.018	0.007
			[0.022]	[0.007]
Improvised house/ranch	1.91%	1.43%	-0.025	0.011
			[0.025]	[0.007]
Owner	71.40%	72.32%	-0.115	-0.004
			[0.086]	[0.027]
Tenant	1.31%	1.19%	0.014	-0.001
			[0.022]	[0.007]
Free occupant	15.51%	15.23%	0.034	0.010
			[0.070]	[0.022]
Did you or your family have the title of the property in 2008	81.60%	81.81%	-0.118	0.016
			[0.077]	[0.026]
Number of rooms used in the house in 2008	1.85	1.97	0.188	-0.136**
			[0.205]	[0.062]
In 2008, did the house have electricity	64.42%	65.74%	0.128	0.002

and a meter?			[0.089]	[0.028]
Toilet and sewage	3.42%	3.41%	0.019	0.002
			[0.035]	[0.011]
Toilet or septic tank	16.52%	17.61%	-0.022	-0.002
			[0.073]	[0.023]

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01.

Table 4 Non-labor Income (INL)

Model	**(1) Household INL (dollars) *RD***	**(2) Households INL (dollars) *S.D.***
UBP participant	46.76***	40.86***
	[11.32]	[3.55]
AM+ Age	-0.26	
	[0.25]	
AM- age	0.07	
	[0.11]	
Average of the Comparability Group	43.24	43.29
Number of Observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding).

Table 5. Remittances

Model	**(1) Household Remittances (Dollars)** ***RD***	**(2) Household Remittances (Dollars)** ***S.D.***
UBP Participants	0.31 [8.81]	-4.96* [2.74]
Age of the EP+	-0.17 [0.19]	
Age of the EP-	0.01 [0.09]	
Average of the Comparability Group	24.81	25.05
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding).

Table 6. Other Income

Model	**(1) Other Household Income (Dollars)** ***RD***	**(2) Other Household Income (Dollars)** ***S.D.***
UBP Participant	1.75 [35.34]	-13.48 [11.01]
Age of the EP+	-0.03 [0.77]	
Age of the EP-	-0.27 [0.38]	
Average of the Comparability Group	88.04	91.47
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding).

Table 7. Total Income

Model	**(1) Total Income (Dollars)** ***RD***	**(2) Total Income (Dollars)** ***S.D.***
UBP Participant	64.93*	30.22***
	[34.75]	[10.69]
Age of EP+	-0.70	
	[0.76]	
Age of the EP-	-0.23	
	[0.34]	
Average of the Comparability Group	127.1	130.2
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding).

Table 8. Poverty and Extreme Poverty

Model	**(1) Poverty** ***RD***	**(2) Poverty** ***S.D.***	**(3) Extreme Poverty** ***RD***	**(4) Extreme Poverty** ***S.D.***
UBP Participant	-0.15*	-0.03	-0.26***	-0.13***
	[0.01]	[0.03]	[0.09]	[0.03]
Age of EP+	0.002		0.003	
	[0.002]		[0.002]	
Age of EP-	0.001		0.001	
	[0.001]		[0.001]	
Average of the Comparability Group	0.77	0.76	0.59	0.59
Number of observations	2254	1977	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure.

Table 9 Total Consumption

Model	**(1) Total Consumption per capita (Dollars) *RD***	**(2) Total Consumption per capita (Dollars) *S.D.***
UBP Participant	6.99 [8.16]	4.94** [2.32]
Age of the EP+	-0.01 [0.16]	
Age of the EP-	-0.02 [0.07]	
Average of the Comparability Group	65.65	66.17
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding).

Table 10 Food Consumption

Model	**(1) Food Consumption per capita (Dollars) *RD***	**(2) Food Consumption per capita (Dollars) *S.D.***
UBP Participant	4.36 [4.72]	3.81** [1.5]
Age of the EP+	0.01 [0.10]	
Age of the EP-	-0.01 [0.05]	
Average of the Comparability Group	41.42	41.49
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding).

Table 11 Food Consumption per Self Consumption and Purchases

Model	(1) Food Consumption per self consumption (dls.) *RD*	(2) Food Consumption. Pc per self consumption (dls.) *S.D.*	(3) Food Consumption Pc per purchases (dls.) *RD*	(4) Food Consumption Pc per purchases (dls.) *S.D.*
UBP Participant	-3.12	-1.03	7.48*	4.84***
	[2.28]	[0.7]	[4.37]	[1.39]
Age of EP+	0.03		-0.03	
	[0.05]		[0.10]	
Age of EP-	0.02		-0.03	
	[0.02]		[0.04]	
Average of the Comparability Group	13.75	13.51	27.67	27.97
Number of observations	2254	1977	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding).

Table 12 Non-Food Consumption

Model	(1) Non Food Consumption per capita (Dollars) *RD*	(2) Non Food Consumption per capita (Dollars) *S.D.*
UBP Participant	2.63	1.14
	[3.70]	[1.19]
Age of the EP+	-0.07	
	[0.08]	
Age of the EP-	-0.01	
	[0.04]	
Average of the Comparability Group	24.23	24.68
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding)..

Table 13. Food Security

Model	**(1)** **Proportion of food insecurity items** ***RD***	**(2** **Proportion of food insecurity items** ***S.D.***
UBP Participant	-0.06 [0.05]	-0.08*** [0.02]
Age of EP+	-0.001 [0.001]	
Age of EP-	0.000 [0.001]	
Average of the Comparability Group Number of observations	0.46 2252	0.47 1976

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure.

Table 14 Net Monthly Budget

Model	**(1)** **Net monthly Budget per capita** ***RD***	**(2)** **Net Monthly Budget per capita** ***S.D.***
UBP Participant	10.27 [12.62]	5.53 [3.93]
Age of the EP+	-0.04 [0.28]	
Age of the EP-	-0.08 [0.12]	
Average of the Comparability Group Number of observations	-25.31 2254	-24.65 1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding).

Table 15 Employment of Elderly Persons between 66-74 years

	(1) Pr of being a dependent employee	(2) Pr of being a dependent employee	(3) Pr of being an independent employee	(4) Pr of being an independent employee
Model	***RD***	***S.D.***	***RD***	***S.D.***
UBP Participant	0.04	-0.03**	-0.03	-0.10***
	[0.04]	[0.01]	[0.08]	[0.03]
Age of EP+	-0.001		-0.001	
	(0.001)		(0.002)	
Age of EP-	-0.001**		-0.001	
	[0.00]		(0.001)	
Average of the Comparability Group	0.06	0.06	0.56	0.57
Number of observations	2253	1976	2253	1976

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure.

Table 16 Employment of Adults between 18-65 years

	(1) Pr of being a dependent employee	(2) Pr of being a dependent employee	) Pr of being an independent employee	(2) Pr of being an independent employee
Model	***RD***	***S.D.***	***RDD***	***S.D.***
UBP Participant	-0.005	-0.028	-0.001	0.035*
	[0.034]	[0.019]	[0.037]	[0.020]
Age of the EP+	-0.00		0.00	
	[0.001]		[0.001]	
Age of the EP-	0.00		0.000	
	[0.00]		[0.00]	
Average of the Comparability Group	0.183	0.195	0.342	0.335
Number of observations	3820	3165	3821	3166

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure..

Table 17. Employment of children and teenagers between 5-17 years

Model	**(1) Pr of being a dependent employee *RD***	**(2) Pr of being a dependent employee *S.D.***	**(3) Pr of being an independent employee *RD***	**(4) Pr of being an independent employee *S.D.***
UBP Participant	0.05***	-0.00	-0.10***	-0.02
	[0.02]	[0.01]	[0.03]	[0.02]
Age of the EP+	-0.001**		0.002***	
	[0.00]		[0.001]	
Age of the EP-	-0.001***		0.00	
	[0.00]		[0.00]	
Average of the Comparability Group	0.02	0.02	0.09	0.09
Number of observations	1901	1593	1901	1593

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure.

Table 18 Use of Health Services

Model	**(1) Pr. Of having sought Medical Care in the last 30 days *RD***	**(2) Pr. Of having sought Medical Care in the last 30 days *S.D.***
UBP Participant	0.02	0.05*
	[0.08]	[0.03]
Age of the EP+	0.001	
	[0.002]	
Age of the EP-	0.00	
	[0.001]	
Average of the Comparability Group	0.24	0.23
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure.

Table 19 Health Expenses

Model	**(1)** **Medical expenses in the last 30 days (Dollars)** ***RD***	**(2)** **Medical expenses in the last 30 days (Dollars)** ***S.D.***
UBP Participant	-4.181	0.149
	[8.074]	[2.491]
Age of EP+	-0.005	
	[0.18]	
Age of EP-	0.07	
	[0.08]	
Average of the Comparability Group	9.696	8.897
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure. 1% of outliers in this variable were recoded to the maximum value taken by the variable at the 99th percentile (top-coding).

Table 20 Community Participation

Model	**(1)** **Participation in organizations rate** ***RD***	**(2)** **Participation in organizations rate** ***S.D.***
UBP Participant	-0.00	0.00
	[0.01]	[0.00]
Age of EP+	-0.00	
	[0.00]	
Age of EP-	0.00	
	[0.00]	
Average of the Comparability Group	0.06	0.06
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure.

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Table 21 Change in demographic composition (2008-2013)

Model	**(1)** **Change in the number of household members 2008-2013** ***RD***	**(2)** **Change in the number of household members 2008-2013** ***S.D.***
UBP participant	-0.112 [0.259]	0.056 [0.082]
Age of the EP+	-0.002 [0.01]	
Age of the EP-	-0.002 [0.003]	
Average of the Comparability Group (change of number of members)	-0.156	-0.164
Average of the Comparability Group (number of members in 2008)	3.97	3.96
Number of observations	2254	1977

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure.

Table 22 Credit

Model	**(1)** **Pr. Of having requested a loan (informant)** ***RD***	**(2)** **Pr. Of having requested a loan (informant)** ***S.D.***	**(3)** **Pr. Of having an outstanding loan (some member)** ***RD***	**(4)** **Pr. Of having an outstanding loan (some member)** ***S.D.***
UBP Participant	0.05 [0.09]	-0.02 [0.03]	-0.01 [0.07]	-0.03 [0.02]
Age of the EP+	-0.001 [0.002]		0.001 [0.001]	
Age of the EP-	-0.002* [0.001]		-0.001 [0.001]	
Average of the Comparability Group	0.40	0.40	0.16	0.16
Number of observations	2254	1977	2254	1977

N Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure.

Table 23 School Enrollment and Attendance (11-18 years)

Model	**(1)** **Pr. Of attending school** ***RD (TOT)***	**(2)** **Pr. Of attending school** ***S.D. (TOT)***
UBP Participant	0.07	0.06*
	[0.06]	[0.03]
Age of the EP+	-0.002	
	[0.001]	
Age of the EP-	0.001**	
	[0.001]	
Average of the Comparability Group	0.71	0.73
Number of observations	1433	1209

Notes: Estimates by the Method of Ordinary Least Squares (OLS). Standard errors in parentheses. Levels of significance: * 0.10, ** 0.05, *** 0.01. In addition to the gender variable, retrospective module variables are included as controls (situation in 2008) as reading, writing, years of education, marital status, number of household members, type of dwelling, number of rooms in the home, if they have electricity and if they still live in the same structure.

Annexed Figures

Figure 1. UBP participation rate per age in months

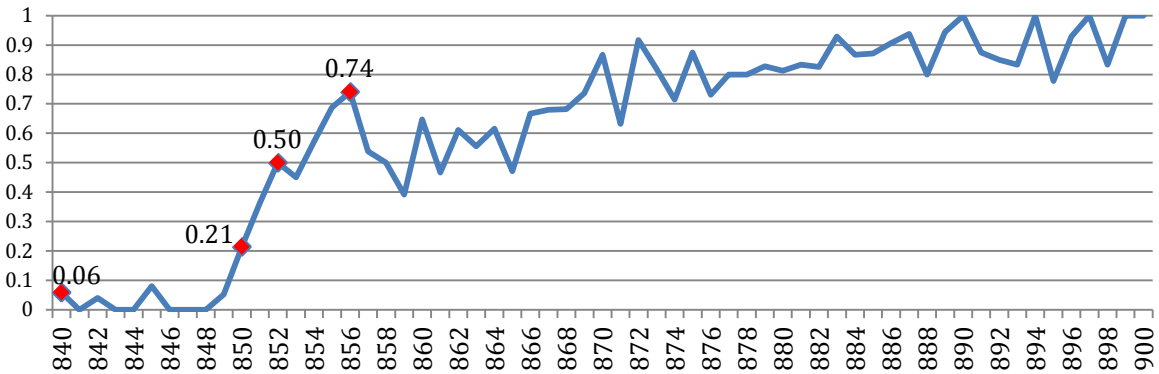

Figure 2. Household Monthly Non- Labor Income

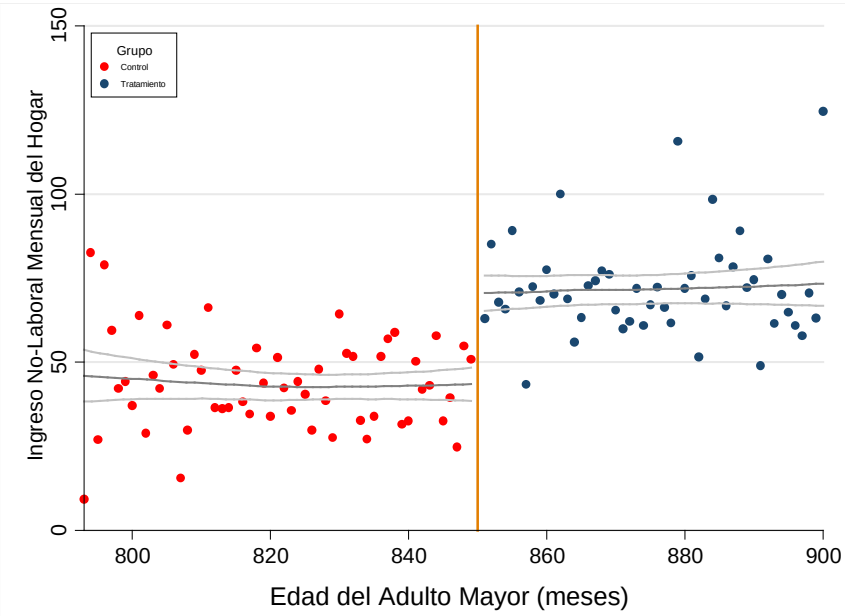

Figure 3. Monthly Household Remittances

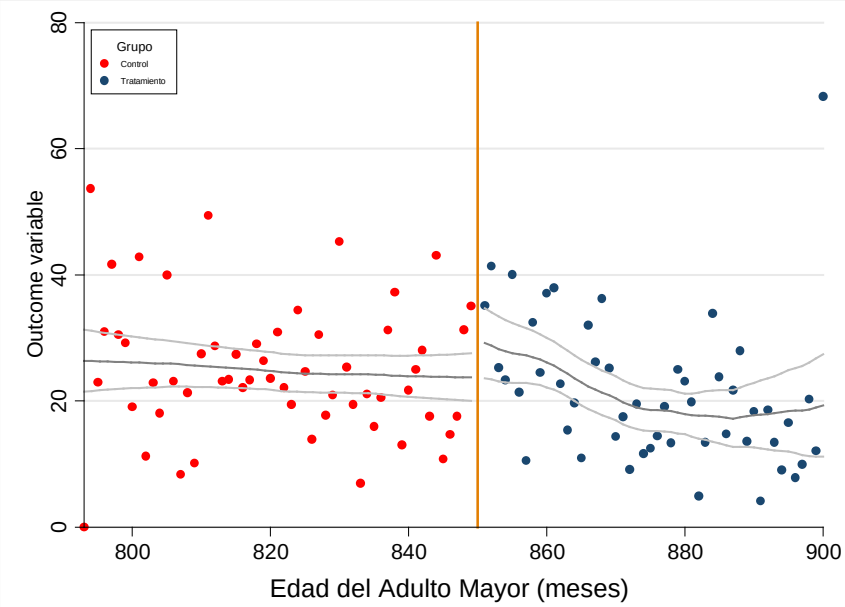

Figure 4. Other Household Monthly Income

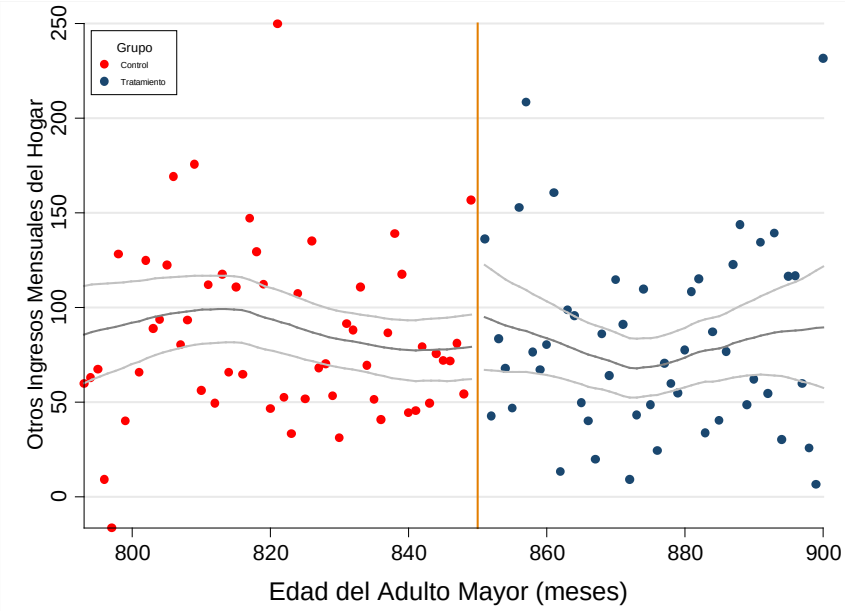

Figure 5. Total Household Monthly Income

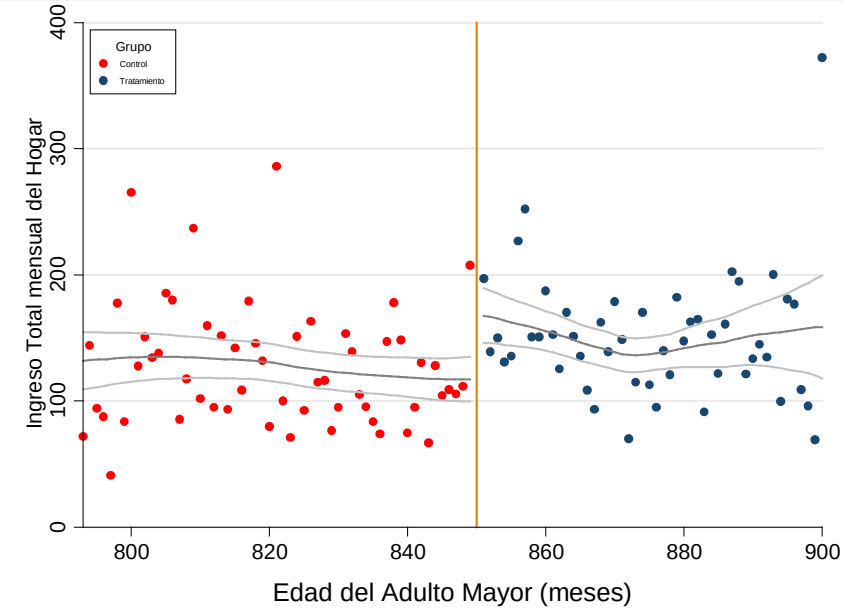

Figure 6. Poverty

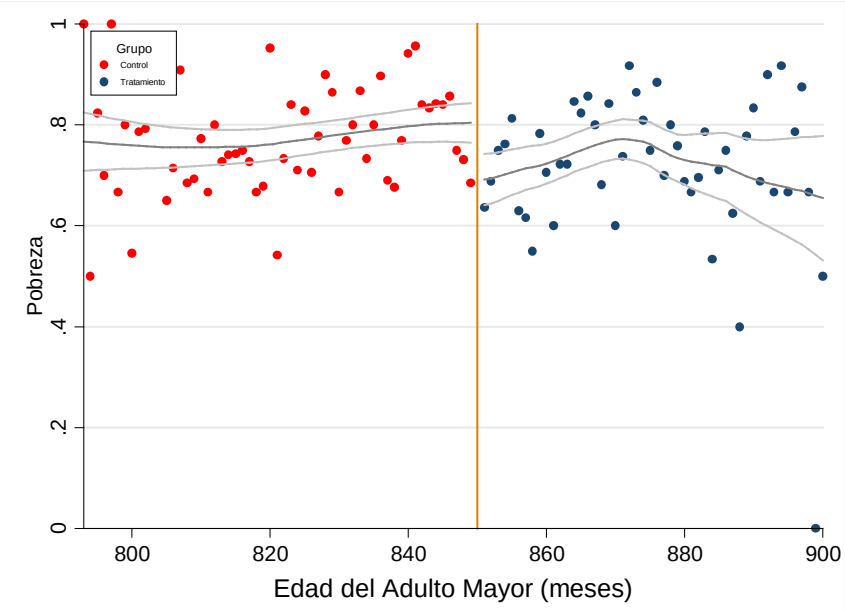

Figure 7. Extreme Poverty

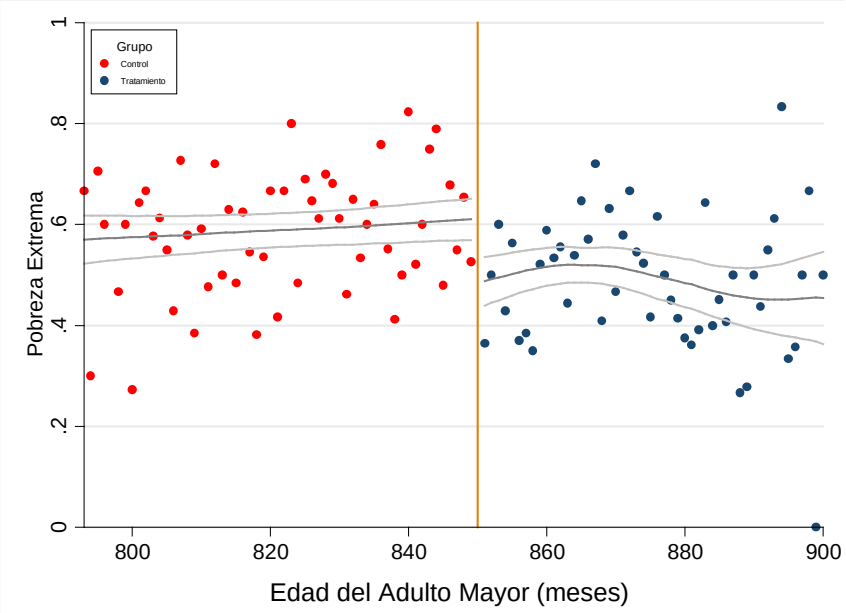

Figure 8. Total Monthly Consumption per Capita

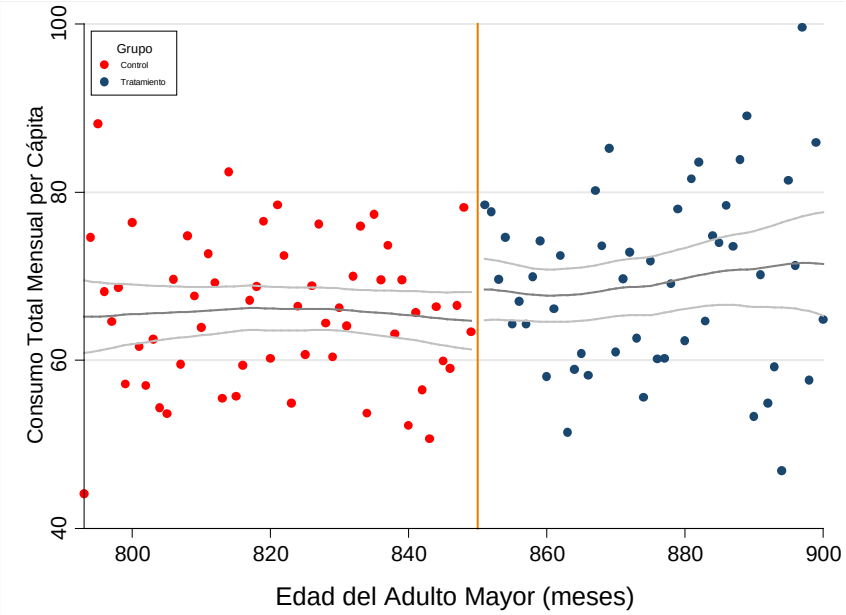

Figure 9. Food Consumption per Capita

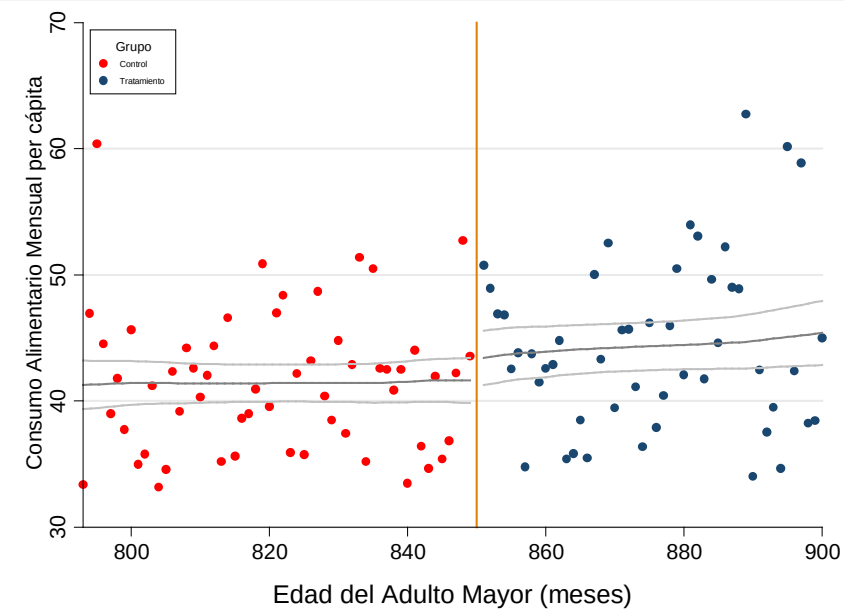

Figure 10. Food Consumption per Capita per food Purchase

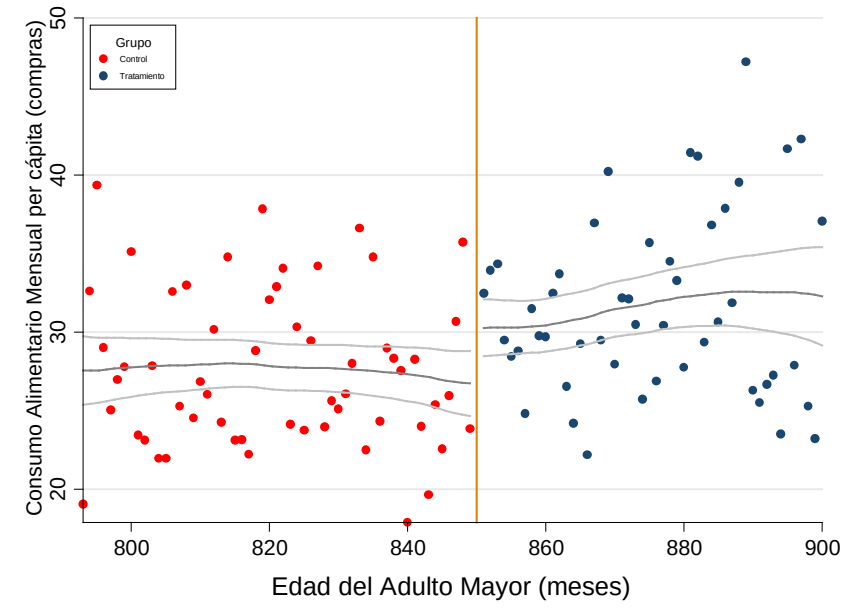

Figure 11. Food Security