

# Effects of In-Kind transfers on female labor supply: Evidence from the food supply program *Comedores Comunitarios*

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## Abstract

The literature argues that in-kind transfers may have a positive effects on labor supply. In this paper we use a food and nutrition program implemented in Bogota (*Comedores Comunitarios*) to shed light on this issue. The program gives poor people living near dining rooms, one free meal per-day. Using a matching approach with Encuesta de Calidad de Vida 2007 cross-section survey data, both positive and negative significant effects on female labor supply were found for different groups of women (differing in age, household composition and access to social networks). These results are relevant to understand the heterogenous work incentives generated when applying this type of program.

**Keywords** food and nutrition programs, female labor supply, in-kind transfers, collective decision.

**JEL codes** D12, H42, I38, J22.

## 1 Introduction

Fighting poverty may involve many instruments and there is no consensus about the best program design. One of the main issues is whether in-kind or cash transfers should be used. In some cases, an in-kind transfer is preferred as it enables the policy-designers to fix receptors consumption bundles. For instance, the Government can be sure of the quality of a lunch, in terms of nutrients and calories, by giving it directly rather than giving its equivalent in cash. Even though this might drive to an inefficient allocation of resources, additional consequences may arise. One of the most important is the distortion of labor supply decisions. Modifications on labor supply may affect long-term consumption paths, tax revenues and imply social costs. This work studies the effect on female labor supply of an in-kind food supply program in Bogota, Colombia.

Experience suggests that female labor supply might react more to a food supply program than men. First, labor supply is usually more elastic for females than for males <sup>1</sup>.

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<sup>1</sup>Some of these results are summarized by Smith and Cogan (1980), Killingsworth and Heckman (1987)

Second, food related activities in Colombian families are usually part of women's role in the household. In consequence, they might be the main beneficiaries of the program since it not only improves the quality of their food but it might also provide them some time left.

In order to improve future in-kind programs design, it is important to know if such programs alter labor supply. Additionally, it is also important to acknowledge the factors that enhance or inhibit those effects. In this article, we address these questions for the specific case of Comedores Comunitarios program in Bogota's beneficiaries: Is the female labor supply affected by the program?

In this paper we show that the effects of the *Comedores Comunitarios* Program on female labor supply are heterogeneous. When we analyze the impact at an aggregate level, results are small and similar to those found in the previous literature. However, this changes when specific household groups are analyzed. A positive and significant effect on labor market participation is found (additional 5 pp.) for married women who live with other household members. The impact is positive and bigger for older women (about 11 pp. for women between 47 and 55 years old) but it is negative for younger (fewer 9 pp. for those between 15 and 27 years old). Other characteristics like belonging to a social network, having additional assistance from other programs, living in a larger household, or being a wage earner or a self-employed also causes different effects.

The *Comedores Comunitarios* (communitarian dining rooms) is a program where a public dining room provides a daily meal to its beneficiaries in Bogotá (Colombia) city since 2004. They are selected by local committees and must fulfill some participation requirements. The program's main objective is to supplement nearly half of the total calories and nutrients needed by a person per day. This program gives us the opportunity to analyze an in-kind transfer program where individuals cannot resell the provided good (i.e. the in-kind transfer cannot be converted into a cash transfer). In particular, the effect of such kind of program on female labor supply in a sample from 2007 is considered here. As far as we know, this is the first article that does an impact evaluation for this program. The program was described and summarized by Núñez and Cuesta (2007), but no causal inference was done.

Given the current information, it is not possible to identify individual attendance to the program. Therefore, a wider concept of treatment is used. As the transmission channel involves household level decisions, a woman is considered as treated if any member of their household has attended a dining room. Hence, a composite effect is taken into

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and Altonji and Blank (1999). However, there are not clear results about the elasticity of Colombian female labor supply. Robbins and Salinas (2007) observed an increase in Latin-American female labor supply despite the stability of real wages, as part of a global tendency during the second half of XX century.

Growing female participation on labor market and a demographic change in Colombia was documented by Tenjo and Ribero (1998), Santamaría and Rojas Delgadillo (2001) among others. Robbins et al. (2009) argue that such growth in participation could be mainly due to the 'additional worker effect'. This effect is particularly important for the case of women who are not the household head as Charry L. (2003) points out.

account: a direct effect, the individual access to the food, and an indirect effect due to the participation of other household members. The in-kind transfer has two components: the food as a physical good and the time not spent preparing food. The interdependence of each household member budget restrictions must be taken into account: if the income of one member grew or his expenses were reduced, the consumption patterns of the other members are likely to change. This notion leads this research to analyze female labor supply effects in different household structures.

To obtain our results we measure the *average treatment effect on the treated* (ATT). For this purpose, we need to construct the counterfactual for the treatment group on participation and number of working hours. A counterfactual represents what would have happened if a treated woman was not treated. In order to reliably measure the impact of the program over its beneficiaries, the counterfactual units must be as similar as possible to the treated units. This was done by implementing the matching methodology. It selects a non-treated subset which is as similar as possible to the treated women group. The ATT is the difference in labor supply between the averages of the outputs between the treated units and their counterfactuals units. In particular, the applied matching method is the *nearest neighborhood Mahalanobis metric matching within calipers* defined by propensity score. This procedure and why it was selected will be explained in detail in section 4. The available information which includes treated and not treated units –controls– come from the cross section quality of life survey for Bogotá in 2007, *Encuesta de Calidad de Vida Bogotá 2007* (ECV07), done by the Colombian Bureau of Statistics (DANE).

The average effects on labor supply of food supplement programs are usually small and often insignificant. The most studied program is the Food Stamp Program (FSP) in USA. Fraker and Moffitt (1988) estimate that FSP reduces labor supply of single mothers. Hoynes and Schanzenbach (2007) found a similar effect but not significant. Hagstrom (1996) found that FSP has less effect on married couples than on single persons. Skoufias and Gonzalez-Cossio (2008) analyzed a food support program in Mexico and found no effects on both cash and in-kind transfers over labor supply. However, they found effects on time allocation between agricultural and nonagricultural activities. Bingley and Walker (2008) studied the effect of UK’s in-kind food transfers on single mothers labor supply. They found that even though those programs are conditional on working hours, they have little effect on promoting part-time work. This work addresses the same problem but also considering additional variables (apart from family composition) that might induce different reactions of labor supply.

After this introduction, the remaining parts of this paper are organized as follows. Section 2 discusses in-kind transfers. Section 3 presents the program details. Section 4 presents the identification strategy and Section 5 the dataset. Section 6 summarizes the main results. Section 7 presents the conclusions.

## 2 In-kind transfers, cash transfers and labor supply

Currie and Gahvari (2007) argue that economists usually consider in-kind transfers as inefficient solutions in terms of redistribution policy compared to cash transfers. In-kind transfers restrict the portfolio decisions of beneficiaries while they may always receive an equivalent in money such that they can choose their preferred consumption levels. However, there are paternalistic arguments to defend such policies<sup>2</sup>. Essentially, the argument appeals to the presence of an externality: one group takes specific decisions for another group that the second would not take alone.

The link between female labor supply and in-kind transfers is determined by the collective nature of labor supply decision. By affecting consumption of any household member, the program may change labor supply of other household members. We can think that there is a familiar budget restriction that includes food, leisure and a *numéraire* good. Each individual in the household makes his choice given an individual restriction that includes a sharing rule (Chiappori, 1992). That is, the amount of his own income that would be given or received depending on all members income. Thus, in the short run the program affects the budget restriction by modifying both food and work force endowments. As a result, families may change their optimal elections in *numéraire* consumption and labor supply for each member of the household. As they do not need to pay for food, they can spend the free money either on consumption or leisure. Similarly, as they do not need to cook, that free time can be used in other activities. The expected sign of the effect on labor supply can be positive, negative or null. It depends on household composition and other covariates that might affect the sharing rule and the valuation for food assistance. We turn to the analysis of this effect.

It is possible to define a utility function for women depending on leisure,  $L$ , food consumption,  $F$ , and a numéraire,  $C$ , all of them normal goods:  $U(L, F, C)$ . They must undertake a budget restriction:

$$wL + C + pB \leq w(T - H) + \phi(m, \mathbb{W}) \quad (1)$$

The woman's wage is  $w$  and it is a component of a vector including all household wages  $\mathbb{W}$ .  $T$  is the available time for leisure and work. Work is divided in two activities: remunerated work,  $l$ , and  $H$  which is the amount of time devoted to tasks related to food preparation (ie. cooking, buying supplies, etc.):  $T = L + l + H$ . There is a household non-labor income  $m$ , that with wages, jointly define the exogenous sharing rule  $\phi(m, \mathbb{W})$ . Food consumption can be obtained both from household work, bought from the market,  $B$ , and from the in-kind transfer  $G$ , so  $F = f(H) + B + G$ . It is important to introduce

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<sup>2</sup>The relation between welfare programs and labor supply has been summarized by Moffitt (2002) including both theory and empiric results. For the specific case of in-kind transfers, Cremer and Gahvari (1997) analyzed the in-kind transfers role on optimal taxation and Leonesio (1988) and Gahvari (1994) compared them against cash-transfers in terms of labor supply implications. Others outcomes have been analyzed, for example Meng and Ryan (2010) considered the link with school outcomes.

another restriction:  $B > 0$ : transferred food can be *topped up* but cannot be sold in a secondary market. The optimal labor supply depends on wage, exogenous income and the in-kind amount transferred.

The impact of the program on the labor supply comes from the sign of  $\frac{\partial l^*}{\partial G}$ . The direction of the overall effect is not straightforward. We must take into account the different scenarios: first, is  $B = 0$ ? That is, does the program gives the household more or better food than the one they would buy or prepare without the program? If not, the women may buy additional food for her household or invest more of her time in preparing it so the transfer will be equal to a lump sum transfer of value  $pG$ . On the other case, if food preparation and leisure are substitutes, the total effect could be either positive or negative (Leonesio, 1988)<sup>3</sup>. Second, there is a time allocation effect: as  $G$  increases  $F$ ,  $H$  could be reduced to use either on  $L$  or  $l$ . The free time could be spent either in additional working hours, that is, on increasing the *numéraire* consumption, or in “leisure” activities like childcare. Note that the sharing rule might be relevant to determine the income effect and therefore the sign of the effect.

Household composition and women covariates may lead to different effects on sign and intensity. For instance, the presence or not of small children on the household might drive to different results: the more children, the more “leisure” time is required by the women; but also more resources are needed for consumption. In this case, we cannot say anything *a priori*. Consequently, these kind of covariates must be taken into account. Additionally, sharing rule may be different for single and married women, but also between married women with and without children. A single woman may prefer more leisure than additional consumption whereas a single mother may value additional consumption for her children more (as her income is more likely to be the unique resource source). Household decision models, from Becker (1973) to Chiappori (1992), shows that household related variables are important as women share their income with their husbands, children and other relatives. Therefore, in our work it is important to differentiate between household types and women role in their families.

### 3 The *Comedores Comunitarios* program

The program is a component of the social policy called *Bogotá Sin Hambre* (BSH) [Bogota without hunger] undertaken in Bogotá (Colombia) since 2004 under the direction of the *Secretaría Distrital de Integración Social* [District Secretariat for Social Integration]. The main objective of the program is to reduce famine in Bogotá. They argue that an adequate food is a minimum requirement for life quality and development of personal capacities, so it is imperative to face hunger as it leads to bad performance in school or work. A lunch technically designed by nutritionists is given. It represents 35% to 40% of the total calories

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<sup>3</sup>Under this setup, the provision could be also understand as change on a “virtual price”. That is, a price in which the restricted bundle would be the optimal choice (Neary and Roberts, 1980).

and nutrients needed by day (SDIS). In January 2007, there were approximately 68.000 attendees in all 20 *localidades*<sup>4</sup> to the program in 241 dining rooms (Bogotá Mayor, 2007) -currently there are nearly 146.000 attendees and above 310 dining rooms-.

The program was designed not only to provide food supply, but also to return social rights to their attendees. In that way, the program seems to be paternalistic as beneficiaries' food quality consumption is decided by the Government. Their long run objective is that their attendees will be able to access to labor market and feed themselves and their families with their own production. The program involves voluntary training programs, citizen education, and integration activities in order to build social networks in the neighborhood<sup>5</sup>. Unfortunately, currently there is no data to undertake a long-run effect analysis. However, it is possible to analyze the short-run effect of the program. Moreover, Núñez and Cuesta (2007) showed in a survey designed for the program that 71% of the beneficiaries had been attending for less than a year in the program.

Participation requirements include living or working near one dining room, and having SISBEN<sup>6</sup> level 1 or 2 or living at Estrato<sup>7</sup> 1 or 2<sup>8</sup>. Priority is given to kids, pregnant and lactating mothers, senior citizens, handicapped citizens, families in situations of displacement, single-headed families and street dwellers. The selection mechanism works as follows: when a dining is going to be opened, a call is issued and program facilitators make a home visit to interested people to verify eligibility according to the rules stated above. However, Núñez and Cuesta (2007) argued that the program beneficiaries were not the poorest people and there were also press articles about this topic in 2007. There is an important group of attendees that does not fulfill the main requirements; only 45% of attendees are SISBEN level 1 and 21% SISBEN level 2. 13.4% households do not accomplish the entry requirements according to ECV07 data. They also found that those attendees were less educated people on the average. The main activity of one quarter of them is to work; 26% does not have any characteristic related to priority access; 8% are beneficiaries of another governmental program. Finally, 97% of them walk less than 10 minutes to the

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<sup>4</sup>Bogotá is divided in twenty administrative sections called *localidades*.

<sup>5</sup>A goal of the program is to obtain resources from a productive project. That is, a profitable activity where attendees might obtain experience. It is not compulsive to attend to meetings, trainings or to participate in any productive project. Initially, those projects were going to be funded using a voluntary fee paid by the attendees, \$300 pesos, that is, approximately 1.5 dollar cents. However, in 2009 Bogotá's major decided to suspend the fee due to incorrect management of those resources. In August 2010 a vote was held in the dining rooms for select the projects in which to invest the collected money since 2006. Therefore, it is not possible to analyze yet the impact of this component.

<sup>6</sup>*Sistema de Identificación de Potenciales Beneficiarios de Programas Sociales*: Identification system of potential social program beneficiaries. It is a life quality measure (Gamboa et al., 2000) that gives a score that define different levels of vulnerability: those levels are used by the government to define access to public assistance programs.

<sup>7</sup>Bogotá is divided in six *estratos* differing in average earnings, neighborhood amenities and land value. That classification is used to define public service tariffs.

<sup>8</sup>Núñez and Cuesta (2007) talk just about SISBEN 1 o 2. However, on the SDIS web page, being Estrato 1 or 2 is also an option.

dining room.

Eligibility process involves the analysis of a form called SIRBE ( *Sistema de Información para Registro de Beneficiarios de la SDIS*), a standardized registry for beneficiaries of the SDIS programs. It includes information about the housing type, home ownership, overcrowding, SISBEN index, average income, food consumption habits, marital status, education level and status, pregnant status, handicap status, ethnic group, familiar support and other kind of public or private aids. Moreover, the SIRBE form is designed for a whole household: it is centered on familiar dynamics and it must be fulfilled with each member information even for those who are not going to be in the program. The SIRBE data is analyzed by a local committee; therefore, there is not a unified score that determines the participation status.

## 4 Identification Strategy

Selection bias due to beneficiaries' selection mechanism is the main issue when constructing a good reference group. The literature on impact evaluation has different methodologies to solve this problem. Matching will be used in order to identify the ATT. If we let  $W$  represent the treatment with  $W = 1$  meaning that an observation is beneficiary of the program and  $W = 0$  that it is not a beneficiary,  $Y(W)$  represent the outcome and  $X$  a vector of covariates, the ATT is given by

$$\theta = E[Y(1) - Y(0)|W = 1, X]. \quad (2)$$

In order to estimate the parameter  $\theta$ , we need to build up the counterfactual. As it is impossible to observe both potential outcomes for the same individual, matching procedure find a control group such that  $E[Y(0)|W = 1, X] = E[Y(0)|W = 0, X]$ . Which is equivalent to  $E[E[Y(0)|X]|W = 1] = E[E[Y(0)|X]|W = 0]$ . The identifying assumption of this procedure is  $Y(1), Y(0) \perp T|f(X)$ , where  $f(X)$  is any function defined on  $X$ . This implies that covariates are independent from the treatment status; this is called the balance property:  $E[X|W = 1] = E[X|W = 0]$ .

The identifying assumption of matching relies on the balance property. This property is checked here by comparing treatment and control units means on each covariate by a simple  $t$  statistic. Additionally, the *Standardized Bias* (SB) suggested by Rosenbaum and Rubin (1985) is reported to look at the differences of the differences in each covariate before and after the matching. It is defined as follows:

$$SB = \frac{E[X|W = 1] - E[X|W = 0]}{\sqrt{\frac{1}{2} (Var[X|W = 1] + Var[X|W = 0])}} \quad (3)$$

To match units we will use the nearest neighbor Mahalanobis metric matching within calipers defined by the propensity score (Rosenbaum and Rubin, 1985). This method is a

mix between two matching methods: nearest neighborhood matching within the calipers and Mahalanobis matching. It proceeds in two stages: first, the propensity score is calculated and a first group is selected using the caliper. A unit will be chosen if its difference in terms of the propensity score is smaller than the caliper. Second, a Mahalanobis nearest neighbor matching with replacement on covariates is done, including the propensity score as a matching covariate<sup>9</sup>. This routine was implemented by Leuven and Sianesi (2003).

Rosenbaum and Rubin (1985) compared the nearest neighbor on the PS, Mahalanobis Metric Matching including the PS and the nearest neighbor Mahalanobis metric matching within calipers defined by the propensity score. They show the last method produces the best results in terms of balancing property.

Once we obtain the matched sample, three methods were used based on the weighting procedure for estimating the ATT.

The first method is the standard non-parametric estimator: a *Difference of Means* (DM) within each household composition group. For  $N_1$  treated observations and  $N_0$  control units, the ATT estimator<sup>10</sup> is:

$$\hat{\theta}(N_1, N_0) = \frac{1}{N_1} \sum_{i=1:W_i=1}^{N_1} Y_i - \frac{\sum_{i=1:W_i=0}^{N_0} Y_i}{\sum_{i=1:W_i=0}^{N_0} \frac{\hat{e}(X_i)}{1-\hat{e}(X_i)}}. \quad (4)$$

The second method is a weighted least squares regression using robust errors with controls within each group in order to control for remaining bias after the matching. It is called *Regression with Controls* (RC) and is formally defined as:

$$Y = \hat{\theta}W + \beta X + e. \quad (5)$$

The last method includes all the groups in which the sample is divided. This was done in order to obtain additional degrees of freedom. For  $I$  household composition groups the estimator for each group  $i$ ,  $\hat{\theta}_{G_i}$ , came from the weighted linear regression. It is called *Full Regression with Controls* (FRC) and is formally defined as:

$$Y = \sum_{i=1}^I \left[ \hat{\theta}_{G_i} (G_i * W) + \gamma * G_i \right] + \beta X + e \quad (6)$$

where  $G_i$  is a dummy for each group. The household composition groups are defined in the next section.

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<sup>9</sup>For further details on these methods you can check Rubin (2006) which includes Rosenbaum and Rubin (1985)

<sup>10</sup>Abadie and Imbens (2006) showed that in nearest-neighbor procedures, bootstrapping is generally not valid. Therefore, standard error is calculated assuming independence, fixed weights and homokedasticity.

$$Var(\theta(N_1, N_0)) = \frac{1}{N_1} Var(Y|W=1) + \frac{1}{N_1^2} \sum_{(i|W_i=0)}^{N_0} \left( \frac{\hat{e}(X_i)}{1-\hat{e}(X_i)} \right)^2 Var(Y|W=0)$$

The probability to participate in the labor market (Participation Decision) and the number of working hours per week (Weekly Working Hours) are the two main outcomes analyzed. Participation decision is defined as to be doing any paid activity or to be seeking a job. Weekly working hours are the total reported hours of labor activity during a week. The former outcome is analyzed only for those who were reported as employed in the same activity since 2005. It was done in order to have a proxy of the effect on women who were working before the program full implementation. Otherwise, senior employees would be confused with new employees that were influenced in their participation decision by the program. As both groups face different decisions and restrictions that are relevant for this analysis, this restriction is necessary.

## 5 Data

We use the ECV2007 which was designed for Bogotá by the DANE and it is representative by *localidad* in each *estrato*. The survey has 26,585 household observations. Two household questions of the survey are related to the program: the first, if household's head knows the existence of the program (72.21%); the second, if at least one household member attended the program (1,275 households, 6.78% from those who positively answered the former question).

The dataset is restricted to women aged and over 15 who are household heads or his spouse. At the end, 22,939 households were considered (86.3%). 4 households were excluded due to the absence of educational information and 203 as a result of home ownership missing data. Another restriction was done: estratos 4, 5 and 6 were excluded as they are not beneficiaries of the program (35 treated households were excluded as a result). Therefore the final number of observations is 18,750 where 1,108 of them are treated units (87% of the original 1,275 beneficiary households). 494 of them were working and 9 were excluded as there no information about job seniority was provided. From these, 217 were working in the same activity before January 2005. In terms of individuals, those 1.108 households correspond to 4,565 individuals (relatives of the household-head), while the 217 households involves 904 individuals.

The selection of covariates set is probably the most crucial decision in a matching approach. According to Dehejia and Wahba (1999), results might be highly sensitive to the set of covariates. The covariates must be important for the outcome but also for explaining the propensity to be treated. Additionally, they must not be affected by the treatment status (Imbens, 2004).

Most of the selected covariates are part of the SIRBE form so they are directly related to the selection decision of the program. Here they are grouped in five categories: woman, husband, household composition, and quality of life conditions. In order to analyze the sensibility of the estimation, results are presented including each set of covariates step by step. Those covariates are listed in table 1. The quality of life index construction is detailed

on the appendix.

Most of these variables are relevant for labor participation decisions, but some of the usual were excluded <sup>11</sup>. This is the case of the presence of other unemployed individuals and household income; those variables could be also explained by treatment status so they must be omitted. In the case of working hours, variables like economic sector wages were excluded due to the same reason.

As said, we analyze participation decision and working hours. For the working hours analysis the sample was restricted to women who had been working in the same occupation since January 2005. The idea is to analyze only women who had already a job before they entered to the program. Otherwise, information about women who decided to participate on the labor market due to the program could be introducing a bias on the estimations.

As we can see on figure 2(b), the quality of life index distributions of the treated and untreated groups overlap, there are no discontinuities. It also happens with the other continuous covariates as can be seen on figure 2. In particular, it seems that the program beneficiaries who are also receptors of other kind of programs transfers are not very different from the control group.

Covariates relevance was also checked. Table 2 resume the regressions of the treatment and the two outcomes against the covariates. The following covariates are not significant in any regression: calamity, chronic disease, change of residence and another handicapped presence. Specifications including and excluding those covariates will be taken into account.

Household composition groups are defined depending on the marital status of the self-reported household head. This is done in order to take into account the presence of potential income earners that will share it with their household. Even though this criterion enables to split the sample in further groups than the marital status (for example, the presence of older children), the following classification was done in order to ensure the sample size for each one.

1. **Single:** Women who live alone
2. **Couple:** Women who live only with their spouse
3. **Single-Head:** Women who are the household head and do not live with their spouse
4. **Couple-Head:** Women who are either the household head or the spouse of the household head

There is another important reason for differences in labor supply reaction: there are differences between the woman covariates within those groups as can be seen in tables 3 and 4.

Before presenting the matching process results, tables 3 and 4 information must be complemented. Tables 5 and 6 present the differences between control and treated groups

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<sup>11</sup>See Posada and Arango (2003) and Arango and Posada (2007) for the principal determinants of female labor supply in Colombia.

per household group and the associated standardized bias. In all cases, there are significant differences in key variables like age and years of education. The matching procedure goal is to reduce them to insignificance. In that way, the treatment and control groups would be comparable.

## 6 Estimation

In this section we present the results of our estimations. First, we present results about the balance property of the matching procedure. Then we present the results about the effect of the program on female labor supply. Finally we present some robustness checks of our results.

### 6.1 Balance Property

The main objective of matching procedures is to ensure balance. Tables 5 and 6 present the differences for each covariate between control and treatment groups before and after matching. It includes the significance level for a difference of means test, the SB as defined by equation (3) and the SB percentage reduction. As can be seen, all differences in each household group are insignificant after applying the matching procedure.

A good illustration of matching quality is the density of the propensity score for control and treatment groups before and after the matching. Figure 1 shows those kernel densities by each outcome (as the working hours sample is a subset of the participation decision one and as it includes further controls). The densities for the matching for the specific household groups are presented on figures 3 and 4. In all cases the quality of the process can be seen: the propensity scores before matching are notoriously different but are very similar after it. Additionally, at first sight common support seems to be assured. In fact, using a caliper of 0.01, all treated observations are included for participation decision and 3 are lost in the weekly working hours' specification. In both cases the balance property seems to be achieved in all variables as no significant mean difference remains. Moreover, most of the standardized bias are below 5%, as usual empirical studies (Caliendo and Kopeinig, 2005). Those results can be found in table 38 for participation decision and in table 43 for working hours. Along this paper, different variations of the matching procedure are implemented and presented. Their respective balance property tables are presented on the additional tables section on the appendix C.3.

### 6.2 Main results

Our main results comprise three types of estimations. First, we estimate the effect of the program on aggregate labor supply. Second, we allow the response of female labor supply to the program to differ with the household type. Third, we allow the effect to differ with

covariates presented in section 5. Finally we allow the effect to differ in both household types and other covariates.

### 6.2.1 General results

Table 7 present the DM and RC estimators as defined by equations (4) and (5) for the ATT on the overall group. A positive effect on the participation decision and a negative one on working hours are presented. However, those effects are small and not significant.

What we are going to see is that the impact of the program is heterogeneous as it depends of the type of household analyzed. Heterogenous effects are found when the impact is measured in some specific households. Next, results are presented differencing by household composition groups, cohorts, family size, presence of children, years of education, change of residence, presence of other transferences and SISBEN level, and the type of work and seniority (only for working hours).

### 6.2.2 Household Composition

Table 8 presents the same results discriminating by household composition. It is just as the previous table but includes the FRC estimator as defined by equation (6). In this case, significant results at 10% level are found for the Couple-Head group, about 5 additional pp. The FRC estimator leads to a significant effect on Couple working hours. However, the Single and Couple groups' effects are difficult to analyze as they involve a small number of treated observations: when they are included in the huge regression of FRC the variance structure changes enough for displaying this result.

### 6.2.3 Covariates Groups

Table 11 to 18 desegregate the overall effect into different individual and household covariates. Those results are presented in detail next.

Table 11 and 15 reports the effect for different cohorts. The cutoffs are defined by the availability of the number of observations en each case. Only the last cutoff was imposed in both cases as 55 years was the retirement age. In this case, both positive and negative significant effects are found. The youngest women of the sample are participating less in the labor market: about 9 fewer pp. On the other hand, women who are close to retirement age obtain 12 additional pp. Younger women are in an earlier life cycle so they might desire more leisure than additional consumption: they may want to spend time with their children (education and guidance) or for their own education for instance. The same pattern cannot be seen on working hours. As a result, when a program like this is introduced, age differences seem to be relevant for deciding the participation or not of the women on the labor market but not changing their labor supply decision when they have been working previously.

Household composition variables are also relevant (see tables 12 and 16). Larger families drive to a notorious positive impact on participation decision: families with five or more members have 15 additional pp. The same pattern is not as clear for working hours' decision: a positive impact is found for families with three members but it is not robust to the estimator. This can be understood in two ways: first, as a higher income is needed with larger families, additional consumption might be preferred to leisure; second, as there are more people available to work, women may concentrate on home related activities rather than on working. The presence of children has a different impact. The participation decision seems to be decreasing with a higher percentage of under-twelve, while a clear and huge negative impact on working hours is found for households with a higher number of small children: around 11 fewer working hours per week for families with small children are equal or more than 80%. In this case, household activities requires more attention so the time is not used in increasing the income but in childcare and similar activities.

At first sight, variables related with personal abilities seem to be not as relevant as the household ones (see tables 13 and 17). There is no pattern when using years of education. When seniority is analyzed, the impact seems to be negative and decreasing for women who have fewer months in the same activity. However, no significant effects were found probably due to dataset restrictions. All women included in this analysis have been working for more than two years in the same activity. There might be differences for women who have spent less time in the same activity which gives them a smaller activity change cost.

Tables 14 and 18 split the effect in a final set of covariates. Being part of an established social network seems to aid them to enter into the labor market: those women who had not change their residence since 2003 augmented their participation in nearly 3 pp. This is not the same for working hours: the social network effect is related more to the possibility to access to the labor market rather than on marginal changes on labor supply. Of particular importance is whether the family receives other transferences as it seems to be hitting the labor supply in different directions. A slightly and not robust positive result is found for participation decision, but a negative one is found for women who were already working. In the former case, they can work less as an external aid is coming. However, no woman decides to leave her job at all. The key to this might be related to SISBEN level: it does not have any impact on working hours' decision but it is relevant for participation decision.

An important difference is given by the type of work: wage earners often cannot change their labor supply as easy as self-employees. This is clear in table 18 where self-employees reduce by 8 hours their supply while wage earners not. A clear conclusion results: if one desires to design a program with low effects on labor supply, it should be targeted to employees as they cannot easily answer as self-employees. On the other cases, policy makers should take into account the impact on labor supply as it could be considerable, as we can see in these results.

#### 6.2.4 Covariates within household groups

Our previous results show us the heterogeneous impact of the program when analyzing some characteristics. However, those effects are enhanced by the combination of some of those characteristics. Tables 19 to 26 explore the same covariates of the former tables but for the two bigger household composition groups. Results are mostly the same but more intense.

By cohorts (tables 19 and 23), the impact on Couple-Head women close to retirement age is huge: nearly 24 additional pp. For the Single-Head case, the impact on younger women is also noticeable: 14 fewer pp. But we also found an increment of 11 pp. for women in retirement age. Hence, it is not only a matter of being younger or older but the combination with the household composition.

By household covariates (tables 20 and 24), the impact follows a similar heterogeneous pattern. By household size, Single-Head impact is negative for smaller families and positive for the bigger. However, these results have a high variance. For Couple-Head, the two forces behind previously described are visible here: in a small household the impact could be even negative, but it becomes positive with a bigger household. However, for very big families, the impact is again negative. For children under 12 participation in the household, there is no clear pattern for Couple-Head but there is for Single-Head. Women living alone with small children are highly discouraged to work if they found additional income sources. However, if their household is big, they still need to work. In their cases, the relative size of the transfers is relevant for determining the impact of the program.

Finally, under the final set of covariates (tables 22 and 26), for Single-Head the impact does not change enough to be noticed. That is not the case of Couple-Head households. Women who live longer on the neighborhood and probably have a better social network, work more after being treated: the effect is positive and with small variance (significant at 5% level) while the impact could be negative for incoming women. The presence of other transferences enhances a little the impact.

### 6.3 Robustness Checks

Results are robust to matching methodology and to covariates specification. Two alternative methodologies with similar results are presented. As mentioned, covariates specification is crucial and may drive to different coefficients. Our results stand this test.

Table 9 and 10 present 5 different specifications given the included covariates (these groups are explained in table 1). The first includes only the women covariates and no significant effect is found: for Couple-Head the coefficient is negative as for the other groups for the participation decision case. When including husband covariates, the differences are reduced for all groups and for Couple-Head the coefficients became positive. The third specification which includes household composition variables drives to the highest coefficients for Couple-Head, about additional 7 pp. and significant at 5% level (1% for RC

estimator) while the sign becomes unclear for the working hours outcome. Specification 4 includes quality of life variables and the coefficients for CM and RC for the participation decision case fall to 6 pp. The FRC estimator falls to 4pp but is not significant even at 5% level. Again, the result for working hours is ambiguous. Finally, when selecting the relevant covariates as described on the identification strategy section, the coefficients for DM and RC fall to 5.5 pp. at 10% level and FRC keep on 4pp but it is still non-significant. For working hours, all three estimators drive positive bur remain insignificant. From this exercise we can emphasise the relevance of the covariates groups:, household composition variables like household size and the presence of kids are relevant for the women response to the in-kind transfer.

Other matching methodologies were also tried in order to very the results. The coarsened exact matching procedure (CEM) from Iacus et al. (2009) and the nearest neighbor matching across the variables from Abadie et al. (2004) results are presented in table 27 for the case of participation decision outcome . The CEM procedure, which garantees balanced outcomes, included only 225 observations from the 1108 available for the participation decision<sup>12</sup>. Abadie et al. (2004) procedure allows observations to be included more than once. The results are similiar in all methods, in particular for the Couple-Head result. For both PS Mahalanobis and the covariates matching, the estimators are significant at 10% significance level. The CEM estimate is close in terms of coefficient but is not significant, probably because of the small sample size involved in the method.

A final robustness check is done by including the ECV2003 data in order to use a placebo methodology to check the reliability of the matching methodology. That is, we checked if there were differences before the program start. As we do not have panel data, a “treatment” group was constructed using the most accurate matching methodology between 2003 and 2007 data. In order to implement this placebo test, two steps are required: first, to obtain the treatment group in 2003; second, to do the matching procedure in 2003. For the first step, the treatment group in ECV2007 was matched with ECV2003 data using the subset of covariates that are present in both datasets. As we need a treatment group as similar as possible, the CEM procedure was implemented. This matched subset in ECV2003 is now considered as the new treatment group for the matching “before” the program. In the second step, the same matching procedure used on the main results is applied to the 2003 data. Table 28 summarizes the first step: prematching and postmatching balance. As can be observed, the matching quality is good for the included covariates but half of the original ECV2007 treated observations were not matched. Table 29 presents the results of the second step. For the Single, there is a positive effect that is significant at 10% level. For all the other groups, the effect is not significant. Hence, our results are robust for groups other than Single<sup>13</sup>.

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<sup>12</sup>For the weely working hours outcome, only 17 observations were included in the CEM procedure. As a results, the summarizing table is not presented here.

<sup>13</sup>This test was also done using Mahalanobis Nearest Neighborhood Matching within the Calipers for step 1. As a result, more observations were included for the step 2. Results were the same but with bigger

## 7 Conclusions

*Comedores Comunitarios* attendees give us the opportunity to analyze an in-kind transfer program effect on labor supply. Often, food and nutrition programs have negative effects on labor supply. However, in this case, both significant positive and negative effects were found depending on the type of household. We have shown that labor supply reacts in different ways to alternative combination of covariates that define different family patterns.

If policy makers want to prevent distortions (or enhance some effects) of this type of programs, they should make emphasis in complementary programs for those particular kind of families. Hence, the program design must involve not only the food, but also promote access and attendance to other facilities like childcare, work training and education.

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coefficients. For Couple-Head group, the sign is negative but insignificant (about 4 pp.). Therefore, if there were any pre-treatment difference for this group, our results are underestimating the true positive coefficients. This test can be seen on tables 33 and 33 in the appendix C.2.2

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## A Main Tables

### A.1 Descriptive Information

Table 1: Covariates

Group	Variable	Description	Relevant
Woman	Age		
	(D) Ethnic pertinence	Indigenous groups, San Andrés raizal, ROM or afro community.	✓
	Years of Education		✓
	(D) Handicapped	Presence of any physical limitation that which affects daily performance.	✓
	(D) Economic Sector	(Only on <i>Working Hours</i> as outcome)ISIC Classification: Agriculture, Mines and energy, Industry, Construction, Commerce, Tourism and restaurants, Transport and Communication, Finance, Real Estate, Government, Education, Health, Other social sectors, Other services.	✓
Husband	Age		✓
	Years of Education		✓
	(D) Handicapped	Presence of any physical limitation that which affects daily performance	✓
Household	(D) Calamity	To be affected on the past year by theft, homicidal, kidnapping, extortion or eviction.	
	(D) Chronic Disease	To have a person with a chronic disease in the household.	
	Under 12	Percentage of under 12 in the household.	✓
	(D) Other Handicapped	Presence of any other handicapped person.	✓
	Household Size		✓
Quality of Life	(D) Non tenant	To be the owners of their home or to be occupying it without paying it.	✓
	(D) SISBEN level 1 or 2	To have a member on the household with a Sisben level 1 or 2.	✓
	Other Transfer. per cap.	Amount of transferences by other social programs per capita.	✓
	Quality of Life Index	An aggregate numeric valuation constructed with categorical household amenities.	✓
	(D) Change of residence	To have had changed of residence since 2003.	

(D): Dummy variable



Table 2: Covariates relevance

Variables	Participation Decision		Weekly Working Hours	
	(I)	(II)	(III)	(IV)
	Treatment	Outcome	Treatment	Outcome
Woman Age	-0.0154*** (0.00357)	-0.0496*** (0.00196)	-0.0133 (0.0100)	-0.133*** (0.0404)
Woman Years of Edu.	-0.0996*** (0.0100)	0.0999*** (0.00481)	-0.0788*** (0.0231)	-0.138 (0.0875)
Handicapped Woman	0.172 (0.133)	-0.348*** (0.0799)	0.390 (0.331)	-1.550 (2.021)
Ethnic	0.360* (0.206)	-0.0759 (0.125)	0.271 (0.486)	0.107 (2.027)
Husband Age	0.00124 (0.00394)	0.0127*** (0.00206)	0.0149 (0.0109)	0.00784 (0.0424)
Husband Years of Edu.	-0.0476*** (0.0120)	0.0140*** (0.00531)	-0.0482* (0.0276)	-0.162 (0.0991)
Handicapped Husband	0.273* (0.162)	0.128 (0.0943)	0.596* (0.346)	-4.945** (2.124)
Calamity	0.0911 (0.0913)	0.0285 (0.0516)	0.149 (0.209)	0.125 (0.931)
Chronic Disease	0.0509 (0.0724)	-0.0588 (0.0371)	0.0469 (0.166)	0.515 (0.646)
No tenant	-0.164** (0.0723)	-0.203*** (0.0364)	-0.215 (0.162)	-1.825*** (0.611)
SISBEN Level 1 or 2	0.770*** (0.0677)	-0.0156 (0.0380)	0.901*** (0.165)	-0.727 (0.796)
Other Transfer.	0.681*** (0.0762)	0.433*** (0.0400)	0.862*** (0.176)	0.241 (0.685)
Quality of Life Index	-0.0153** (0.00758)	0.00448 (0.00562)	-0.0276 (0.0177)	-0.0555 (0.117)
Percentage of under 12	0.833*** (0.202)	-1.453*** (0.109)	0.000885 (0.458)	-2.983* (1.713)
Other handicapped	0.206* (0.115)	-0.0646 (0.0683)	-0.0986 (0.286)	-0.628 (1.433)
Household Size	0.0314 (0.0230)	0.0192 (0.0135)	0.122** (0.0510)	-0.0301 (0.257)
Have changed residence	0.101 (0.0750)	0.0303 (0.0404)	-0.282 (0.191)	-0.553 (0.688)
Single Woman	0.341 (0.307)	1.716*** (0.161)	0.770 (0.841)	-1.523 (2.927)
Couple living alone				0
Woman as Household Head	-0.351 (0.275)	1.977*** (0.140)	0.402 (0.734)	0.160 (2.630)
Couple as Household Head	-0.339** (0.156)	0.0386 (0.0691)	-0.148 (0.416)	1.018 (1.316)
Observations	18.754	18.754	4.150	4.172
R-squared				0.045

Robust standard errors in parentheses for IV. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

Economic sector not reported but they are included on columns 3 and 4

I, II and III are logistic regressions. IV is an OLS regression.

Source: Own calculations

Table 3: Descriptive Statistics for Participation Decision

	Single		Couple		Woman Head		Couple Head		Sample	
	<i>n</i> =	<i>n</i> =	<i>n</i> =							
	61	977	63	1563	348	4742	636	10364	1108	17646
	Treated	Control	Treated	Control	Treated	Control	Treated	Control	Treated	Control
Participation Decision	0.43	0.59	0.35	0.51	0.69	0.67	0.52	0.51	0.56	0.56
Woman Age	60.97	52.41	49.56	44.76	44.40	48.89	38.32	40.45	42.11	43.76
Woman Years of Edu.	5.25	9.26	6.05	9.13	6.19	8.54	7.03	9.08	6.61	8.95
Handicapped Woman	0.13	0.10	0.19	0.06	0.09	0.07	0.04	0.03	0.07	0.05
Ethnic	0.03	0.02	0.02	0.01	0.03	0.02	0.03	0.02	0.03	0.02
Husband Age			54.78	48.94			42.86	44.28	27.71	30.35
Husband Years of Edu.			5.54	9.10			6.76	9.01	4.20	6.10
Handicapped Husband			0.17	0.07			0.07	0.04	0.05	0.03
No tenant	0.52	0.54	0.49	0.52	0.42	0.58	0.50	0.55	0.47	0.56
SISBEN Level 1 or 2	0.52	0.16	0.43	0.19	0.63	0.31	0.54	0.27	0.56	0.27
Other Transfer.	0.00	0.01	0.00	0.02	0.63	0.30	0.62	0.36	0.55	0.30
Quality of Life Index	56.24	56.48	56.34	57.30	57.45	57.45	57.40	57.74	57.29	57.55
Percentage of under 12					0.28	0.18	0.29	0.23	0.25	0.18
Other handicapped					0.14	0.09	0.10	0.06	0.10	0.06
Household Size					3.90	3.42	4.82	4.34	4.16	3.70
Single Woman									0.06	0.06
Couple living alone									0.06	0.09
Woman as Household Head									0.31	0.27
Couple as Household Head									0.57	0.59

\*\*\*p<0.001 \*\*p<0.05 \*p<0.1

Source: Own calculations

Table 4: Descriptive Statistics for Weekly Working Hours

	Single		Couple		Woman Head		Couple Head		Sample	
	<i>n</i> =	<i>n</i> =	<i>n</i> =							
	7	217	8	283	83	1354	110	2110	208	3964
	Treated	Control	Treated	Control	Treated	Control	Treated	Control	Treated	Control
Weekly Working Hours	38.12	48.33	42.71	47.90	47.99	48.53	47.75	48.04	47.32	48.20
Woman Age	47.59	42.05	40.35	36.36	40.07	42.16	38.69	38.06	39.61	39.46
Woman Years of Edu.	6.35	11.34	7.53	11.41	6.71	9.62	7.63	10.12	7.22	10.14
Handicapped Woman	0.00	0.05	0.12	0.02	0.09	0.03	0.03	0.02	0.05	0.02
Ethnic	0.12	0.02	0.00	0.02	0.02	0.01	0.02	0.02	0.03	0.02
Agriculture	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01
Mines and energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industry	0.29	0.13	0.29	0.11	0.13	0.16	0.18	0.19	0.17	0.17
Construction	0.00	0.01	0.00	0.02	0.01	0.01	0.00	0.01	0.00	0.01
Commerce	0.29	0.21	0.29	0.25	0.27	0.21	0.24	0.21	0.25	0.21
Tourism and restrnts.	0.12	0.08	0.12	0.07	0.06	0.10	0.09	0.08	0.08	0.09
Transport and Comm.	0.06	0.05	0.00	0.05	0.02	0.04	0.02	0.04	0.02	0.04
Finance	0.06	0.02	0.00	0.03	0.01	0.02	0.01	0.02	0.01	0.02
Real Estate	0.00	0.13	0.12	0.10	0.09	0.11	0.09	0.09	0.09	0.10
Government	0.06	0.07	0.00	0.04	0.02	0.04	0.02	0.04	0.02	0.04
Education	0.00	0.09	0.06	0.09	0.04	0.06	0.04	0.06	0.04	0.06
Health	0.06	0.07	0.00	0.08	0.08	0.06	0.09	0.08	0.08	0.07
Other social sector	0.00	0.06	0.00	0.06	0.04	0.06	0.05	0.05	0.04	0.05
Other services	0.06	0.06	0.12	0.06	0.22	0.10	0.14	0.09	0.17	0.09
Husband Age			46.71	40.62			43.20	41.69	24.81	25.88
Husband Years of Edu.			7.47	10.77			7.08	9.70	4.06	6.13
Handicapped Husband			0.18	0.04			0.07	0.03	0.04	0.02
No tenant	0.65	0.38	0.29	0.39	0.32	0.47	0.49	0.52	0.42	0.48
SISBEN Level 1 or 2	0.24	0.14	0.47	0.16	0.61	0.30	0.52	0.24	0.54	0.25
Other Transfer.	0.00	0.01	0.00	0.02	0.71	0.35	0.65	0.38	0.63	0.32
Quality of Life Index	56.57	56.48	56.45	57.43	57.79	57.49	57.24	57.76	57.40	57.57
Percentage of under 12					0.32	0.20	0.26	0.23	0.26	0.19
Other handicapped					0.11	0.07	0.08	0.05	0.09	0.05
Household Size					3.98	3.31	4.81	4.25	4.25	3.58
Single Woman									0.04	0.06
Couple living alone									0.04	0.08
Woman as Household Head									0.39	0.32
Couple as Household Head									0.54	0.54

\*\*\*p<0.001 \*\*p<0.05 \*p<0.1

Source: Own calculations

Table 5: Balance Status for Participation Decision

	Single						Couple						Single Couple						Couple Head						
	Before			After			Before			After			Before			After			Before			After			
	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	
Woman Age	8.55***	46.16	-1.80	-0.28	-1.50	96.74	4.79***	27.78	-7.27	73.83	-4.49***	-31.39	0.62	4.33	86.21	-1.65***	-11.45	0.47	3.99	77.69	-2.34***	-55.83	-0.01	-0.36	99.31
Woman Years of Edu.	-4.01***	-76.17	0.02	0.31	99.59	-3.08***	-65.06	0.24	5.01	92.30	-2.35***	-55.30	-0.16	-3.66	93.37	-2.34***	-55.83	0.00	2.50	38.65	0.02	0.00	0.00	0.00	0.00
Handicapped Woman	0.03	8.27	0.00	0.00	100.00	0.13***	40.92	-0.03	-10.44	74.49	0.02	8.12	0.01	3.17	60.97	0.02***	8.98	0.00	2.50	38.65	0.01***	7.01	0.01	4.38	44.30
Ethnic	0.01	4.90	0.02	0.02	9.78	-99.39	0.00	0.94	0.00	100.00	0.01	6.70	0.00	2.01	70.06	0.01***	7.01	0.01	4.38	44.30	0.01***	7.01	0.01	4.38	44.30
Husband Age							5.84**	-33.26	-0.51	-2.90	91.29					-2.63***	-10.39	0.66	4.99	53.64					
Husband Years of Edu.							-3.10***	-78.74	-0.10	-2.25	97.14					-1.90***	-37.84	-0.15	-3.74	93.22					
Handicapped Husband							0.16***	30.84	0.02	5.17	83.22					0.02***	8.08	0.00	1.38	86.16					
No tenant	-0.01	-2.55	-0.02	-3.27	-28.38		-0.03	-5.34	-0.02	-3.38	36.78				98.20	-0.08***	-16.37	-0.01	-2.52	76.89					
SISBEN Level 1 or 2	0.36***	82.25	0.20	0.00	100.00	0.24***	53.15	0.03	7.55	85.79	0.32***	66.77	0.00	0.00	100.00	0.29***	61.54	0.00	0.00	100.00					
Other Transfer.	-0.01	-16.41	0.00	0.00	100.00	-0.02	-17.65	0.00	0.00	100.00	0.33***	70.59	-0.01	-2.45	96.53	0.26***	54.08	-0.01	-1.95	96.32					
Quality of Life Index	-0.25	-9.04	-0.25	-9.36	-3.60		-0.96***	-39.30	-0.25	-10.22	74.00				-370.00	-0.26***	-6.31	0.00	-0.13	98.12					
Percentage of under 12							0.11***	47.22	0.01	2.73	94.22					0.07***	34.40	0.00	1.22	95.96					
Other handicapped							0.04***	14.05	0.01	2.74	80.52					0.04***	13.70	0.00	1.16	90.90					
Household Size							0.48***	28.89	0.22*	13.45	53.43					0.46***	26.33	0.12	8.26	74.88					

\*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
Source: Own calculations

Table 6: Balance Status for Weekly Working Hours

	Single						Couple						Single Couple						Couple Head						
	Before			After			Before			After			Before			After			Before			After			
	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	Diff	SB	BR	
Woman Age	8.55***	46.16	-1.80	-0.28	-1.50	96.74	4.79***	27.78	-7.27	73.83	-4.49***	-31.39	0.62	4.33	86.21	-1.65***	-11.45	0.47	3.99	77.69	-2.34***	-55.83	-0.01	-0.36	99.31
Woman Years of Edu.	-4.01***	-76.17	0.02	0.31	99.59	-3.08***	-65.06	0.24	5.01	92.30	-2.35***	-55.30	-0.16	-3.66	93.37	-2.34***	-55.83	0.00	2.50	38.65	0.02	0.00	0.00	0.00	0.00
Handicapped Woman	0.03	8.27	0.00	0.00	100.00	0.13***	40.92	-0.03	-10.44	74.49	0.02	8.12	0.01	3.17	60.97	0.02***	8.98	0.00	2.50	38.65	0.01***	7.01	0.01	4.38	44.30
Ethnic	0.01	4.90	0.02	0.02	9.78	-99.39	0.00	0.94	0.00	100.00	0.01	6.70	0.00	2.01	70.06	0.01***	7.01	0.01	4.38	44.30	0.01***	7.01	0.01	4.38	44.30
Husband Age							5.84**	-33.26	-0.51	-2.90	91.29					-2.63***	-10.39	0.66	4.99	53.64					
Husband Years of Edu.							-3.10***	-78.74	-0.10	-2.25	97.14					-1.90***	-37.84	-0.15	-3.74	93.22					
Handicapped Husband							0.16***	30.84	0.02	5.17	83.22					0.02***	8.08	0.00	1.38	86.16					
No tenant	-0.01	-2.55	-0.02	-3.27	-28.38		-0.03	-5.34	-0.02	-3.38	36.78				98.20	-0.08***	-16.37	-0.01	-2.52	76.89					
SISBEN Level 1 or 2	0.36***	82.25	0.20	0.00	100.00	0.24***	53.15	0.03	7.55	85.79	0.32***	66.77	0.00	0.00	100.00	0.29***	61.54	0.00	0.00	100.00					
Other Transfer.	-0.01	-16.41	0.00	0.00	100.00	-0.02	-17.65	0.00	0.00	100.00	0.33***	70.59	-0.01	-2.45	96.53	0.26***	54.08	-0.01	-1.95	96.32					
Quality of Life Index	-0.25	-9.04	-0.25	-9.36	-3.60		-0.96***	-39.30	-0.25	-10.22	74.00				-370.00	-0.26***	-6.31	0.00	-0.13	98.12					
Percentage of under 12							0.11***	47.22	0.01	2.73	94.22					0.07***	34.40	0.00	1.22	95.96					
Other handicapped							0.04***	14.05	0.01	2.74	80.52					0.04***	13.70	0.00	1.16	90.90					
Household Size							0.48***	28.89	0.22*	13.45	53.43					0.46***	26.33	0.12	8.26	74.88					
Woman Age	8.55***	46.16	-1.80	-0.28	-1.50	96.74	4.79***	27.78	-7.27	73.83	-4.49***	-31.39	1.01	10.00	37.12	-1.65***	-11.45	-0.72	-7.99	54.26					
Woman Years of Edu.	-4.01***	-76.17	0.02	0.31	99.59	-3.08***	-65.06	0.24	5.01	92.30	-2.35***	-55.30	0.09	2.02	97.15	-2.34***	-55.83	0.25	5.74	90.33					
Handicapped Woman	0.03	8.27	0.00	0.00	100.00	0.13***	40.92	0.00	0.00	100.00	0.02	8.12	0.03	11.00	57.26	0.02***	8.98	-0.02	-10.52	17.83					
Ethnic	0.01	4.90	0.00	0.00	100.00	0.00	0.94	0.00	0.00	100.00	0.01	6.70	0.01	8.56	-160.00	0.01**	7.01	0.01	6.52	14.65					
Agriculture	-0.00	-6.40	0.00	0.00	100.00	-0.00	-8.01	0.00	0.00	100.00	-0.00	-2.58	0.00	0.00	100.00	-0.00	-2.55	0.01	10.60	-380.00					
Mines and energy	-0.00	-4.52	0.00	0.00	100.00	-0.00	-3.58	0.00	0.00	100.00	-0.00	-4.11	0.00	0.00	100.00	-0.00	-3.53	0.00	0.00	100.00					
Industry	0.02	7.93	0.20	48.73	-14.21		0.03	13.40	0.20	58.17	-9000.00					0.86	-0.00	-1.53	-10.03	4.20					
Construction	-0.00	-9.06	0.00	0.00	100.00	-0.01	-11.90	0.00	0.00	100.00	0.03**	10.44	-0.06	-13.84	54.35	-0.00	-3.22	0.00	0.00	100.00					
Commerce	-0.02	-7.02	0.00	0.00	100.00	-0.02	-7.77	0.00	0.00	100.00	0.03**	10.44	-0.06	-13.84	54.35	0.02*	5.97	-0.03	-6.43	62.36					
Tourism and restrints.	-0.01	-3.80	0.00	0.00	100.00	0.00	1.72	0.00	0.00	100.00	-0.01	-6.18	0.01	6.08	69.43	-0.00	-1.05	0.01	4.30	22.98					
Transport and Comm.	0.01	6.36	0.00	0.00	100.00	-0.02	-21.40	0.00	0.00	100.00	-0.01	-5.96	0.00	0.00	100.00	-0.01**	-6.90	0.02	12.03	-27.04					
Finance	-0.06**	-36.16	0.00	0.00	100.00	-0.01	-15.26	0.00	0.00	100.00	-0.01	-11.32	0.00	0.00	100.00	-0.01**	-8.43	0.00	0.00	100.00					
Real Estate	-0.01	-9.42	-0.20	-58.42	-380.00		-0.02	-18.39	0.00	-63.26	-360.00					-0.01	-3.62	0.02	7.11	-110.00					
Government	-0.04	-28.82	0.00	0.00	100.00	-0.02	-11.90	0.00	0.00	100.00	-0.01	-6.29	0.03	10.61	100.00	-0.01**	-8.23	0.00	0.00	100.00					
Education	-0.01	-9.42	0.00	0.00	100.00	-0.03	-25.96	0.00	0.00	100.00	0.01	5.45	0.03	10.34	-660.00	-0.01**	-8.93	0.01	3.70	36.66					
Health	-0.03	-24.72	0.00	0.00	100.00	-0.02	-22.32	0.00	0.00	100.00	0.01	5.45	0.03	10.34	-660.00	-0.01**	-8.93	0.01	3.70	36.66					
Other social sector	-0.01	-8.84	0.00	0.00	100.00	0.01	4.90	0.00	0.00	100.00	0.06***	22.91	0.01	3.76	84.67	-0.00	-2.70	0.02	7.17	70.27					
Other services							5.84**	33.26	-2.20	-14.31	50.05					0.03**	14.75	-0.03	-9.38	40.04					
Husband Age							-3.56***	-78.74	0.40	8.28	85.68					-2.63***	-10.99	-0.54	-4.95	81.71					
Husband Years of Edu.							0.10***	30.84	0.00	0.00	100.00					0.02***	8.08	0.02	1.37	98.12					
Handicapped Husband							-0.03	-5.34	0.00	0.00	100.00					-0.08***	-16.37	-0.03	-5.83	-21					

## A.2 Estimation Outputs

Table 7: Full Sample

	Participation Decision		Weekly Working Hours	
	DM	RC	DM	RC
All Sample	0.0144 (0.0220)	0.0125 (0.0203)	-2.0049 (2.1466)	-1.3034 (2.1140)
<i>Tr/Obs</i>	1108/2134	1108/2134	205/397	205/397
Controls		✓		✓

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

*DM*: Difference of means. *RC*: Regression within each group.

*Tr*: Included treated observations. *Obs*: Total included observations.

*Source*: Own calculations

Table 8: Main Results by Household Composition

	Participation Decision			Weekly Working Hours		
	DM	RC	FRC	DM	RC	FRC
Single	-0.0328 (0.0921)	-0.0523 (0.0791)	-0.0368 (0.0838)	-15.4000 (9.9025)	-18.3533 (0.0000)	-15.7412 (9.9385)
<i>Tr/Obs</i>	61/120	61/120	1102/2123	5/10	5/10	192/369
Couple	-0.0339 (0.0907)	-0.0751 (0.0786)	-0.0506 (0.0789)	-6.0000 (10.4642)	4.4629 (0.0000)	-6.1774 (9.2504)
<i>Tr/Obs</i>	59/117	59/117	1102/2123	5/10	5/10	192/369
Single-Head	-0.0376 (0.0365)	-0.0233 (0.0306)	-0.0282 (0.0313)	-2.8250 (3.2900)	-2.4755 (3.3345)	-2.4919 (3.2185)
<i>Tr/Obs</i>	346/654	346/654	1102/2123	80/154	80/154	192/369
Couple-Head	0.0566* (0.0289)	0.0566 ** (0.0283)	0.0580* (0.0286)	2.4190 (3.2284)	2.9701 (3.3009)	2.7323 (3.2451)
<i>Tr/Obs</i>	636/1232	636/1232	1102/2123	105/198	105/198	192/369
Controls		✓	✓		✓	✓

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

*DM*: Difference of means. *RC*: Regression within each group. *FRC*: Regression using the full matched sample.

*Tr*: Included treated observations. *Obs*: Total included observations.

*Source*: Own calculations

Table 9: Full Sample Matching Results for Participation Decision

	Spe1.			Spe2.			Spe3.			Spe4.			Final		
	DM	RC	FRC	DM	RC	FRC	DM	RC	FRC	DM	RC	FRC	DM	RC	FRC
Single	0.0000 (0.0926)	-0.0020 (0.0806)	-0.0009 (0.0820)	0.0000 (0.0926)	-0.0020 (0.0806)	-0.0013 (0.0815)	-0.0164 (0.0942)	-0.0254 (0.0834)	-0.0243 (0.0846)	-0.0492 (0.0952)	-0.0310 (0.0868)	-0.0309 (0.0844)	-0.0328 (0.0921)	-0.0523 (0.0791)	-0.0368 (0.0838)
Couple	-0.1111 (0.0905)	-0.1096 (0.0822)	-0.1097 (0.0829)	0.0161 (0.0888)	0.0193 (0.0748)	0.0134 (0.0763)	-0.1111 (0.0903)	-0.1311 (0.0794)	-0.1257 (0.0789)	-0.0645 (0.0891)	-0.0916 (0.0773)	-0.0846 (0.0770)	-0.0339 (0.0907)	-0.0751 (0.0786)	-0.0506 (0.0789)
Single-Head	-0.0461 (0.0417)	-0.0455 (0.0371)	-0.0456 (0.0374)	-0.0461 (0.0417)	-0.0455 (0.0371)	-0.0456 (0.0371)	-0.0029 (0.0363)	-0.0048 (0.0335)	-0.0054 (0.0338)	0.0029 (0.0363)	0.0075 (0.0317)	0.0059 (0.0326)	-0.0376 (0.0365)	-0.0233 (0.0306)	-0.0282 (0.0313)
Couple-Head	0.0772* (0.0397)	0.0774* (0.0397)	0.0776* (0.0402)	0.0236 (0.0288)	0.0251 (0.0284)	0.0252 (0.0287)	0.0772*** (0.0287)	0.0800*** (0.0282)	0.0818*** (0.0285)	0.0645** (0.0291)	0.0663** (0.0285)	0.0626** (0.0287)	0.0566** (0.0289)	0.0566** (0.0283)	0.0580* (0.0286)
Woman	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Husband							✓	✓	✓	✓	✓	✓	✓	✓	✓
Household Comp.							✓	✓	✓	✓	✓	✓	✓	✓	✓
Quality of Life							✓	✓	✓	✓	✓	✓	✓	✓	✓

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

Table 10: Full Sample Matching Results for Weekly Working Hours

	Spe1.			Spe2.			Spe3.			Spe4.			Final		
	DM	RC	FRC	DM	RC	FRC	DM	RC	FRC	DM	RC	FRC	DM	RC	FRC
Single	3.0000 (12.5019)	-0.2115 (21.0992)	-4.9215 (11.9448)	3.0000 (12.5019)	-0.2115 (21.0992)	-4.9527 (12.9058)	-6.7500 (13.9007)	-23.7660 (0.0000)	-17.5786 (10.5207)	-23.5000 (11.9704)	-40.3866 (0.0000)	-23.1368* (11.5222)	-15.4000 (9.9025)	-18.3533 (0.0000)	-15.7412 (9.9385)
Couple	-25.5714 (9.8025)	-21.9957 (12.3070)	-23.5410** (8.4103)	-14.0000 (10.2372)	-1.9421 (12.8146)	-14.4831 (9.6528)	-0.4000 (10.1272)	-0.7573 (14.7648)	2.3532 (9.5409)	-31.3333 (13.5483)	0.0000 (0.0000)	-28.1106** (10.9718)	-6.0000 (10.4642)	4.4629 (0.0000)	-6.1774 (9.2504)
Single-Head	-2.5122 (2.8253)	-2.2593 (2.8037)	-2.3388 (2.8074)	-2.5122 (2.8253)	-2.2593 (2.8037)	-2.2021 (2.8087)	-1.6049 (3.1353)	-2.1932 (3.6370)	-1.6410 (3.5978)	-1.0000 (3.1644)	-1.9146 (3.3286)	-1.5984 (3.2603)	-2.8250 (3.2900)	-2.4755 (3.3345)	-2.4919 (3.2185)
Couple-Head	1.6789 (2.9092)	1.5798 (2.9302)	1.5464 (2.9207)	0.4312 (2.8283)	0.3205 (2.7855)	0.3663 (2.7624)	-1.9000 (3.0220)	-0.7142 (3.0836)	-1.3695 (3.0031)	1.6422 (3.0722)	2.2059 (3.0923)	2.0007 (2.9749)	2.4190 (3.2284)	2.9701 (3.3009)	2.7323 (3.2451)
Woman	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Husband							✓	✓	✓	✓	✓	✓	✓	✓	✓
Household Comp.							✓	✓	✓	✓	✓	✓	✓	✓	✓
Quality of Life							✓	✓	✓	✓	✓	✓	✓	✓	✓

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

### A.3 Analysis by covariates

#### A.3.1 Participation Decision

Table 11: Overall effect on Participation Decision by Cohorts

Age	Couple-Head	DM	RC	Obs
15-27		-0.0947* (0.0564)	-0.0899* (0.0528)	169
27-32		-0.0360 (0.0599)	-0.0416 (0.0538)	139
32-37		0.0800 (0.0566)	0.0747 (0.0540)	150
37-41		0.0000 (0.0603)	-0.0126 (0.0580)	137
41-47		0.0000 (0.0548)	0.0145 (0.0519)	161
47-55		0.1172** (0.0588)	0.1322** (0.0570)	145
55-97		0.0553 (0.0441)	0.0644 (0.0406)	199
All Cohorts		0.014 (0.022)	0.013 (0.020)	1108

11 observations were lost due to common support.

Robust standard errors in parentheses for RC and FRC. \*\*\* $p < 0.001$  \*\* $p < 0.05$  \* $p < 0.1$

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 12: Overall effect on Participation Decision by Household Covariates

	Household Size			Under 12			
2	-0.023 (0.063)	-0.023 (0.051)	132	0.0 - 33.3	0.040 (0.037)	0.035 (0.033)	375
3	-0.043 (0.047)	-0.041 (0.043)	231	33.3 - 50.0	0.012 (0.036)	0.018 (0.034)	400
4	0.039 (0.045)	0.038 (0.042)	256	50.0 - 83.3	0.013 (0.049)	0.025 (0.046)	227
5+	0.142*** (0.052)	0.149*** (0.049)	197	83.3 - .	-0.051 (0.077)	0.007 (0.061)	98

Robust standard errors in parentheses for RC and FRC. \*\*\* $p < 0.001$  \*\* $p < 0.05$  \* $p < 0.1$

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 13: Overall effect on Participation Decision by Work-Related Covariates

	Years of Education		
0 - 5	0.031 (0.032)	0.042 (0.029)	554
6 - 10	-0.007 (0.042)	0.001 (0.041)	282
11	0.011 (0.052)	-0.004 (0.048)	187
+11	0.063 (0.074)	0.055 (0.070)	80

Robust standard errors in parentheses for RC and FRC. \*\*\* $p < 0.001$  \*\* $p < 0.05$  \* $p < 0.1$

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 14: Overall effect on Participation Decision by Other Covariates

	Change of Residence			Other Transferences			Sisben 1 or 2		
	DM	RC	Obs	DM	RC	Obs	DM	RC	Obs
No	0.0386 (0.0261)	0.0398* (0.0238)	777	-0.0061 (0.0326)	-0.0149 (0.0301)	493	0.0103 (0.0326)	0.0085 (0.0299)	485
Yes	-0.0483 (0.0397)	-0.0524 (0.0373)	331	0.0344 (0.0295)	0.0469* (0.0281)	611	0.0483 (0.0299)	0.0493* (0.0276)	621

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

### A.3.2 Working Hours

Table 15: Overall effect on Weekly Working Hours by Cohorts

Age	Couple-Head		Obs
	DM	RC	
17-35	0.5319 (4.4184)	2.0147 (4.7485)	47
35-41	-2.9730 (4.6160)	-0.3189 (5.4299)	37
41-46.5	3.2821 (5.2584)	4.9099 (5.9690)	39
46.5-55	-2.8000 (4.0745)	0.2554 (4.4905)	50
55-89	-4.9474 (7.2038)	-3.3710 (12.1949)	19
All Cohorts	-2.005 (2.147)	-1.303 (2.114)	205

11 observations were lost due to common support.

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 16: Overall effect on Weekly Working Hours by Household Covariates

	Household Size			Under 12		Obs	
	DM	RC		DM	RC		
2	-6.294 (6.100)	-8.659 (5.115)	17	0.0 - 25.0	0.744 (3.263)	1.121 (3.319)	82
3	3.489 (4.057)	8.478* (4.326)	45	25.0 - 40.0	0.756 (5.005)	0.390 (5.181)	45
4	-6.556 (4.258)	-6.921 (4.671)	45	40.0 - 80.0	-3.947 (5.359)	-1.370 (5.898)	38
5+	1.136 (3.487)	1.651 (3.660)	81	80.0 - .	-11.333** (4.729)	-14.860** (5.883)	30

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 17: Overall effect on Weekly Working Hours by Work-Related Covariates

	Years of Education			Seniority			
	DM	RC	Obs	DM	RC	Obs	
0 – 5	-4.229 (3.367)	-4.606 (3.706)	96	31-49	-3.460 (4.278)	-3.448 (4.862)	50
6 – 10	-2.610 (5.244)	-3.520 (5.407)	41	49-96	-2.411 (4.540)	-2.416 (5.100)	56
11	4.243 (4.034)	2.494 (4.987)	37	96-153	0.295 (4.331)	2.414 (4.907)	44
+11	-3.333 (5.292)	-2.907 (5.422)	24	153-720	0.902 (4.128)	0.869 (5.065)	51

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 18: Overall effect on Weekly Working Hours by Other Covariates

	Change of Residence			Other Transferences			Sisben 1 or 2			Wage Earner		
	DM	RC	Obs	DM	RC	Obs	DM	RC	Obs	DM	RC	Obs
No	-1.1728 (2.5778)	-0.0596 (2.5171)	162	0.2530 (2.7876)	1.1293 (2.9305)	83	-3.3750 (3.1323)	-3.6371 (3.2376)	88	-7.9211* (4.4726)	-8.5929* (4.4770)	76
Yes	0.6667 (4.7423)	-2.9460 (5.6300)	39	-3.1967 (2.9850)	-2.5188 (3.2348)	122	-3.2069 (3.0393)	-2.1378 (2.8673)	116	0.0000 (2.2518)	0.0377 (2.2233)	119

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

### A.3.3 Participation Decision for Single-Head

Table 19: Effect on Participation Decision for Single-Head by Cohorts

Age	Couple-Head		Obs
	DM	RC	
15-29	-0.1458* (0.0791)	-0.1437 (0.0993)	48
29-35	0.0889 (0.0718)	0.1044 (0.0764)	45
35-40	0.0000 (0.0634)	0.0013 (0.0736)	54
40-44	-0.0789 (0.0802)	-0.0906 (0.0781)	38
44-49	-0.0952 (0.0906)	-0.0789 (0.0927)	42
49-55	0.0455 (0.1069)	0.0884 (0.1060)	44
55-97	0.1111 (0.0729)	0.1174* (0.0662)	63
All Cohorts	-0.038 (0.036)	-0.023 (0.031)	346

11 observations were lost due to common support.

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 20: Effect on Participation Decision for Single-Head by Household Covariates

	Household Size			Under 12			
	DM	RC	Obs	DM	RC	Obs	
3	-0.100 (0.084)	-0.100 (0.064)	70	0.0 – 33.3	0.017 (0.067)	-0.007 (0.054)	115
4	-0.049 (0.067)	-0.045 (0.057)	102	33.3 – 50.0	-0.027 (0.061)	-0.013 (0.050)	111
5	-0.057 (0.072)	-0.028 (0.065)	70	50.0 – 83.3	-0.157** (0.076)	-0.130* (0.069)	70
6+	0.102 (0.102)	0.084 (0.080)	49	83.3 – .	-0.087 (0.096)	-0.077 (0.089)	46

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
 DM: Difference of means. RC: Regression within each group.  
 Source: Own calculations

Table 21: Effect on Participation Decision for Single-Head by Work-Related Covariates

	Years of Education			
	DM	RC	Obs	
0 – 5	-0.026 (0.053)	-0.026 (0.053)	193	0.002 (0.042)
6 – 10	-0.049 (0.065)	-0.049 (0.065)	81	-0.032 (0.062)
11	-0.070 (0.075)	-0.070 (0.075)	43	-0.069 (0.071)
+11	0.000 (0.101)	0.000 (0.101)	27	0.021 (0.098)

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
 DM: Difference of means. RC: Regression within each group.  
 Source: Own calculations

Table 22: Effect on Participation Decision for Single-Head by Other Covariates

	Change of Residence			Other Transferences			Sisben 1 or 2		
	DM	RC	Obs	DM	RC	Obs	DM	RC	Obs
No	-0.0290 (0.0447)	-0.0188 (0.0372)	241	-0.0079 (0.0646)	-0.0140 (0.0570)	127	-0.0313 (0.0580)	-0.0020 (0.0482)	128
Yes	-0.0577 (0.0620)	-0.0724 (0.0624)	104	-0.0461 (0.0428)	-0.0390 (0.0362)	217	-0.0688 (0.0466)	-0.0559 (0.0391)	218

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
 DM: Difference of means. RC: Regression within each group.  
 Source: Own calculations

### A.3.4 Participation Decision for Couple-Head

Table 23: Effect on Participation Decision for Couple-Head by Cohorts

Age	Couple-Head		DM	RC	Obs
15-26			-0.0808 (0.0717)	-0.0598 (0.0692)	99
26-31			-0.0761 (0.0774)	-0.0654 (0.0744)	92
31-36			0.0319 (0.0746)	0.0566 (0.0737)	94
36-40			0.0825 (0.0751)	0.0844 (0.0759)	97
40-45			0.0854 (0.0790)	0.0934 (0.0788)	82
45-55			0.2396*** (0.0733)	0.2508*** (0.0709)	96
55-97			0.0172 (0.0867)	-0.0139 (0.0855)	58
All Cohorts			0.057* (0.029)	0.057** (0.028)	636

11 observations were lost due to common support.

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 24: Effect on Participation Decision for Couple-Head by Household Covariates

	Household Size			Under 12			
3	-0.039 (0.064)	-0.037 (0.063)	128	0.0 - 28.6	0.030 (0.063)	0.045 (0.059)	135
4	0.087 (0.054)	0.084 (0.053)	183	28.6 - 40.0	-0.006 (0.055)	0.005 (0.055)	171
5	0.152** (0.060)	0.158*** (0.057)	145	40.0 - 83.3	0.018 (0.055)	0.033 (0.055)	171
6+	-0.018 (0.057)	-0.007 (0.057)	170	83.3 - .	0.066 (0.060)	0.060 (0.058)	152

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 25: Effect on Participation Decision for Couple-Head by Work-Related Covariates

	Years of Education		
0 - 5	0.007 (0.044)	0.017 (0.043)	284
6 - 10	0.056 (0.055)	0.058 (0.055)	178
11	0.008 (0.064)	-0.003 (0.062)	129
+11	0.000 (0.108)	-0.007 (0.109)	40

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group.

Source: Own calculations

Table 26: Effect on Participation Decision for Couple-Head by Other Covariates

	Change of Residence			Other Transferences			Sisben 1 or 2		
	DM	RC	Obs	DM	RC	Obs	DM	RC	Obs
No	0.0785** (0.0351)	0.0827** (0.0343)	433	0.0415 (0.0464)	0.0479 (0.0446)	241	0.0309 (0.0423)	0.0313 (0.0415)	291
Yes	-0.0493 (0.0522)	-0.0510 (0.0516)	203	0.0689* (0.0375)	0.0683* (0.0374)	392	0.0378 (0.0398)	0.0330 (0.0390)	344

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

*DM*: Difference of means. *RC*: Regression within each group.

*Source*: Own calculations

## A.4 Robustness Checks

### A.4.1 Other matching methods

Table 27: Covariates Matching and CEM procedures

	Spe. 1		Spe. 2		Spe. 3		Spe. 4		Spe. 5		
	Covariates	CEM	Covariates	CEM	Covariates	CEM	Covariates	CEM	Covariates	CEM	
Single	-0.0538 (0.0734)	-0.0341 (0.0692)	-0.0538 (0.0734)	-0.0341 (0.0692)	-0.0628 (0.0789)	-0.0241 (0.0750)	-0.0984 (0.0811)	-0.0459 (0.1184)	-0.0984 (0.0751)	-0.0372 (0.0945)	PS Maha. -0.0328 (0.0921)
Couple	-0.0751 (0.0703)	0.0363 (0.0648)	0.0476 (0.0725)	-0.0993 (0.1183)	-0.0952 (0.0792)	-0.1286 (0.1504)	-0.0635 (0.0780)	-0.1111 (0.1944)	0.0476 (0.0748)	-0.0945 (0.1723)	-0.0339 (0.0907)
Single-Head	-0.0130 (0.0259)	-0.0070 (0.0258)	-0.0130 (0.0259)	-0.0070 (0.0258)	-0.0015 (0.0311)	-0.0139 (0.0355)	-0.0216 (0.0318)	-0.0720 (0.0658)	-0.0158 (0.0319)	-0.0555 (0.0455)	-0.0375 (0.0366)
Couple-Head	0.0363* (0.0216)	0.0336 (0.0206)	0.0053 (0.0267)	0.0419* (0.0245)	0.0726*** (0.0280)	0.0744 (0.0456)	0.0118 (0.0284)	0.1059 (0.1041)	0.0472* (0.0269)	0.0490 (0.0703)	0.0550* (0.0289)
Woman	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Husband			✓	✓	✓	✓	✓	✓	✓	✓	✓
Household Comp.				✓	✓	✓	✓	✓	✓	✓	✓
Quality of Life					✓	✓	✓	✓	✓	✓	✓
Matched Obs.	1108	1086	1108	893	1108	390	1108	110	1108	225	1108

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.  
Source: Own calculations

## A.4.2 Placebo

Table 28: Step 1: Matching between 2003 and 2007 I

	Before		After		BR
	Diff	SB	Diff	SB	
Woman Age	2.07 ***	12.96	0.00	0.00	100.00
Woman Years of Edu.	-1.17 ***	-26.94	0.00	0.00	100.00
Ethnic	-0.01 **	-12.95	0.00	0.00	100.00
No tenant	-0.06 ***	-11.42	0.00	0.00	100.00
SISBEN Level 1 or 2	0.10 ***	21.75	0.00	0.00	100.00
Other Transfer.	0.01	1.36	0.00	0.00	100.00
Percentage of under 12	-0.04 ***	-17.65	0.00	0.00	100.00
Household Size	-1.25 ***	-85.66	0.00	0.00	100.00
Single Woman	0.16 ***	48.31	0.00	0.00	100.00
Couple living alone	-0.04 ***	-18.27	0.00	0.00	100.00
Woman as Household Head	0.26 ***	54.84	0.00	0.00	100.00
Couple as Household Head	-0.37 ***	-79.74	0.00	0.00	100.00

\*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
*Source:* Own calculations

Table 29: ECV2003 Placebo Matching I

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
DM	0.1058 (0.1137)		0.0500 (0.1734)		-0.0524 (0.0597)		-0.0261 (0.0799)		-0.0192 (0.0453)	
RC	0.1189 * (0.0651)		0.0501 (0.1629)		-0.0440 (0.0543)		-0.0228 (0.0775)		-0.0144 (0.0371)	
FRC	0.1192 * (0.0644)		0.0757 (0.1620)		-0.0445 (0.0543)		-0.0089 (0.0809)			
N. obs	104 of 104		20 of 20		229 of 229		115 of 115		468 of 468	
Woman Age	1.43	8.72	0.10	0.59	0.47	3.32	-0.03	-0.21	0.55	3.37
Woman Years of Edu.	-0.09	-1.85	0.00	0.00	-0.14	-3.34	-0.06	-1.62	-0.10	-2.40
Ethnic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Husband Age	0.00	0.00	0.00	0.00	0.01	1.75	0.00	0.00	-0.56	-2.63
Husband Years of Edu.			0.00	0.00			0.00	0.00	-0.04	-0.87
No tenant			0.00	0.00			0.00	0.00	0.00	0.86
SISBEN Level 1 or 2							0.00	0.00	0.00	0.00
Other Transfer.	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00
Percentage of under 12	0.00	0.00			0.00	0.00			-0.00	-0.30
Household Size					-0.00	-0.60			-0.00	-0.30
Single Woman					-0.01	-0.68			0.00	0.00
Couple living alone									0.00	0.00
Woman as Household Head									0.00	0.00
Couple as Household Head									0.00	0.00

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (SB) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
*DM:* Difference of means. *RC:* Regression within each group. *FRC:* Regression using the full matched sample.  
*Source:* Own calculations

# B Figures

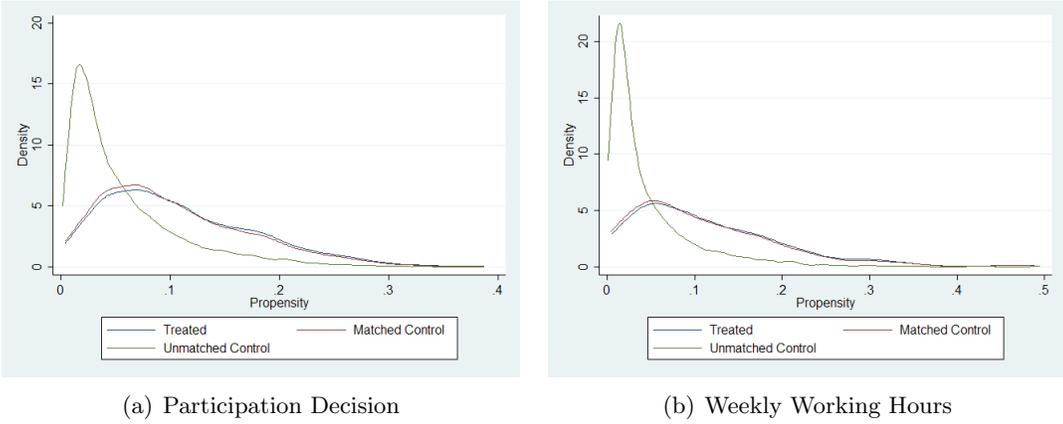
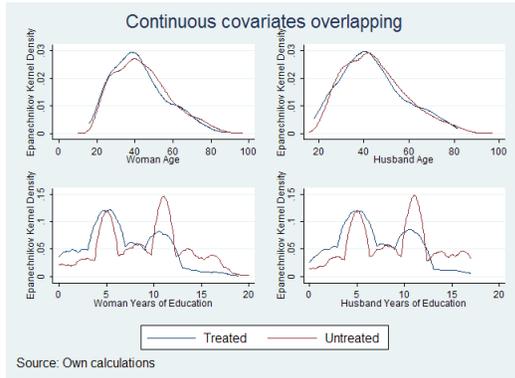
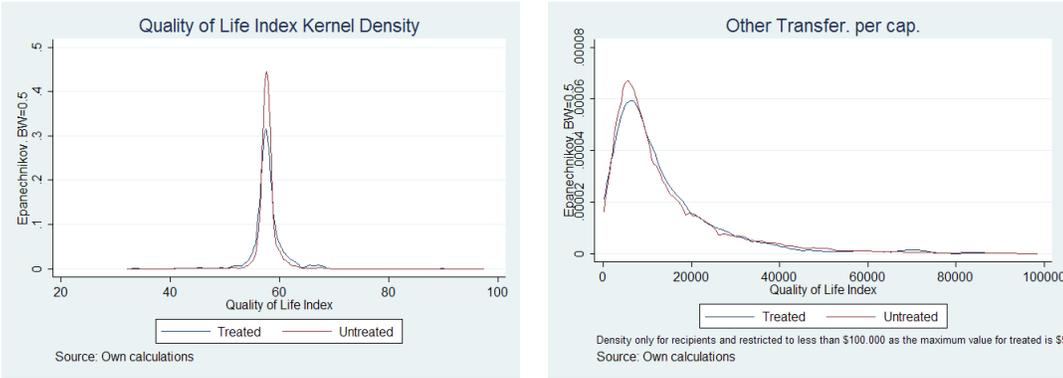


Figure 1: Estimated Propensity Scores



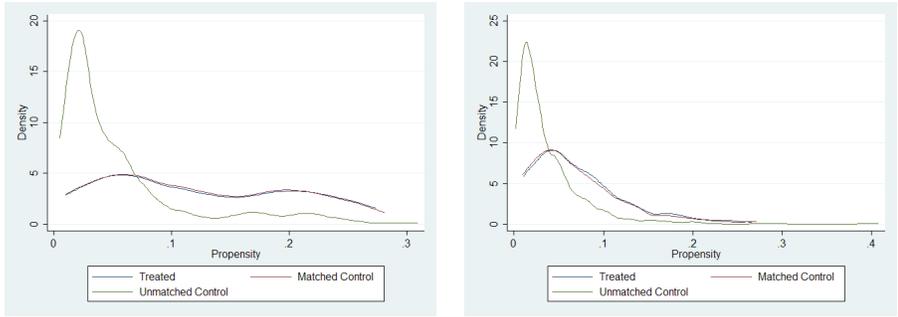
(a) Continuous Covariates Overlapping



(b) Quality of Life index

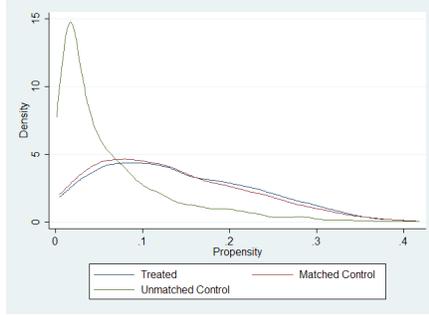
(c) Other Transfers Per Capita Overlapping

Figure 2: Covariates Overlapping

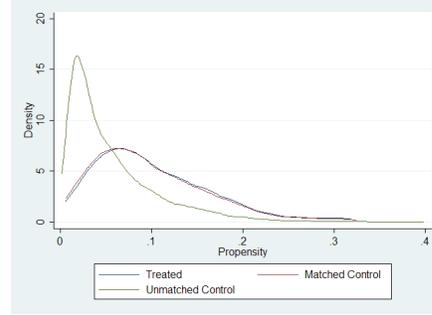


(a) Single Woman

(b) Single Couple

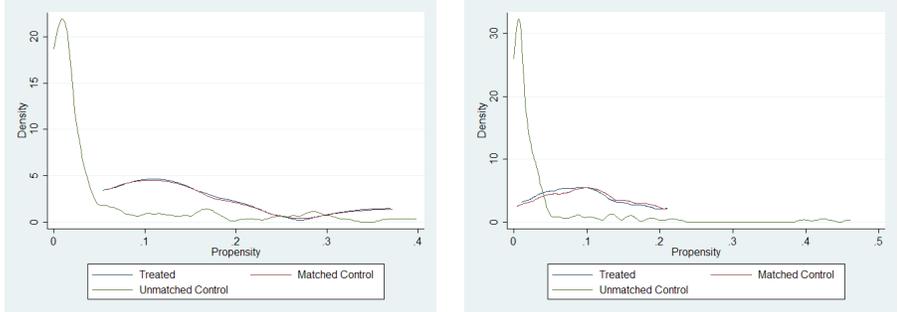


(c) Single Head



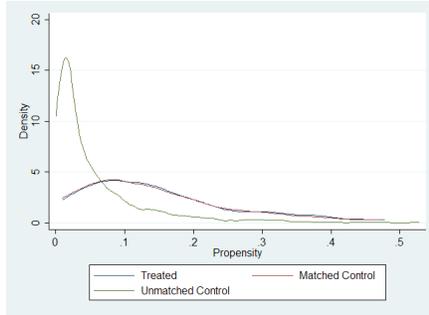
(d) Couple Head

Figure 3: Propensity Score for Participation Decision

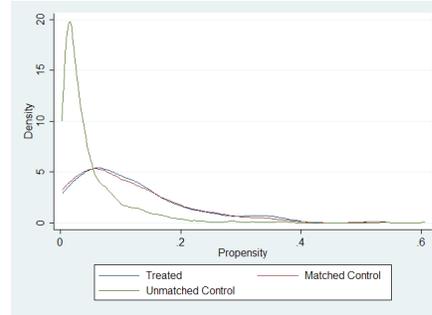


(a) Single Woman

(b) Single Couple



(c) Single Head



(d) Couple Head

Figure 4: Propensity Score for Weekly Working Hours

## C Appendix

### C.1 Quality of Life Index

SIRBE form includes information about SISBEN II score; however, that information is not available in the ECV07 data. First, as this score distribution may be different when analyzing treated and untreated units, it is necessary to construct a similar indicator. Second, as from its level people may access or not to some benefits like health care of cash transfers, the decision process may be different especially between those who have the first two levels and the upper levels and who were not surveyed. Therefore, a similar index was constructed using the same methodology as the SISBEN II index: first, apply the SAS PRINQUAL procedure which quantifies qualitative variables by optimizing the covariance matrix (maximize the total variance) but preserving the order structure defined in categorical variables; second, use principal components analysis in order to give a weight to each variable in the index; third, the resulting index is normalized between 1 to 100. However, as the covariates must not be affected by the treatment, variables like durable goods possession and labor situation of household members were excluded. Additionally, education level of household head and his companion were excluded too as they are already direct matching variables. Results are resumed on table 30. Although a similar index was constructed and included, the SISBEN levels must be included as it directly determines the familiar budget restriction.

Table 30: Principal components analysis result for quality of life index

<b>Variables</b>	<b>1<sup>st</sup> eigenvector</b>
Days with water access per week	0.159379
Land telephonic service	0.208753
Where food is cooked	0.145512
Aqueduct service	0.324446
Type of water for cooking	0.464995
Residual dispose system	0.416199
Sanitary Service	0.445745
Electricity Service	0.204479
Overcrowding	-0.139087
Wall materials	0.252864
Floor materials	0.202683
Housing type	0.224216

*Source:* Own calculations

## C.2 Additional Robustness Checks

### C.2.1 LNLLS specification for the PS

In order to check if the logit specification of the propensity score is the best option, they were compared against the local nonlinear least squares estimation model (LNLLS) using Blevins and Khan (2009) routine for Stata based on Khan (2006). The LNLLS model is a binary response model that allows heteroskedastic distributions. As we want to enhance the predictability, the comparison was made using the well-known receiver operating characteristic (ROC) analysis. The following tables summarize the ROC area from the predictions of both the logit and the LNLLS predictions: the greater area, the better forecasting ability of the model. As a result, the logit model gave the best results so its predictions were used as the propensity score for the matching procedures.

Table 31: Logit against LNLLS

	Logit	LNLLS
Treatment Status	0.7539 (0.0071)	0.5410 (0.0065)
Treatment Status for Workers	0.7855 (0.0160)	0.5582 (0.0152)

Calculated ROC Area Analysis  
*Source:* Own calculations

### C.2.2 Placebo Test II

The placebo test presented in section 6.3 was done using Mahalanobis Nearest Neighborhood Matching within the Calipers for step 1. Results are presented in the following tables:

Table 32: Step 1: Matching between 2003 and 2007 II

	Before		After		BR
	Diff	SB	Diff	SB	
Woman Age	-2.30 ***	-16.12	-0.00	-0.03	99.82
Woman Years of Edu.	-1.94 ***	-46.56	-0.09	-2.05	95.40
Ethnic	0.02 ***	16.58	0.00	0.00	100.00
No tenant	-0.10 ***	-19.18	0.22	0.90	91.62
SISBEN Level 1 or 2	0.37 ***	81.98	-0.06	-1.12	96.50
Other Transfer.	0.35 ***	79.22	-0.00	-0.36	97.94
Percentage of under 12	0.06 ***	29.00	-0.00	-0.20	99.74
Household Size	0.35 ***	20.49	0.00	0.00	100.00
Single Woman	-0.00	-2.06	0.00	1.41	94.89
Couple living alone	-0.03 ***	-10.16	0.09	4.95	76.91
Woman as Household Head	0.06 ***	12.44	0.00	0.39	68.52
Couple as Household Head	-0.02 **	-5.07	0.00	0.00	100.00

\*\*\*p<0.001 \*\*p<0.05 \*p<0.1

*Source:* Own calculations

Table 33: ECV2003 Placebo Matching II

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	0.1875	*	-0.0370		-0.0073		-0.0481		-0.0359	
	(0.1065)		(0.0982)		(0.0494)		(0.0333)		(0.0263)	
RC	0.1965	**	-0.0445		-0.0064		-0.0460		-0.0347	
	(0.0971)		(0.0843)		(0.0439)		(0.0328)		(0.0247)	
FRC	0.1964	*	-0.0557		-0.0082		-0.0484			
	(0.0958)		(0.0861)		(0.0446)		(0.0330)			
N. obs	48 of 48		54 of 55		275 of 275		540 of 540		918 of 918	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	1.00	6.08	0.04	0.24	0.01	0.10	0.26	2.04	0.21	1.52
Woman Years of Edu.	-0.02	-0.43	0.17	3.80	0.06	1.53	-0.12	-3.09	-0.05	-1.11
Ethnic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Husband Age	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-1.86	0.85	3.55
Husband Years of Edu.			0.00	0.00			0.01	2.05	-0.14	-2.80
No tenant			0.00	0.00			0.00	0.00	-0.01	-1.10
SISBEN Level 1 or 2							0.00	0.23	0.00	0.98
Other Transfer.	0.00	0.00			-0.00	-0.81	0.06	4.14	-0.00	-0.24
Percentage of under 12	0.00	0.00			-0.00	-0.80			-0.00	-0.17
Household Size					0.00	0.73			0.05	3.17
Single Woman					0.05	3.19			0.00	0.00
Couple living alone									0.00	0.00
Woman as Household Head									0.00	0.00
Couple as Household Head									0.00	0.00

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (SB) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

### C.3 Additional Tables

Table 34: Spe.1, Woman Covariates for Labor Market Participation Decision

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	0.0000 (0.0926)		-0.1111 (0.0905)		-0.0461 (0.0417)		0.0772 * (0.0397)		0.0298 (0.0280)	
RC	-0.0020 (0.0806)		-0.1096 (0.0822)		-0.0455 (0.0371)		0.0774 * (0.0397)		0.0302 (0.0269)	
FRC	-0.0009 (0.0820)		-0.1097 (0.0829)		-0.0456 (0.0374)		0.0776 * (0.0402)			
N. obs	61 of 61		63 of 63		347 of 348		635 of 636		1106 of 1108	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	-0.15	-0.90	0.13	0.80	0.04	0.29	0.05	0.37	0.04	0.28
Woman Years of Edu.	0.00	0.00	-0.05	-1.07	-0.02	-0.42	-0.01	-0.31	-0.02	-0.37
Handicapped Woman	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethnic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Single Woman									0.00	0.00
Couple living alone									0.00	0.00
Woman as Household Head									0.00	0.00
Couple as Household Head									0.00	0.00

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (BS) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

Table 35: Spe.2, Woman and Husband Covariates for Labor Market Participation Decision

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	0.0000 (0.0926)		0.0161 (0.0888)		-0.0461 (0.0417)		0.0236 (0.0288)		-0.0108 (0.0230)	
RC	-0.0020 (0.0806)		0.0193 (0.0748)		-0.0455 (0.0371)		0.0251 (0.0284)		-0.0110 (0.0213)	
FRC	-0.0013 (0.0815)		0.0134 (0.0763)		-0.0456 (0.0371)		0.0252 (0.0287)			
N. obs	61 of 61		62 of 63		347 of 348		635 of 636		1107 of 1108	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	-0.15	-0.90	-0.56	-3.57	0.04	0.29	0.19	1.46	0.08	0.58
Woman Years of Edu.	0.00	0.00	-0.13	-2.90	-0.02	-0.42	-0.06	-1.45	-0.05	-1.12
Handicapped Woman	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.38
Ethnic	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-1.09	-0.00	-0.63
Husband Age			0.63	3.03			0.33	1.68	0.22	0.93
Husband Years of Edu.			-0.21	-4.35			-0.07	-1.52	-0.05	-1.06
Handicapped Husband			-0.02	-5.41			0.00	0.73	0.00	0.00
Single Woman									0.00	0.00
Couple living alone									0.00	0.00
Woman as Household Head									0.00	0.00
Couple as Household Head									0.00	0.00

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (BS) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

Table 36: Spe.3, Woman, Husband and Household Comp. for Labor Market Participation Decision

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	-0.0164 (0.0942)		-0.1111 (0.0903)		-0.0029 (0.0363)		0.0772 *** (0.0287)		0.0570 *** (0.0219)	
RC	-0.0254 (0.0834)		-0.1311 (0.0794)		-0.0048 (0.0335)		0.0800 *** (0.0282)		0.0526 ** (0.0206)	
FRC	-0.0243 (0.0846)		-0.1257 (0.0789)		-0.0054 (0.0338)		0.0818 *** (0.0285)			
N. obs	61 of 61		63 of 63		347 of 348		635 of 636		1105 of 1108	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	-0.74	-4.48	-2.24	-14.14	-0.19	-1.38	0.66	5.01	0.16	1.14
Woman Years of Edu.	-0.02	-0.34	-0.13	-2.86	0.16	3.89	-0.06	-1.49	0.01	0.32
Handicapped Woman	0.00	0.00	0.00	0.00	0.00	1.13	0.00	0.75	0.00	0.41
Ethnic	0.00	0.00	0.00	0.00	0.01	4.00	0.00	1.09	0.00	1.27
Husband Age			-1.97	-9.47			0.88	4.51	0.35	1.46
Husband Years of Edu.			-0.21	-4.28			-0.12	-2.48	-0.08	-1.51
Handicapped Husband			0.02	5.32			0.00	0.73	0.00	0.48
Calamity	0.00	0.00	-0.03	-9.11	0.01	3.82	-0.00	-0.96	0.00	0.30
Chronic Disease	0.00	0.00	-0.06	-13.22	0.00	0.62	-0.00	-0.68	-0.01	-1.10
Percentage of under 12					0.01	5.08	0.00	0.18	0.00	1.74
Other handicapped					-0.00	-0.97	0.01	2.33	0.00	1.04
Household Size					0.12	7.03	0.07	4.39	0.08	4.51
Single Woman									0.00	0.02
Couple living alone									0.00	0.02
Woman as Household Head									0.00	0.06
Couple as Household Head									-0.00	-0.08

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (SB) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
*DM*: Difference of means. *RC*: Regression within each group. *FRC*: Regression using the full matched sample.  
*Source*: Own calculations

Table 37: Spe.4, Woman, Husband, Household Comp. and QoL for Labor Market Participation Decision

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	-0.0492 (0.0952)		-0.0645 (0.0891)		0.0029 (0.0364)		0.0645 ** (0.0291)		0.0235 (0.0221)	
RC	-0.0310 (0.0868)		-0.0916 (0.0773)		0.0075 (0.0317)		0.0663 ** (0.0285)		0.0198 (0.0207)	
FRC	-0.0309 (0.0844)		-0.0846 (0.0770)		0.0059 (0.0322)		0.0626 ** (0.0287)			
N. obs	61 of 61		62 of 63		347 of 348		636 of 636		1108 of 1108	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	1.48	8.97	-0.34	-2.14	0.09	0.62	0.22	1.69	0.22	1.52
Woman Years of Edu.	0.08	1.72	0.31	6.89	-0.04	-1.04	-0.02	-0.42	-0.00	-0.04
Handicapped Woman	0.02	5.73	-0.03	-10.10	0.01	2.25	0.00	1.50	0.00	1.15
Ethnic	0.02	10.52	0.00	0.00	0.01	4.00	0.00	1.08	0.00	2.52
Husband Age			-0.19	-0.93			0.77	3.93	0.43	1.80
Husband Years of Edu.			-0.10	-2.01			-0.07	-1.42	-0.04	-0.88
Handicapped Husband			0.05	16.23			0.00	1.46	0.00	2.31
Calamity	0.00	0.00	0.00	0.00	0.04	10.70	0.01	1.92	0.02	4.71
Chronic Disease	-0.03	-7.25	-0.06	-13.43	0.03	5.54	0.00	0.34	0.00	0.77
No tenant	0.00	0.00	-0.05	-9.66	-0.01	-1.16	-0.00	-0.63	-0.01	-1.27
SIBEN Level 1 or 2	0.00	0.00	0.02	3.39	-0.00	-0.62	-0.00	-0.66	-0.00	-0.38
Other Transfer.	0.00	0.00	0.00	0.00	-0.01	-2.44	-0.01	-2.66	-0.01	-2.27
Quality of Life Index	-0.26	-11.75	-0.29	-10.20	-0.05	-1.55	0.01	0.15	-0.04	-1.03
Percentage of under 12					0.01	2.60	0.00	0.50	0.00	1.13
Other handicapped					0.02	7.78	0.01	2.90	0.01	4.35
Household Size					0.21*	12.69	0.14	8.48	0.15*	8.33
Have changed residence					0.02	3.88	0.02	3.86	0.01	3.26
Single Woman									0.00	0.00
Couple living alone									0.00	0.00
Woman as Household Head									0.00	0.00
Couple as Household Head									0.00	0.00

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (SB) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
*DM*: Difference of means. *RC*: Regression within each group. *FRC*: Regression using the full matched sample.  
*Source*: Own calculations

Table 38: Spe.5, Relevant Covariates for Labor Market Participation Decision

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	-0.0328 (0.0921)		-0.0339 (0.0907)		-0.0376 (0.0365)		0.0566 * (0.0289)		0.0144 (0.0220)	
RC	-0.0523 (0.0791)		-0.0751 (0.0786)		-0.0233 (0.0306)		0.0566 ** (0.0283)		0.0125 (0.0203)	
FRC	-0.0368 (0.0838)		-0.0506 (0.0789)		-0.0282 (0.0313)		0.0580 * (0.0286)			
N. obs	61 of 61		59 of 63		346 of 348		636 of 636		1108 of 1108	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	-0.28	-1.69	-1.25	-7.92	0.62	4.39	0.47	3.60	0.38	2.68
Woman Years of Edu.	0.02	0.34	0.24	5.34	-0.14	-3.35	-0.01	-0.34	-0.04	-0.91
Handicapped Woman	0.00	0.00	-0.03	-10.61	0.01	4.52	0.00	2.26	0.00	1.92
Ethnic	0.02	10.52	0.00	0.00	0.00	0.00	0.01	4.33	0.00	3.16
Husband Age			-0.51	-2.45			0.66	3.39	0.35	1.48
Husband Years of Edu.			-0.10	-2.11			-0.15	-3.20	-0.09	-1.86
Handicapped Husband			0.02	5.68			0.00	1.46	0.00	1.39
No tenant	-0.02	-3.28	-0.02	-3.39	0.00	0.58	-0.01	-2.52	-0.01	-1.64
SISBEN Level 1 or 2	0.00	0.00	0.03	7.12	0.00	0.00	0.00	0.00	0.00	0.39
Other Transfer.	0.00	0.00	0.00	0.00	-0.01	-1.84	-0.01	-2.00	-0.01	-1.71
Quality of Life Index	-0.25	-11.36	-0.25	-8.64	-0.04	-1.16	-0.01	-0.13	-0.04	-1.04
Percentage of under 12					0.01	2.46	0.00	1.18	0.00	1.46
Other handicapped					0.01	2.93	0.00	1.16	0.00	1.68
Household Size					0.21	12.38	0.12	7.50	0.14*	7.74
Single Woman									0.00	0.00
Couple living alone									0.00	0.00
Woman as Household Head									0.00	0.00
Couple as Household Head									0.00	0.00

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (SB) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

Table 39: Spe.1, Woman Covariates for Weekly Working Hours

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	3.0000 (12.5019)		-25.5714 (9.8025)		-2.5122 (2.8253)		1.6789 (2.9092)		-1.6154 (2.0290)	
RC	-0.2115 (21.0992)		-21.9957 (12.3070)		-2.2593 (2.8037)		1.5798 (2.9302)		-1.4174 (2.0818)	
FRC	-4.9215 (11.9448)		-23.5410 ** (8.4103)		-2.3388 (2.8074)		1.5464 (2.9207)			
N. obs	5 of 7		7 of 8		82 of 83		109 of 110		208 of 208	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	-7.60	-46.19	5.57	35.20	0.30	2.17	0.13	0.97	0.20	1.37
Woman Years of Edu.	2.40	50.37	-1.43	-32.13	-0.15	-3.53	0.01	0.22	-0.04	-1.06
Handicapped Woman	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethnic	0.00	0.00	0.00	0.00	0.01	8.46	0.00	0.00	0.00	3.43
Agriculture	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mines and energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industry	0.20	73.84	0.00	0.00	-0.01	-4.66	-0.03	-10.55	-0.01	-5.64
Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commerce	-0.20	-70.00	0.00	0.00	-0.01	-3.77	-0.01	-3.09	-0.01	-4.86
Tourism and restrnts.	0.00	0.00	0.00	0.00	0.01	6.40	0.00	0.00	0.00	2.61
Transport and Comm.	0.00	0.00	0.00	0.00	0.00	0.00	0.02	15.83	0.01	8.40
Finance	0.20	173.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.85
Real Estate	0.00	0.00	-0.14	-74.73	-0.01	-5.89	0.00	0.00	-0.01	-4.99
Government	-0.20	-160.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-4.40
Education	0.00	0.00	0.14	97.68	0.00	0.00	0.01	6.39	0.01	6.74
Health	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other social sector	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other services	0.00	0.00	0.00	0.00	0.01	4.56	0.01	4.19	0.01	4.26
Single Woman									0.00	0.00
Couple living alone									0.00	0.00
Woman as Household Head									0.00	0.00
Couple as Household Head									0.00	0.00

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (SB) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

Table 40: Spe.2, Woman and Husband Covariates for Weekly Working Hours

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	3.0000 (12.5019)		-14.0000 (10.2372)		-2.5122 (2.8253)		0.4312 (2.8283)		-0.6346 (1.9445)	
RC	-0.2115 (21.0992)		-1.9421 (12.8146)		-2.2593 (2.8037)		0.3205 (2.7855)		-0.3693 (1.9453)	
FRC	-4.9527 (12.9058)		-14.4831 (9.6528)		-2.2021 (2.8087)		0.3663 (2.7624)			
N. obs	5 of 7		5 of 8		82 of 83		109 of 110		208 of 208	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	-7.60	-46.19	2.00	12.63	0.30	2.17	0.37	2.78	0.18	1.28
Woman Years of Edu.	2.40	50.37	-1.60	-35.99	-0.15	-3.53	0.15	3.56	0.04	0.95
Handicapped Woman	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethnic	0.00	0.00	0.00	0.00	0.01	8.46	0.00	0.00	0.01	3.46
Agriculture	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mines and energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industry	0.20	73.84	0.00	0.00	-0.01	-4.66	-0.03	-10.55	-0.01	-5.69
Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commerce	-0.20	-70.00	0.20	70.48	-0.01	-3.77	-0.04	-12.37	-0.02	-8.18
Tourism and restrnts.	0.00	0.00	0.00	0.00	0.01	6.40	-0.01	-4.85	0.00	0.00
Transport and Comm.	0.00	0.00	0.00	0.00	0.00	0.00	0.02	15.83	0.01	8.48
Finance	0.20	173.55	0.00	0.00	0.00	0.00	0.00	0.00	0.01	5.90
Real Estate	0.00	0.00	-0.20	-100.00	-0.01	-5.89	0.01	4.68	-0.00	-2.52
Government	-0.20	-160.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-4.44
Education	0.00	0.00	0.00	0.00	0.00	0.00	0.01	6.39	0.00	3.40
Health	0.00	0.00	0.00	0.00	0.00	0.00	0.01	4.97	0.01	2.73
Other social sector	0.00	0.00	0.00	0.00	0.00	0.00	0.03	18.13	0.01	10.21
Other services	0.00	0.00	0.00	0.00	0.01	4.56	0.00	0.00	0.01	2.15
Husband Age			-2.80	-13.47			0.32	1.65	0.10	0.44
Husband Years of Edu.			-1.40	-29.02			0.07	1.54	0.00	0.10
Handicapped Husband			0.00	0.00			0.00	0.00	0.00	0.00
Single Woman									0.00	0.00
Couple living alone									0.00	0.00
Woman as Household Head									0.00	0.00
Couple as Household Head									0.00	0.00

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (SB) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented.

Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

Table 41: Spe.3, Woman, Husband and Household Comp. for Weekly Working Hours

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
DM	-6.7500	-92.69	-0.4000	55.59	-1.6049	1.76	-1.9000	1.17	-1.4251	0.70
	(13.9007)		(10.1272)		(3.1353)		(3.0220)		(2.0847)	
RC	-23.7660	68.21	-0.7573	-53.98	-2.1932	8.94	-0.7142	3.31	-1.3529	5.49
	(0.0000)		(14.7648)		(3.6370)		(3.0836)		(2.0821)	
FRC	-17.5786	0.00	2.3532	0.00	-1.6410	0.00	-1.3695	0.00		
	(10.5207)		(9.5409)		(3.5978)		(3.0031)			
N. obs	4 of 7		5 of 8		81 of 83		110 of 110		207 of 208	
Woman Age	-15.25	-92.69	8.80	55.59	0.25	1.76	0.15	1.17	0.10	0.70
Woman Years of Edu.	3.25	68.21	-2.40	-53.98	0.37	8.94	0.14	3.31	0.23	5.49
Handicapped Woman	0.00	0.00	0.00	0.00	0.04	14.48	-0.01	-4.35	0.01	4.22
Ethnic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agriculture	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mines and energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industry	0.25	92.30	0.00	0.00	-0.02	-9.43	-0.05	-17.42	-0.03	-11.44
Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commerce	-0.25	-87.49	0.00	0.00	0.00	0.00	-0.03	-9.19	-0.02	-6.58
Tourism and restrnts.	0.00	0.00	0.00	0.00	0.01	6.48	-0.01	-4.81	0.00	0.00
Transport and Comm.	0.00	0.00	0.00	0.00	0.00	0.00	0.01	7.84	0.01	4.26
Finance	0.25	216.93	0.00	0.00	0.00	0.00	0.00	0.00	0.01	5.93
Real Estate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Government	-0.25	-190.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-4.46
Education	0.00	0.00	0.00	0.00	0.00	0.00	0.01	6.33	0.01	3.42
Health	0.00	0.00	0.00	0.00	-0.01	-6.46	0.02	9.86	0.01	2.74
Other social sector	0.00	0.00	0.00	0.00	0.02	16.87	0.04	23.96	0.03	20.53
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.01	4.15	0.01	2.16
Husband Age			10.80	51.95			1.13	5.78	0.89	3.71
Husband Years of Edu.			-0.60	-12.44			0.15	3.24	0.07	1.39
Handicapped Husband			0.00	0.00			-0.01	-4.23	-0.01	-2.56
Calamity	0.00	0.00	0.00	0.00	0.06	16.36	0.05	13.87	0.05	14.48
Chronic Disease	-0.50	-110.00	0.20	41.64	0.06	13.18	0.06	13.65	0.06	11.78
Percentage of under 12					0.01	4.71	0.03	13.17	0.02	8.84
Other handicapped					0.05	16.67	0.03	10.07	0.04	12.94
Household Size					0.05	2.94	0.02	1.13	0.03	1.72
Single Woman									0.00	0.00
Couple living alone									0.00	0.00
Woman as Household Head									0.00	0.00
Couple as Household Head									0.00	0.00

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (SB) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

Table 42: Spe.4, Woman, Husband, Household Comp. and QoL for Weekly Working Hours

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	-23.5000 (11.9704)		-31.3333 (13.5483)		-1.0000 (3.1644)		1.6422 (3.0722)		-1.7122 (2.2324)	
RC	-40.3866 (0.0000)		0.0000 (0.0000)		-1.9146 (3.3286)		2.2059 (3.0923)		-1.2884 (2.2179)	
FRC	-23.1368 * (11.5222)		-28.1106 ** (10.9718)		-1.5984 (3.2603)		2.0007 (2.9749)			
N. obs	4 of 7		3 of 8		80 of 83		109 of 110		205 of 208	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	2.25	13.68	3.67	23.16	1.14	8.11	0.62	4.73	0.82	5.69
Woman Years of Edu.	0.00	0.00	-1.00	-22.49	-0.33	-7.84	0.16	3.79	-0.04	-1.02
Handicapped Woman	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-4.15
Ethnic	0.00	0.00	0.00	0.00	0.01	8.68	0.01	6.32	0.01	7.28
Agriculture	0.00	0.00	0.00	0.00	0.00	0.00	0.01	19.13	0.01	10.46
Mines and energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industry	0.25	92.30	0.00	0.00	0.00	0.00	-0.07	-28.12	-0.03	-13.02
Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commerce	-0.25	-87.49	-0.33	-120.00	-0.01	-3.86	-0.06	-18.55	-0.04	-13.95
Tourism and restrnts.	0.00	0.00	0.00	0.00	0.01	6.56	-0.01	-4.85	0.00	0.19
Transport and Comm.	0.00	0.00	0.00	0.00	0.00	0.00	0.01	7.91	0.01	4.44
Finance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Real Estate	0.00	0.00	0.00	0.00	0.01	6.04	0.03	14.03	0.02	10.80
Government	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
Education	0.00	0.00	0.00	0.00	0.03	16.35	0.03	19.16	0.02	14.32
Health	0.00	0.00	0.00	0.00	0.01	6.54	0.03	14.92	0.02	11.54
Other social sector	0.00	0.00	0.00	0.00	0.01	8.54	0.05	30.22	0.03	21.45
Other services	0.00	0.00	0.33	176.38	-0.06	-23.37	-0.03	-12.57	-0.04	-17.04
Husband Age			6.67	32.07			1.50	7.67	0.61	2.53
Husband Years of Edu.			-2.33	-48.37			0.03	0.58	-0.04	-0.85
Handicapped Husband			0.00	0.00			-0.04	-17.06	-0.02	-12.72
Calamity	0.00	0.00	0.00	0.00	0.06	16.57	0.04	11.20	0.05	13.82
Chronic Disease	0.00	0.00	0.00	0.00	0.04	8.00	0.04	7.87	0.03	6.19
No tenant	-0.25	-49.96	0.00	0.00	-0.01	-2.52	-0.05	-9.20	-0.04	-8.20
SISBEN Level 1 or 2	0.25	52.21	0.00	0.00	0.00	0.00	-0.06	-11.60	-0.03	-6.36
Other Transfer.	0.00	0.00	0.00	0.00	-0.03	-5.30	0.06	13.60	0.02	4.52
Quality of Life Index	0.97	43.40	-0.53	-18.40	-0.04	-1.25	-0.23	-4.87	-0.01	-0.27
Percentage of under 12					0.00	1.03	0.01	7.19	0.01	3.85
Other handicapped					0.03	8.44	0.03	10.17	0.02	7.86
Household Size					0.21	12.64	0.09	5.69	0.11	6.09
Have changed residence					0.09	19.62	0.09*	20.46	0.09**	21.21
Single Woman									0.00	0.09
Couple living alone									0.00	0.06
Woman as Household Head									0.00	0.93
Couple as Household Head									-0.00	-0.93

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (SB) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1

DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.

Source: Own calculations

Table 43: Spe.5, Relevant Covariates for Weekly Working Hours

	(I) Single		(II) Couple		(III) Single Head		(IV) Couple Head		(V) Sample	
DM	-15.4000 (9.9025)		-6.0000 (10.4642)		-2.8250 (3.2900)		2.4190 (3.2284)		-2.0049 (2.1466)	
RC	-18.3533 (0.0000)		4.4629 (0.0000)		-2.4755 (3.3345)		2.9701 (3.3009)		-1.3034 (2.1140)	
FRC	-15.7412 (9.9385)		-6.1774 (9.2504)		-2.4919 (3.2185)		2.7323 (3.2451)			
N. obs	5 of 7		5 of 8		80 of 83		105 of 110		205 of 208	
	Diff	SB	Diff	SB	Diff	SB	Diff	SB	Diff	SB
Woman Age	-1.80	-10.94	3.60	22.74	1.01	7.22	-0.72	-5.48	-0.03	-0.23
Woman Years of Edu.	-1.60	-33.58	-1.00	-22.49	0.09	2.11	0.25	6.01	0.15	3.54
Handicapped Woman	0.00	0.00	0.00	0.00	0.03	9.77	-0.02	-9.11	-0.01	-4.06
Ethnic	0.00	0.00	0.00	0.00	0.01	8.68	0.01	6.56	0.01	7.41
Agriculture	0.00	0.00	0.00	0.00	0.00	0.00	0.01	19.86	0.01	10.57
Mines and energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industry	0.20	73.84	0.20	74.42	-0.03	-9.55	-0.04	-14.60	-0.02	-6.88
Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commerce	0.00	0.00	0.00	0.00	-0.06	-19.32	-0.03	-9.63	-0.04	-13.47
Tourism and restrnts.	0.00	0.00	0.00	0.00	0.01	6.56	0.01	5.04	0.01	5.72
Transport and Comm.	0.00	0.00	0.00	0.00	0.00	0.00	0.02	16.43	0.01	8.88
Finance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Real Estate	0.00	0.00	-0.20	-100.00	-0.01	-6.04	0.02	9.71	0.00	0.73
Government	-0.20	-160.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-4.36
Education	0.00	0.00	0.00	0.00	0.03	16.35	0.01	6.63	0.01	7.51
Health	0.00	0.00	0.00	0.00	0.03	13.08	0.01	5.16	0.02	9.01
Other social sector	0.00	0.00	0.00	0.00	0.03	17.08	0.02	12.55	0.02	14.75
Other services	0.00	0.00	0.00	0.00	0.01	4.67	-0.03	-13.05	-0.01	-5.75
Husband Age			-2.20	-10.58			-0.54	-2.78	-0.55	-2.30
Husband Years of Edu.			0.40	8.29			0.06	1.20	0.04	0.79
Handicapped Husband			0.00	0.00			-0.02	-8.86	-0.01	-7.50
No tenant	0.00	0.00	0.00	0.00	0.09	17.66	-0.03	-5.73	0.02	3.59
SISBEN Level 1 or 2	0.20	41.77	0.00	0.00	0.01	2.68	-0.03	-6.02	-0.01	-2.58
Other Transfer.	0.00	0.00	0.00	0.00	-0.04	-7.94	0.06	12.10	0.01	1.91
Quality of Life Index	0.19	8.45	-0.92	-32.04	0.38	11.27	-0.44	-9.17	0.03	0.83
Percentage of under 12					0.00	0.74	0.03	15.86	0.02	7.28
Other handicapped					0.01	4.22	0.05*	17.59	0.02	8.03
Household Size					0.29	17.11	0.00	0.00	0.04	2.04
Single Woman									0.00	0.18
Couple living alone									0.00	0.15
Woman as Household Head									0.00	0.26
Couple as Household Head									-0.00	-0.41

The first panel corresponds to the ATT estimation procedures. The second checks the balance property: a t-test (Diff) and Standardized Bias (BS) between control and treatment groups within the family composition groups are presented. The number of included treated observations is presented. Robust standard errors in parentheses for RC and FRC. \*\*\*p<0.001 \*\*p<0.05 \*p<0.1  
DM: Difference of means. RC: Regression within each group. FRC: Regression using the full matched sample.  
Source: Own calculations