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ABSTRACT

Conditional Cash Transfers, Political Participation, and Voting Behavior^{*}

This paper estimates the effect of enrollment in a large scale anti-poverty program in Colombia, *Familias en Acción* (FA), on intent to vote, turnout and electoral choice. For identification we use discontinuities in program eligibility and variation in program enrollment across voting booths. We find that FA has a positive effect on political participation in the 2010 presidential elections by increasing the probability that program beneficiaries register to vote and cast a ballot, particularly among women. Regarding voter's choice, we find that program participants expressed a stronger preference for the official party that implemented and expanded the program. Overall, the findings show that voters respond to targeted transfers and that these transfers can foster support for incumbents, thus making the case for designing political and legislative mechanisms, as the laws recently passed by the Colombian government, that avoid successful anti-poverty schemes from being captured by political patronage.

JEL Classification: O10, D72, P16

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1 Introduction

In the last 15 years Conditional Cash Transfer (CCT) programs have become a major component of the poverty reduction and social protection strategies of many developing countries. While most of these programs started in Latin America, currently CCTs are used in over 40 countries spanning several regions of the world (World Bank, 2011). Even though certain program characteristics vary from country to country, in general standard CCTs provide money to poor families, through women, contingent upon investments in the human capital of their children, such as regular school attendance, basic preventive health care and better nutrition. A large number of CCTs have been subject to rigorous evaluations, most of which show that they have fulfilled the twin primary objectives of alleviating poverty in the short term and building the human capital of poor children. These studies have also uncovered a number of indirect effects ranging from reductions in child labor to increases in savings and productive assets, changes in sexual behavior and marriage decisions, and higher reliance on better risk-coping strategies (See Fiszbein et al. 2009 for an overview).

There is also a political economy aspect to social transfers. In theory, anti-poverty programs such as CCTs may play a role in influencing individual political participation – in the form of voting – and preferences, strengthening democratic representation but also producing electoral rewards. For instance, by partly changing the economic circumstances of households, transfer receipts could persuade participant households to exercise their right to vote (Gleason, 2001). Politicians could also strategically allocate benefits to certain groups of people to raise political support or persuade recipients to cast a ballot in favor of the incumbent (Robinson and Verdier 2002, Camacho and Conover 2011, Drazen and Eslava 2012). Moreover, citizens may get signals from social policy choices and use them to infer the competence of politicians and their preferences for redistribution (Rogoff 1990; Drazen and Eslava, 2010; Banerjee et al.,

2011). Alternative hypothesis include the possibility of voting as a result of reciprocity towards politicians, fear of losing coverage and increased access to more and better sources of information on political rights and processes (Finan and Schechter 2010, Manacorda et al., 2011, Gine and Mansuri 2011).

The possibility of reaping electoral returns by strategically allocating targeted transfers to strengthen political prospects is not only a theoretical prediction but also an issue that has caught the attention in current public debates. Conjectures on possible political rewards linked to participation in CCTs have been reported in the media following presidential elections in Ecuador, Peru, Mexico and Brazil (De la O, 2009). In the specific case of Colombia, different media outlets speculated right before the 2010 presidential election that the official government had used the expansion and allocation of *Familias en Acción* (FA), a large scale CCT program examined here, to systematically increase its votes.¹ More recently, and perhaps due to current debates on the possible misallocation of program benefits by local politicians, the Government of Colombia has passed laws to make of *Familias en Acción* a formal national poverty reduction program. To further avoid political capture of the program, the law bans enrolling new beneficiaries three months before major elections (*El Tiempo*, May 24, 2012).²

Despite the potential interactions between government policies and voter decision making, little evidence is available to assess whether conditional social transfers encourage people to vote and influence their political choices. Rigorous evidence on the subject however, is starting to emerge. Using individual level self-reported data, Manacorda et al. (2011) find that beneficiaries of PANES - a large and temporary unconditional Cash Transfer Program in Uruguay - express larger support for the incumbent that implemented the program. The authors attribute that extra support to the inference of beneficiaries on the politicians' redistributive preferences as

¹See <http://www.lasillavacia.com/historia/16024> and <http://www.lasillavacia.com/node/30017>.

²See article <http://www.eltiempo.com/archivo/documento/MAM-5444542>.

well as from reciprocity. Similarly, evidence for Romania shows that incumbents gained political support through a program aimed at helping poor families purchase a computer (Pop-Eleches and Pop-Eleches, 2009).

Using administrative data at the municipality level, analysis of Mexico's *Oportunidades* CCT suggests that turnout and incumbent vote share increased in villages that were randomly assigned to receive the program (De La O, 2009). Previous work for Colombia's *Familias en Acción* (Nupia 2012) point to results in the same direction. The larger beneficiary rates in regions where Uribe won by more than 50% of the vote in 2002 are associated with an increase in the proportion of votes that go to the incumbent governing coalition; there is no statistically significant effect for swing regions.³ Conditional and unconditional correlation analysis for Brazil suggests that the coverage of *Bolsa Familia*, a large scale CCT program, is associated with Lula's vote share when he sought a second term (Zucco, 2008).

Addressing causality between social policy and political participation and preferences is empirically challenging as it requires an exogenous source of variation in social transfer receipt and rich data on voting behavior. This paper exploits discontinuities in program eligibility and variation in participation across voting booths to estimate the effect of enrollment in *Familias en Acción* (FA), a Colombian CCT program, on the intent to vote, turn out and on electoral choice during the 2010 Colombian presidential election. The use of detailed data at the individual and voting booth levels together with the identification strategies (discussed in more detailed below) allow us to control for possible confounders such as policy endogeneity, individual selection in the take-up and reverse causality. Additionally, unlike other studies we use actual voting outcome data, as opposed to self-reported data which could suffer from reporting bias. We provide evidence that relative to non-participants, FA beneficiaries of voting age are 1.6-2.5 percentage

³This paper relies on variation at the municipality level. However, there are concerns that identification strategy (concentration of swing voters and loyal voters) may violate the necessary exclusion restriction. For instance, loyal voters' municipalities could have been strategically targeted by politicians when the program was expanded.

points more likely to register to vote. A standard deviation increase in the proportion of FA beneficiaries at each booth results in a 1.6-1.8 percentage point increase in the probability of casting a ballot and a 1.5 percentage point increase in the probability of voting for the incumbent party under which the program was expanded. This effect is stronger for women, who are the direct recipients of the cash transfer as established by the program rules. The elected candidate won in the runoff election with a large margin (69 percent of the votes), thus our results are unlikely to explain the final outcome. However, they show that voters respond to targeted transfers and that these transfers can foster support for incumbents, thus making the case for designing political and legislative mechanisms that avoid successful anti-poverty schemes from being captured by political patronage.

The paper is structured as follows. The next section provides background information of the Colombian electoral system and the FA program. Section 3 describes the main data sets used in the analysis. Section 4 describes the identification strategy. Section 5 presents the empirical results, including discussion on some robustness checks. Finally, section 6 concludes and discusses possible channels for our results.

2 Background

2.1 Government, Electoral System and Political Context

Following the principle of separation of powers, Colombia's system of government is divided into executive, legislative and judicial branches. The President is the head of the executive branch and in that position plays the role of head of state and head of government. At the sub-national level, the executive power is conferred to department governors and municipal mayors. Colombia has a long history of party politics. Within a multi-party representative democracy framework, the Colombian President is chosen directly by the electorate to serve a four-year

term. An amendment to the Constitution passed by the Congress in 2004 and approved by the Constitutional Court in 2005 allows a head of state to run for a consecutive term in office. In 1991, Colombia adopted a two-round system, where the runoff is avoided if in the first round the winner receives more than 50 percent of the valid votes.

Elections in Colombia -including the presidential election- are organized by the National Registry Office (RN—its acronym for *Registraduría Nacional* in Spanish), the institution responsible for the civil registry and identification of people. The RN is in charge of maintaining an updated official voter registry before every election. The right to vote is granted to all Colombians aged 18 years and older. Before 1988, any citizen eligible to vote and interested in voting had to register in an electoral office. Currently, any citizen who requests and obtains a national identity card (known as *cédula*) from RN after turning 18 is automatically enrolled in the official electoral registry (Art. 49 of *Ley Estatutaria*).⁴ Before 2003 these automatic registrations were assigned to the largest polling station in each municipality. Since 2003 people are automatically registered to vote near the office where they obtained their valid identification card.⁵ In practice, however, this is not widely known. Dates of registration to vote are determined by the RN and usually span a two-week period in the months before elections. An individual can register in a new polling station each time registration opens, but the person can vote only in the last place where she was validly registered. For presidential elections, registered voters can cast their vote for a candidate in an election day in roughly 10,000 polling stations scattered in 1,119 municipalities across the country.⁶

In the last decade, the political landscape has been dominated by the parties that implemented and expanded the FA program. Even though it was originally conceived and designed in 2001 under the government of the Colombian Conservative Party, FA became the flagship

⁴<http://www.registraduria.gov.co/Reforma-politica-y-Elecciones-de.html>

⁵http://www.colombia.com/especiales/elecciones_2011/pedagogia-electoral/

⁶http://www.registraduria.gov.co/Informacion/inscrip_ced_2011_preguntas.htm,
http://www.colombia.com/especiales/elecciones_2011/pedagogia-electoral/

public anti-poverty strategy of the *Partido de la U* during the two terms of President Alvaro Uribe (2002-2006 and 2006-2010), reaching almost national coverage. Juan M. Santos, the former Defense Minister in the second term of President Uribe and also affiliated to his political party, became the presidential candidate in early 2010. In the runoff election held on June 20, 2010, the electoral process examined in this paper, Santos achieved a landslide victory, with 69 percent of the votes.

2.2 The *Familias en Acción* Program

Colombia suffered a severe economic downturn during the late 1990s that led to a serious increase in poverty and a deterioration of several social indicators. One of the responses of the Government of Colombia to mitigate the effects of the crisis on the poor was to launch a social transfer program in 2001 inspired in a successful scheme applied in Mexico, the widely known *Progresa/Oportunidades*. The Colombian FA program offers cash transfers -ranging from approximately US \$8 to US \$16 per school age child and nutrition packages of approximately \$28 dollars for children below 7- contingent upon school attendance of the beneficiary children and regular participation in growth monitoring sessions and nutrition workshops, respectively. In addition to having children in the relevant ages, households are offered the program based on their poverty score index in a proxy means test system known as *SISBEN*.

The *SISBEN* poverty index score is constructed with information from a registry of the poor. This register, through household level interviews, collects information on households' demographics, structure, durable goods, housing characteristics, human capital, labor force participation, income, and access to basic services. The poverty index score is calculated with an algorithm that weighs several variables to predict household welfare. The score takes values from 0 to 100 for the poorest and less poor households, respectively. At the time of this study, the distribution of the score is divided into 6 brackets and households assigned to the lowest

bracket (*SISBEN* level 1), corresponding nearly to the population in extreme poverty, are deemed eligible to benefit from the FA program.

The program was initially piloted in 22 municipalities in 2001 but it has been continuously expanded since then. The first major expansion took place in the second half of 2002, targeting initially 400 municipalities with fewer than 100,000 inhabitants amongst other conditions.⁷ In 2005, the program was extended to include displaced families and municipalities which either became able to offer the required education and health services or with services accessible in nearby towns. In 2007, the program was further expanded to large urban centers and municipalities not covered before. By 2010 the program reached almost national coverage, benefiting nearly 2.5 million households in 1,093 municipalities (Acción Social, 2010; Attanasio et al, 2010). In 2012 the program became a law, so that all people in *SISBEN* level 1 are eligible for the transfer, regardless of the place of residence.⁸ Figure 1 depicts the cumulative enrollment in the program over time, where the vertical lines indicate the timing of the presidential elections.

3 Data

This paper uses three administrative data sets to identify the effects of FA on voting behavior: (1) an electoral census, (2) the FA's information system of beneficiaries (SIFA) and, (3) the *SISBEN*. The first one has information on the most recent date of registration and voting place (municipality, polling station and voting booth) for all adults who were registered to vote in the 2010 Presidential election.⁹ Once registered in a specific polling station, citizens are assigned to a voting booth within the polling station at the time of the elections.

⁷Municipalities could not be departmental capitals, had to have at least one bank branch in the municipality (to deliver the transfers), and had access to education and health facilities that allowed for the implementation of the program.

⁸http://www.eltiempo.com/politica/ARTICULO-WEB-NEW_NOTA_INTERIOR-11929202.html

⁹In Colombia citizens become eligible to vote at age 18. Colombia has very high registration rates. According to LAPOP, a Latin American political survey, registration rates between 2004 and 2010 were approximately 90%. Yet, actual turnout rates are much lower, usually in the order of 50% percent

The second dataset, SIFA, is used by the national agency that runs FA for administration and monitoring purposes. The data set is a longitudinal census of program beneficiaries from 2001 to the present. There is information on nearly 2.5 million families who have participated or are currently participating in the program. We limit this dataset to all adults from beneficiary households with a valid identity card (needed to vote) and match it with the electoral census (using each person's national identification number). Overall, most people in SIFA (96.5%, corresponding to 3,608,733 program participants) are registered to vote.

Finally, we use the *SISBEN* to identify non-participants that are comparable to FA beneficiaries, namely that they live in households with similar socio-economic and demographic characteristics as determined by their corresponding poverty index score. These data are also matched with the electoral census. Then we append Sisben-electoral census with SIFA-electoral census to produce a sample that is comprised of individuals below and above the cutoff score that establishes eligibility to FA. The matched sample shows that 86% of the FA beneficiaries are registered in the *SISBEN*. The rest is mostly comprised of displaced individuals and indigenous people, who by law are not required to have a score below the eligibility threshold to participate in FA, and thus are not included in our analysis.

The sample is restricted in two ways. First, considering that the program is offered only to families with children under 18 years, the data is restricted to only include adults 25-46 years old at the moment of the presidential election. This age range is determined by the age distribution of mothers in urban Colombia as reported in vital statistics records in 2010. This is done to ensure that we focus on the group of parents whose voting behavior is more likely to be influenced by FA given the timing in which the program was rolled out throughout the country. The second restriction limits the data to only urban households. The reason for doing this is that by design, the algorithm that determines the poverty score in rural areas was defined to produce substantial discontinuities around the threshold of program eligibility for variables

that should not be affected by the program (sex and age of head of the household). This clearly invalidates the underlying assumption necessary to perform a regression discontinuity design given that individuals would be different in some observables around the threshold.

Summary statistics for the final matched dataset (electoral census + SIFA + SISBEN) are reported in Table 1. Panel A reports statistics for the sample at the individual level, which is used for the analysis on registration to vote. Approximately 46% of the individuals in the sample are eligible to benefit from FA but around 42% of the eligible (19.6%) actually participate in the program.¹⁰ 93.2% of individuals are registered to vote in the elections, which is similar to the rate calculated using a political survey done in Colombia, *LAPOP*, 90%. 28.3% people in our sample registered to vote after the onset of FA on the municipality. The average person is 38 years old and has seven years of education at the moment they were interviewed for the *SISBEN*; more than half (58.8%) of individuals in the sample are women. Panel B, reports individual level statistics but restricting the data to females due to the fact that mothers are the direct recipients of the transfer. In total we have over 2 million women, with 25.5% eligible for FA and 95.5% registered to vote. Overall, the characteristics of this group are similar to those reported in Panel A for the complete sample.

Panel C of Table 1 in turn presents descriptive statistics for the booth-level sample used to estimate the effects of FA on voter turnout and choice. People registered to vote in urban centers were assigned to 103,367 voting booths, each of them with an average of 420 individuals. Turnout rates at the booth level for both Presidential elections (first round and runoff) were close to 60 percent.¹¹ Finally, the average fraction of votes for the incumbent party candidate was 38% and 51% in the first round and runoff respectively, with a margin of victory at the booth level of 15 (first round) and 28 (runoff) percentage points.

¹⁰FA program administrators estimate that the overall take up rate in 2010 was around 65 percent. However, take up rates have been found to be much lower in urban areas.

¹¹These turnout rates are higher than the national level ones (46% for 2010) because they are calculated for urban areas and at the booth level.

4 Empirical Strategies

4.1 Regression Discontinuity

We first rely on a Regression Discontinuity (RD) framework to identify a causal effect of FA on decisions regarding registering to vote. We exploit the discontinuity in FA eligibility for people around the threshold, since people just below the eligibility threshold, the first bracket of the SISBEN score, were able to enroll in FA, while people just above were not. Moreover, the cutoff for the first bracket of the SISBEN score does not determine eligibility to other major social programs except for a child feeding program given to children between 6 month and 5 years old, which is an in-kind daily transfer that does not coincide specifically with the payment of FA, therefore this is not expected to invalidate our empirical strategy. In section 5.3 we discuss the robustness of the results when potential beneficiaries of the child feeding program are excluded from the sample of analysis.

We need to validate several assumptions for the RD strategy to work in this context. Specifically, if the eligibility indicator affects registration to vote only through enrollment in FA, then two necessary conditions should hold. First, there should be no bunching in the distribution of the *SISBEN* score around the eligibility threshold. Figure 2 shows the histograms for all the individuals in the SISBEN data base (top graph), and in our matched sample for men and women (bottom left) and for women only (bottom right). By design of the proxy-means test algorithm, the distribution is bimodal and the overall distribution is very similar to the one in our matched sample. Furthermore, the density is higher above the eligibility threshold¹² than below it, which is contrary to the idea of manipulation of the score in order to become eligible for FA. Neither distribution shows bunching at the eligibility threshold. Second, as Figure 3 shows, other variables which are not affected by the program are continuous at the eligibility

¹²Normalized to a value of zero and depicted with a vertical line.

threshold.¹³ We check for household size and number of children, given that these variables might be endogenous to the program eligibility criteria. We also checked that other variables such as years of schooling, cohabitation, age and unemployed that could potentially affect political preferences and voting decisions do not exhibit discontinuities at the cutoff either. These two conditions of no bunching at the threshold and continuity in observables at the threshold, lend support to the use of regression discontinuity as the first identification strategy.

Program effects are estimated using a “fuzzy” RD design given that the probability of being in FA does not change from 1 to 0 at the eligibility threshold. Specifically the first stage regression is given by:

$$\begin{aligned} FA_{ij} &= \delta_0 + \delta_1 \text{elig}_{ij} + f_1(\text{score}_{ij} | \text{score}_{ij} \leq \overline{\text{score}}) \\ &+ f_2(\text{score}_{ij} | \text{score}_{ij} > \overline{\text{score}}) + \gamma_j + \chi' X_{ij} + \epsilon_{ij} \end{aligned} \quad (1)$$

Where FA_{ij} is an indicator variable equal to one if the individual i of municipality j is enrolled in FA. elig_{ij} is an indicator equal to one if the person is eligible for FA. $\overline{\text{score}}$ is the threshold score used to determined eligibility for FA, and it is normalized to a value of zero at the eligibility threshold. $f_1(\cdot)$ and $f_2(\cdot)$ are functions of the *SISBEN* score that are allowed to be different at each side of the threshold. X_{ij} correspond to individual covariates such as age and years of schooling.¹⁴ γ_j controls for municipality fixed effects and ϵ_{ij} is an error term.

Then, using eligibility as an instrument for FA enrollment status, to determine the effect of FA on the probability of registering to vote, we estimate the second stage regression:

$$\begin{aligned} Registered_{ij} &= \pi_0 + \pi_1 \widehat{FA}_{ij} + f_1(\text{score}_{ij} | \text{score}_{ij} \leq \overline{\text{score}}) \\ &+ f_2(\text{score}_{ij} | \text{score}_{ij} > \overline{\text{score}}) + \gamma_j + \nu' X_{ij} + \eta_{ij} \end{aligned} \quad (2)$$

¹³Even though the functions that characterize these variables are not always monotonic on the poverty score –due to the way the score algorithm was constructed, importantly there are no abrupt changes occurring at the discontinuity threshold.

¹⁴The results are robust and very similar when omitting these covariates.

where $Registered_{ij}$ corresponds to an indicator variable of whether an individual i in municipality j registered to vote. The coefficient of interest is π_1 . Here we assume that the eligibility indicator affects registration to vote only through enrollment in FA. This is a plausible assumption given the smoothness of the distribution of the *SISBEN* score and other covariates at the program eligibility threshold (Figure 2 and Figure 3). Since eligibility is assigned at the household level, we cluster the RD results at this unit. We identify tables using this RD methodology with the word “RD” in the title.

4.2 Fixed Effects and 2SLS Regressions

Individual level voting data is rarely (legally) recorded. To overcome the absence of information on the actual vote for each person, we use voting outcomes at the voting booth level, which is the most disaggregated level available. We start by using OLS polling station fixed effects regressions of the variable of interest (turnout, incumbent’s party vote share, margin of victory) on the proportion of FA participants (men and women or women) in the voting booth (b) of the form:

$$Y_{pbr} = \beta_0 + \beta_1 Prop_FA_{pb} + \beta_2 SISBEN_{pb} + \beta_3 controls_{pbr} + \gamma_p + \eta_r + \epsilon_{pbr} \quad (3)$$

Where p designates a polling station, b a voting booth, and r an electoral round (first round or runoff). Y is the outcome of interest which is identified in each table. $Prop_FA$ is the proportion of registered voters at the booth who are FA beneficiaries (men and women beneficiaries, or women beneficiaries). $SISBEN$ corresponds to the booth level average of the *SISBEN* score to proxy for poverty. $controls$ corresponds to a vector of other booth (b) level characteristics specified in each table and usually includes: female proportion, age, household size, children, cohabitation, education level, employment status, homemaker, student status, renter, pensioner, and length of time between the *SISBEN* interview and the elections (distance), and all of the

previous variables interacted with the distance variable. We use polling station (p) and electoral round (r) fixed effects. We also estimate similar regressions for women by substituting $Prop_FA_{pb}$ in regression 3 for a variable that capture the proportion of female voters enrolled in FA in each booth $Prop_FA_female_{pb}$. In these regressions we omit the control of female proportion due to collinearity, but keep all other controls.

We estimate 2SLS regressions to further control for potential endogeneity in FA enrollment. We instrument the proportion of FA enrolled in the booth (men and women beneficiaries, or women beneficiaries) with the proportion of FA eligible at each booth as determined by the *SISBEN* score of each person assigned to cast a ballot in the corresponding voting booth. We keep the same controls as in equation 3, including polling station fixed effects, and report 2SLS results.

In summary, by using the identification strategies outline in this section, we are able to obtain causal estimates of the effect of FA on voting behavior. In particular, the RD strategy allow us to estimate effects for people around the threshold, and the polling station fixed effect strategy with the 2SLS allow us to avoid selection concerns due to the fact that individuals are assigned to a voting booth within a station.

5 Findings

5.1 Intent to Vote and Turnout

We initially explore the overall effect of enrollment in the FA program on individuals' intent to vote in the 2010 presidential election using voter registration as a proxy for intent to vote.¹⁵ This part of the analysis relies on a Regression Discontinuity (RD) framework exploiting the discontinuity in FA eligibility to the program for people around the threshold.

Figure 4 presents a graphical representation of the first stage regression and shows a sharp

¹⁵Our sample restrictions of keeping parents aged 25-46 addresses potential concerns due to automatic registration when people first obtain the *cédula* (ID card).

discontinuity in FA enrollment at the eligibility threshold both for the men and women data set (left) and the women sample data set (right). Men and women to the left of the threshold are between 29 and 33 percentage points (panel A “Eligibility” of Table 2) more likely to be beneficiaries, while the estimated discontinuity using the sample of women is between 35.5 and 41 percentage points as reported in panel A “Eligibility” of Table 3.

An initial graphical examination of the data - shown in the left top panel of Figure 5- suggests that individuals covered by FA were more likely to register to vote relative to those who were similar but barely ineligible for FA because their *SISBEN* score was just above the eligibility threshold. The corresponding 2SLS results are shown in the second set of results in panel A “FA” of Table 2. In columns (1)-(3) we report parametric regressions with a different functional forms of the running variable which are allowed to be different on either side of the threshold. Each first column uses the whole sample and the second and third column uses a narrower bandwidth around the eligibility threshold. In column (4) we report results using an optimal bandwidth for an RD setting following Imbens and Kalyanaraman (2009) (I & K). Overall, there is strong evidence that FA encourage people to participate in the elections as voters. Table 2 shows that the probability of registering to vote is significantly higher (1.6-2.5 percentage points) among FA beneficiaries relative to comparable non-participants whose poverty scores are just above the threshold.

To further explore whether the availability of FA is inducing people to register to vote, we also exploit the variation in the roll-out of the program over time and across municipalities. We condition the sample to all individuals who signaled a desire to vote (i.e. registered to vote) and redefine the dependent variable in equation 2 to take a value of 1 if the person registered after the onset of FA in their municipality and 0 if the person registered before the onset of FA. The results on this subsample provide some indication that people covered by FA are more likely to register to vote than non-participants after the Cash Transfer Program is introduced in their

municipalities (Table 2, Panel B and bottom panels in Figure 5). However, these findings do not hold when the models are estimated in a narrower sample around the threshold (Columns (3) and (4)).

Another possibility is that FA could have differential effects among members of the family, especially on those that are the direct recipients of the transfer and more exposed to different sources of information due to the interventions of the program. More specifically, in the case of CCTs, mothers of the beneficiary child are usually designated to receive the transfer and are also required to participate in a number of activities at the community level (e.g. growth monitoring sessions and workshops on good nutrition, health and hygiene practices). This possibly encourages women more than men to interact and exchange information with community leaders and other program participants. We split the sample between women and men to test whether program effects vary with the gender of the parents. Tables 3 and A1 (in the appendix) show the same specifications of Table 2 for these two groups. They indicate that the results for the whole sample are mainly driven by a higher probability to register to vote among women (Table 3). Women are between 1.5 and 3 percentage points more likely to register to vote (panel A “FA”) and 2.6 to 3.5 percentage points more likely to register to vote after the onset of FA in their municipality (panel B “FA”).¹⁶ In contrast, there is no evidence of systematic differences in the intent to vote between FA participant and non-participant men (Appendix Table A1).

Next we look at whether the relatively higher intention to vote attributed to FA translates into actual votes. Considering that voting is not compulsory, this point is of major importance in light of the large historical differences in registration and turnout rates in Colombia. For instance, 44.3% of the population registered in the electoral census casted a ballot in the 2010 Presidential elections¹⁷. Given the absence of voting records at the individual level, we exploit

¹⁶The average registration rate for women in the sample of analysis is 95.5 percent.

¹⁷Source: IDEA, website:http://www.idea.int/vt/country_view.cfm?id=48#pres

variation in eligibility to FA across more than 100,000 voting booths in both OLS polling station fixed effect regressions and in an instrumental variable setting to look at the effect of FA on voter turnout in the 2010 presidential election. OLS and 2SLS results indicate that, in addition to encouraging people to register to vote, the receipt of FA transfers has a positive effect in the probability of casting a vote (Table 4). An increase of one standard deviation in the proportion of FA beneficiaries at the voting booth (around 10%), results in an increase in turnout of .07 and .09 of a standard deviation respectively. This corresponds to nearly a 2 percentage point increase in the turnout rate or 600,000 additional votes in the 2010 elections.¹⁸ We also disaggregate the effects of FA on turnout by gender (Table 4, Panel B). Consistent with the findings on the probability of being registered to vote, we find that the increase in turnout rates among FA beneficiaries is mostly explained by women voting more.

5.2 Political Support

The FA program was originally conceived, designed and piloted in 2001 under the administration of the Conservative party. One year later, the independent candidate Alvaro Uribe was elected president for the period between 2002 and 2006. He then ran successfully for a second term and was president until 2010. FA became the government's flagship anti-poverty program during his two terms, which led to a notable expansion until achieving almost national coverage by 2009.

The results discussed above indicate that FA beneficiaries signaled a greater intent to vote but actually were more likely to vote in the Presidential elections. Seeking to shed light on the possible influence of targeted transfers on voter's choices, we examine whether FA fostered political support for the incumbent party candidate that implemented and expanded the program between 2002 and 2009.

Two variables are used to measure political support in each of the electoral rounds: the per-

¹⁸The total number of registered people to vote in the 2010 elections was 29,853,299, and of those, 13,296,924 voted in the 2010 runoff.

centage of votes that went to candidate of the incumbent party; and the margin of victory defined as: $\frac{Votes\ Incumbent - Runner\ Up}{Incumbent + Runner\ Up}$, where a value close to 1 favors the incumbent party, whereas a value close to -1 favors the runner-up. By using polling station (p) fixed effects (each polling station has several voting booths), we exploit the variation in the proportion of FA beneficiaries among adults registered to vote across voting booths within the same polling station, where polling station proxies for neighborhood. We also pool the two electoral rounds and include election round fixed effects.

Table 5 presents OLS and 2SLS results that use variation on voting outcomes at the voting booth level to identify the effects of FA enrollment. Overall, the findings are indicative of stronger preferences among FA beneficiaries for the incumbent party. A one standard deviation increase on the average FA participation rate at each voting booth (approximately a 10% increase) raises the share of votes of the elected candidate by 1.5 percentage points. Results based on the margin of victory yield analogous results, namely that the gap in the votes between the incumbent party candidate Santos, and the runner up broadened in favor of the former (by 1.7 percentage points) with an increase of a standard deviation (around a 10% increase) in the proportion of FA beneficiaries. The two set of results are robust to empirical models that use each electoral round independently (Appendix Table A2). Along the same lines of the heterogeneity observed in program effects on intent-to-vote and voter turnout by gender, the stronger support for the incumbent party attributed to FA is driven by the preferences of women to vote relatively more for Santos (Table 5, panel B).

5.3 Robustness

The validity of RD designs hinges on the underlying assumption that the running variable (the *SISBEN* score) generates exogenous variation in program participation. We have provided evidence that this assumption holds in the context of FA in urban areas. First, as a check for

manipulation and nonrandom assignment, an inspection of the *SISBEN* distribution reveals that there is no sorting of people around the threshold that determines eligibility to the program. Second, continuity checks for an array of socio-economic characteristics (age, household size, school attainment, etc.) that may be linked to voting behavior do not exhibit statistically significant jumps at the threshold of eligibility, ruling out the possibility that other factors rather than program enrollment explain the effects on political participation and preferences. Third, our results are generally not sensitive to multiple specifications of the *SISBEN* function, including several polynomial functions, non-parametric methods and sample trimming procedures, thus minimizing possible misspecification errors - a critical issue in RD design.

We perform two additional tests to assess the robustness of the findings and the causal interpretation behind them. First, we set the eligibility cutoff at arbitrary values below and above the actual threshold and re-ran all the main empirical models employed to estimate the effects of FA on intent-to-vote. If by chance the analysis was picking a structural break in the relationship between the outcomes of interest and the *SISBEN* score, we might observe a discontinuous variation also at different values of the eligibility threshold. Table 6 shows that none of the coefficients for the 2SLS (FA) results using the arbitrary eligibility cutoffs are statistically significant across all the different model specifications.

Considering that the cutoff for the first bracket of *SISBEN* determines eligibility to both FA and a small child feeding program for poor families with children between 6 months and 5 years old, another concern is that the actual effect on voting behavior may be a combination of the influence of both programs. To address this issue, we re-estimate the models on registration to vote excluding individuals that belong to households potentially eligible to the child feeding program based on the age structure of their children. Overall, the positive and statistically significant effects of FA on registration also hold in this subsample (Table 7). The fact that program effects on the intent-to-vote remain for only FA participants suggests that the effects

of the child feeding scheme, if any, are unlikely to be large.

6 Conclusion

This paper provides empirical evidence to support the notion that political participation and political views are responsive to targeted transfers. The issue is increasingly attracting the attention of policy makers and researchers particularly in a context where identifying policy instruments to balance the trade-offs of the direct and indirect effects of CCTs - including mobilizing people to participate in political processes as voters and electoral accountability- has become important.

Using a unique Census dataset with individual level voter registration data, we show that beneficiaries of FA are around 2.5 percentage points more likely than comparable non-beneficiaries to vote. Increasing voter turnout is often considered a desirable outcome since it increases representation, a basic element that underpins a democracy. This argument is even stronger for countries like Colombia where voting is not compulsory and turnout rates are around 45 percent, lower than those observed in comparable democratic systems.¹⁹

The increase in intent-to-vote and actual turnout is explained by larger political participation among beneficiary women. In many democracies women are less likely to participate in the political sphere, either as voters or as candidates running for public office. Suffrage was extended to women in many countries during the last century, yet women have traditionally voted less than men. Explanations to understand the gender gap in voter turnout range from cultural norms to limited decision power within the household, personal security concerns, mobility constraints, and access to fewer and poorer sources of information to understand the benefits of voting. Although CCTs are not conceived to directly overcome these obstacles, analyses have found that they improve the status of women in the form of exerting larger control over family

¹⁹ Authors' calculation based on information from <http://www.idea.int/vt/countryview.cfm?CountryCode=CO>

resources, and increased exposure to public life and information (Attanasio et al. 2009, Acción Social, 2010).

During the 2010 presidential election voters covered by FA not only voted more often, but also expressed a stronger preference (around 2 percentage points) for the official party that implemented and expanded the program. A possible explanation, consistent with principles of government accountability, is that beneficiaries value the program given the benefits documented in the literature, and respond to these positive policy outcomes at the polls. Alternative models include reciprocity where voters support politicians who helped them in the past, and models of rational but poorly informed voters who extract signals of government preferences for social expenditures from their participation in the program (Manacorda et al 2011) Women in particular have been found to vote more systematically in support of social policies (Gleason 2001; Aidt and Dallah 2008; Funk and Gathmann 2006). Another possible explanation is that FA was strategically targeted and motivated by clientelism and vote buying. The identification strategy and data available do not allow us to distinguish between any of these competing interpretations, and these are interesting questions to be addressed in future research.

Given the local nature of the estimator presented in this paper, it is not possible to fully account for all of the political support for the official party brought about by the FA program. Yet, contrary to anecdotal evidence presented by the Colombian media and considering the wide margin of victory exhibited by the elected President, it is highly unlikely that the overall change in political preferences attributed to FA explains the final outcome of the 2010 presidential election. The results, however, show that voters respond to targeted transfers and that these transfers can foster support for incumbents, thus making the case for designing political and legislative mechanisms that avoid successful anti-poverty schemes from being captured by political patronage.

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Figure 1: Cumulative Program Enrollment

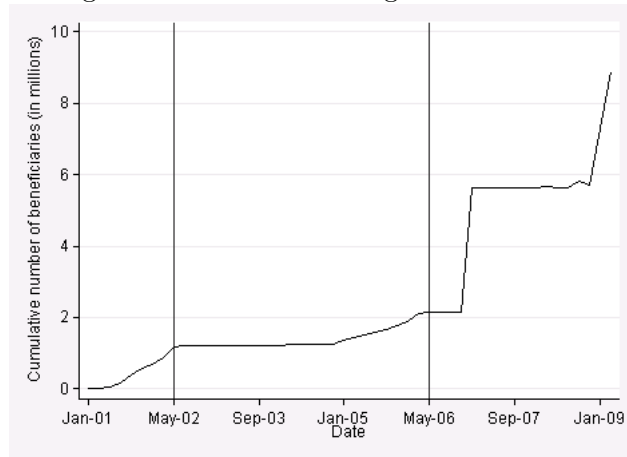
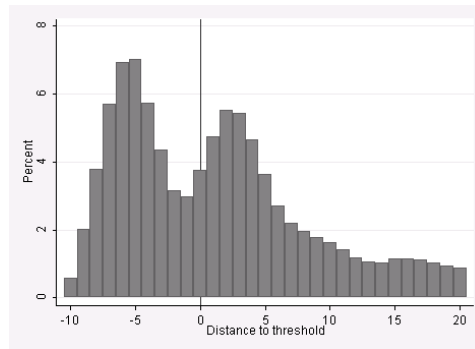
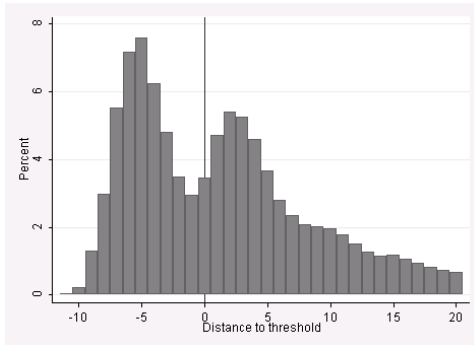


Figure 2: Histogram of *SISBEN* score
All *SISBEN*



Matched Sample: Men and Women



Matched Sample: Women

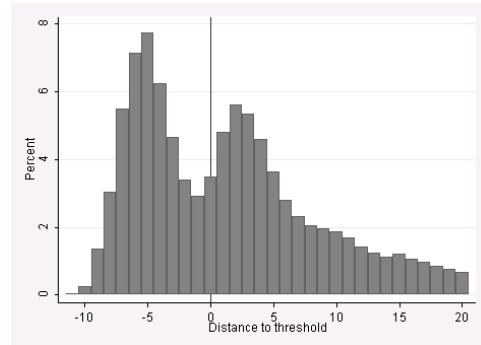


Figure 3: Covariates at the Eligibility Threshold –Women

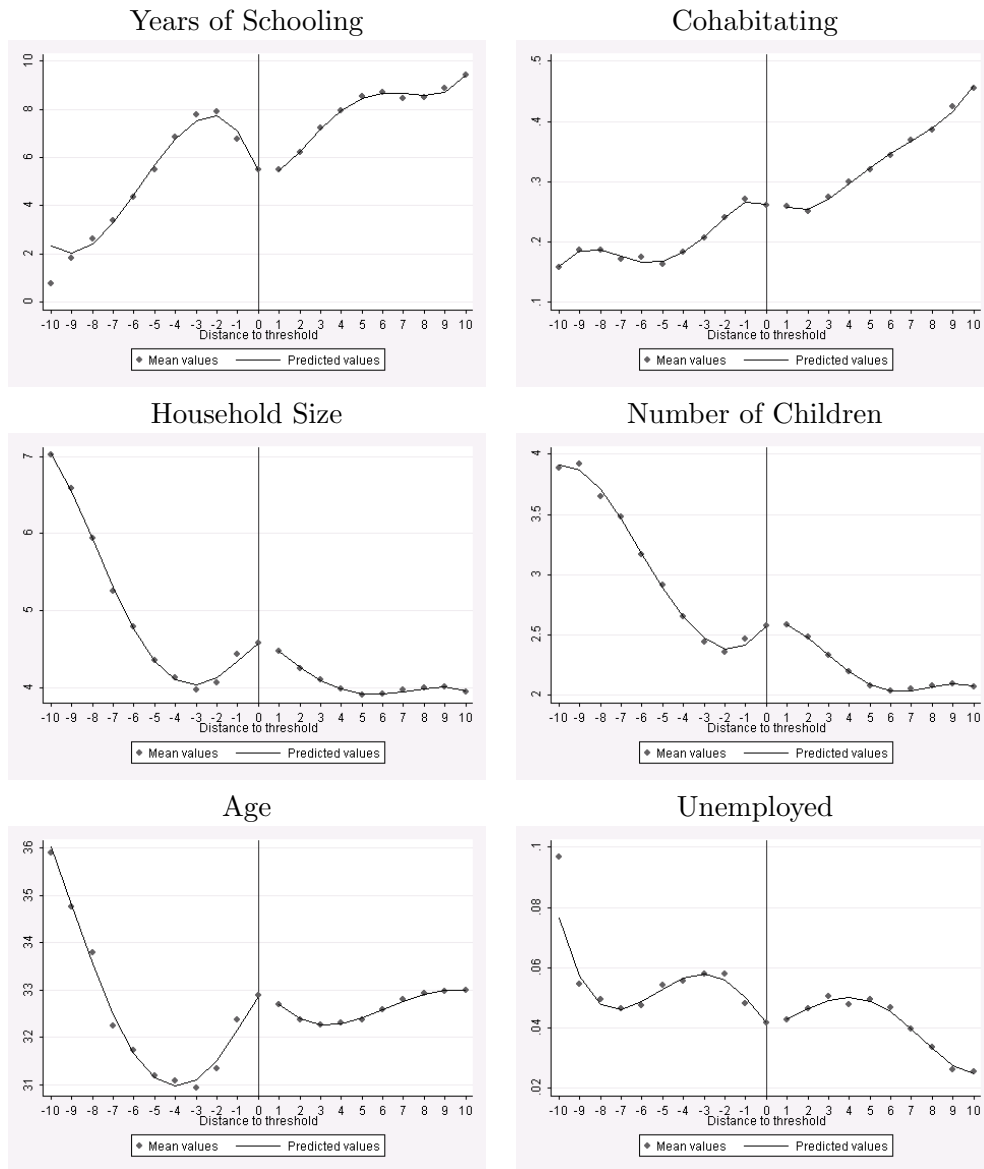
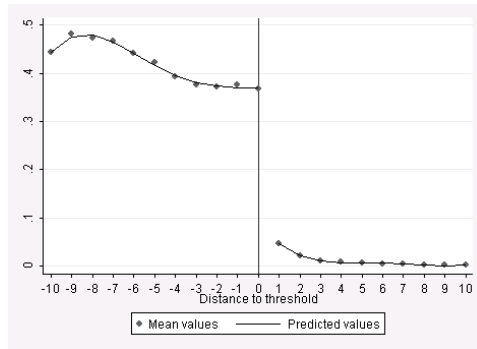


Figure 4: Probability of Being an FA Beneficiary
Men and Women



Women

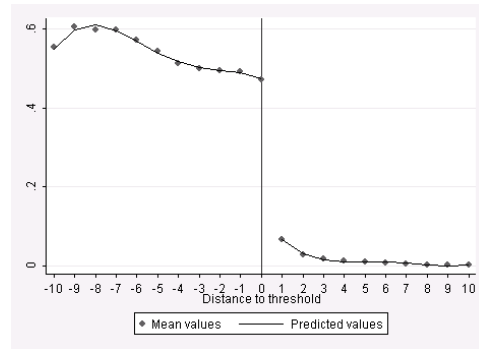
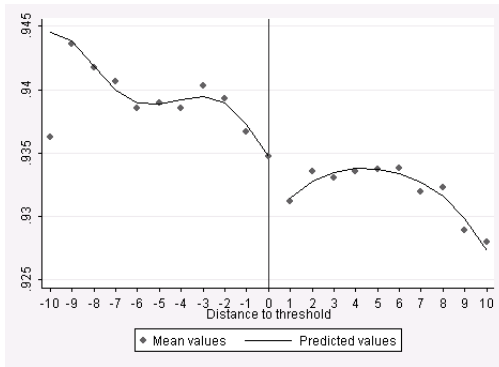
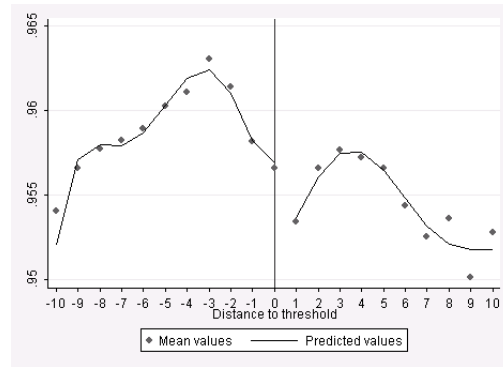


Figure 5: Probability and Timing of Registering to Vote
Being registered to vote

Men and Women

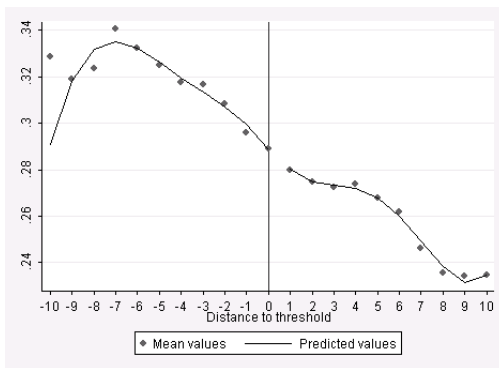


Women



Registered after the onset of FA

Men and Women



Women

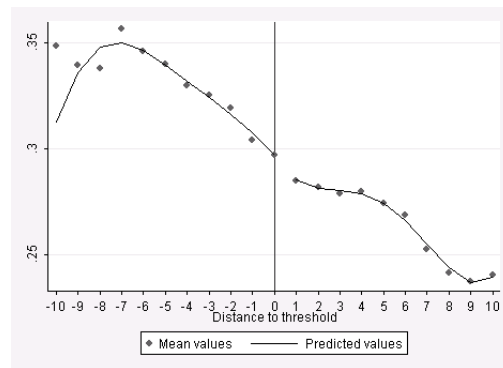


Table 1: Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Panel A: Individual Level All Sample					
FA (%)	3,653,718	0.196	0.397	0	1
Eligible (%)	3,653,718	0.457	0.498	0	1
Register to vote (%)	3,653,718	0.932	0.251	0	1
Registered after the onset of FA ^a (%)	3,406,786	0.283	0.451	0	1
Female (%)	3,653,718	0.588	0.492	0	1
Age in years	3,653,718	38.070	5.599	25	46
Years of schooling	3,653,709	7.068	3.787	0	22
Panel B: Individual Level Female					
FA (%)	2,150,133	0.255	0.436	0	1
Eligible (%)	2,150,133	0.457	0.498	0	1
Register to vote (%)	2,150,133	0.955	0.208	0	1
Registered after the onset of FA ^a (%)	2,053,136	0.292	0.455	0	1
Age in years	2,150,133	37.839	5.678	25	46
Years of schooling	2,150,128	7.108	3.761	0	22
Panel C: Voting Booth Level					
Registered people	103,367	420.015	116.712	6	2,239
Number of votes	103,367	248.412	84.781	1	751
FA (%)	103,367	0.081	0.098	0	1
Eligible (%)	103,367	0.206	0.173	0	1
FA female	103,367	26.554	43.307	0	364
Non-FA female	103,367	81.845	96.730	0	613
Turnout (%)					
First round	51,965	0.607	0.192	0	1
Runoff	51,402	0.609	0.203	0	1
Votes for incumbent (%)					
First round	51,965	0.377	0.138	0	1
Runoff	51,402	0.507	0.144	0	1
Margin of victory ^b (%)					
First round	51,965	0.152	0.212	-1	1
Runoff	51,402	0.279	0.232	-1	1

Source: *Registraduría Nacional*, DNP-DDS. Note: ^aConditional on being registered to vote. ^bMargin of Victory is defined as $\frac{Votes\ Incumbent - Runner\ Up}{Votes\ Incumbent + Runner\ Up}$.

Table 2: RD Regression of Registering to Vote: Men and Women

	(1)	(2)	(3)	(4)
Panel A: Registering to vote				
First Stage				
Eligibility	0.332*** (0.002)	0.295*** (0.003)	0.291*** (0.004)	0.286*** (0.004)
Second Stage				
FA	0.016*** (0.004)	0.019*** (0.006)	0.025*** (0.010)	0.019** (0.009)
R-Squared	0.003	0.003	0.004	
Observations	3,653,709	1,630,197	299,494	101,086
Bandwidth		5	1	0.340
Functional form	Quintic	Cubic	Quadratic	I&K
Panel B: Registering after the onset of FA				
First Stage				
Eligibility	0.332*** (0.002)	0.309*** (0.002)	0.290*** (0.003)	0.285*** (0.004)
Second Stage				
FA	0.031*** (0.006)	0.023*** (0.007)	0.018 (0.012)	-0.024 (0.016)
R-Squared	0.026	0.029	0.022	
Observations	3,406,777	1,524,958	279,344	90,553
Bandwidth		5	1	0.305
Functional form	Quartic	Quadratic	Linear	I&K
Municipality fixed effects	Yes	Yes	Yes	
Demographic covariates	Yes	Yes	Yes	

Note: Standard errors in parenthesis. Sample in panel B is conditional on being registered to vote. Estimations in columns from (1) to (3): are clustered at the household level, include controls for age and schooling, and the functional form of the aligned *SISBEN* score is allowed to be different above and below the threshold. I & K uses an optimal bandwidth algorithm developed by Imbens and Kalyanaraman (2009). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3: RD Regression of Registering to Vote: Women

	(1)	(2)	(3)	(4)
Panel A: Registering to vote				
First Stage				
Eligibility	0.412*** (0.003)	0.367*** (0.003)	0.364*** (0.005)	0.355*** (0.006)
Second Stage				
FA	0.015*** (0.003)	0.019*** (0.005)	0.030*** (0.008)	0.026*** (0.008)
R-Squared	0.006	0.005	0.006	
Observations	2,150,128	962,683	179,212	54,105
Bandwidth		5	1	0.305
Functional form	Quintic	Cubic	Quadratic	I&K
Panel B: Registering after the onset of FA				
First Stage				
Eligibility	0.412*** (0.003)	0.381*** (0.002)	0.364*** (0.004)	0.356*** (0.005)
Second Stage				
FA	0.035*** (0.006)	0.032*** (0.007)	0.026** (0.011)	0.008 (0.014)
R-Squared	0.030	0.031	0.024	
Observations	2,053,131	922,466	171,116	75,919
Bandwidth		5	1	0.428
Functional form	Quartic	Quadratic	Linear	I&K
Municipality fixed effects	Yes	Yes	Yes	
Demographic covariates	Yes	Yes	Yes	

Note: Standard errors in parenthesis. Sample in panel B is conditional on being registered to vote. Estimations in columns from (1) to (3): are clustered at the household level, include controls for age and schooling, and the functional form of the aligned *SISBEN* score is allowed to be different above and below the threshold. I & K uses an optimal bandwidth algorithm developed by Imbens and Kalyanaraman (2009). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4: Fixed Effect Regression: Vote Turnout

Dependent variable:	Vote Turnout in Presidential Elections			
	First Round		Runoff	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
Panel A: All Voters				
Proportion FA	0.070*** (0.010)	0.085*** (0.010)	0.089*** (0.010)	0.090*** (0.011)
R^2 Within	0.41	0.41	0.42	0.42
Observations	52,089	52,089	51,458	51,458
Panel B: Female Voters				
Prop. FA female	0.061*** (0.007)	0.070*** (0.006)	0.084*** (0.008)	0.094*** (0.007)
R^2 Within	0.40	0.40	0.42	0.42
Observations	52,089	52,089	51,458	51,458

Note: OLS robust standard errors in parenthesis. 2SLS standard errors in parenthesis. All regressions include polling station fixed effects and booth level controls. Booth level controls include average characteristics at the booth for: female proportion (panel A), age, household size, children, cohabitation, education level, employment status, homemaker, student status, renter, pensioner, and length of time between the *SISBEN* interview and the elections (length), and all of the previous variables interacted with the distance variable. Standardized coefficients reported. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5: Fixed Effect Regression: Political Support

Dependent variable:	Votes for Incumbent Party Candidate (%)		Margin of Victory (incumb-ru)/total votes	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
Panel A: All Voters				
Proportion FA	0.068*** (0.007)	0.098*** (0.007)	0.072*** (0.007)	0.072*** (0.007)
R^2 Within	0.61	0.61	0.56	0.56
Observations	103,367	103,367	103,367	103,367
Panel B: Female Voters				
Prop. FA female	0.075*** (0.006)	0.100*** (0.005)	0.081*** (0.006)	0.110*** (0.004)
R^2 Within	0.61	0.61	0.55	0.55
Observations	103,367	103,367	103,367	103,367

Note: OLS robust standard errors in parenthesis. 2SLS standard errors in parenthesis. Proportion FA corresponds to the proportion of people at the booth who are FA beneficiaries. Proportion FA female corresponds to the proportion of women at the booth who are FA beneficiaries. Standardized coefficients reported. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All regressions include polling station, election round fixed effects and booth level controls. Booth level controls are defined as in Table 4.

Table 6: RD Regression of Registering to Vote at Points Above and Below the Eligibility Threshold

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: +/-1 point				1 point below the threshold			
Eligibility	-0.079*** (0.003)	0.001 (0.003)	0.006 (0.007)	0.013** (0.006)	-0.079*** (0.001)	-0.126*** (0.002)	0.005** (0.003)	-0.004 (0.002)
FA	0.008 (0.008)	0.008 (0.012)	0.205 (0.624)	0.269 (0.228)	0.013 (0.011)	0.019 (0.013)	-0.621 (0.600)	0.657 (0.767)
R-Squared	0.005	0.004	-0.160	0.006	0.006	0.005	-0.413	
Observations	2150128	1,050,610	138,245	57,059	2,150,128	887,855	224,795	79,032
Bandwidth		5	1	0.427		5	1	0.348
	Panel B: +/- 5 points				5 points below the threshold			
Eligibility	-0.079*** (0.003)	0.001 (0.003)	-0.002 (0.005)	0.021*** (0.005)	0.061*** (0.001)	-0.006*** (0.001)	0.001 (0.001)	0.001 (0.001)
FA	-0.002 (0.011)	1.913 (8.645)	-0.416 (1.278)	0.047 (0.091)	0.000 (0.012)	-0.191 (0.308)	1.746 (4.991)	3.076 (5.162)
R-Squared	0.004	-19.607	-1.049	0.004	0.004	-0.014	-0.589	
Observations	2,150,128	977,578	302,325	101,665	2,150,128	753,488	139,546	60,738
Bandwidth		5	1	0.323		5	1	0.4405
Functional form	Quintic	Cubic	Quadratic	I&K	Quintic	Cubic	Quadratic	I&K
Municipality fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parenthesis. Estimations in columns (1) to (3) and (5) to (7) are clustered at the household level, include controls for age and schooling, and functional form of the aligned *SISBEN* score is allowed to be different above and below the threshold. I & K uses an optimal bandwidth algorithm developed by Imbens and Kalyanaraman (2009). *** p < 0.01, ** p < 0.05, * p < 0.1.

Table 7: RD Regression of Registering to Vote: Women Excluding Potential Beneficiaries to the Child Feeding Program

	(1)	(2)	(3)	(4)
Panel A: Registering to vote				
First Stage				
Eligibility	0.388*** (0.003)	0.353*** (0.004)	0.355*** (0.006)	0.349*** (0.006)
Second Stage				
FA	0.014*** (0.004)	0.020*** (0.006)	0.038*** (0.010)	0.037*** (0.009)
R-Squared	0.006	0.005	0.006	
Observations	1,698,882	755,043	139,245	42,098
Bandwidth		5	1	0.307
Functional form	Quintic	Cubic	Quadratic	I&K
Panel B: Registering after the onset of FA				
First Stage				
Eligibility	0.388*** (0.003)	0.362*** (0.003)	0.348*** (0.004)	0.347*** (0.005)
Second Stage				
FA	0.037*** (0.008)	0.037*** (0.009)	0.032** (0.013)	0.023 (0.014)
R-squared	0.022	0.024	0.017	
Observations	1,617,859	721,687	132,634	75,924
Bandwidth		5	1	0.551
Functional form	Quartic	Quadratic	Linear	I&K
Municipality fixed effects	Yes	Yes	Yes	
Demographic covariates	Yes	Yes	Yes	

Note: Standard errors in parenthesis. Sample in panel B is conditional on being registered to vote. Estimations in columns from (1) to (3): are clustered at the household level, include controls for age and schooling, and the functional form of the aligned *SISBEN* score is allowed to be different above and below the threshold. I & K uses an optimal bandwidth algorithm developed by Imbens and Kalyanaraman (2009). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix

Table A1: RD Regression of Registering to Vote: Men

	(1)	(2)	(3)	(4)
Panel A: Registering to vote				
First Stage				
Eligibility	0.200*** (0.003)	0.187*** (0.003)	0.186*** (0.005)	0.187*** (0.004)
Second Stage				
FA	0.026** (0.013)	0.013 (0.016)	0.013 (0.028)	0.005 (0.020)
R-Squared	0.002	0.002	0.001	
Observations	1,503,581	667,514	120,282	61,599
Bandwidth		5	1	0.514
Functional form	Quintic	Cubic	Quadratic	I&K
Panel B: Registering after the onset of FA				
First Stage				
Eligibility	0.200*** (0.003)	0.187*** (0.003)	0.186*** (0.005)	0.187*** (0.004)
Second Stage				
FA	0.026** (0.013)	0.013 (0.016)	0.013 (0.028)	0.005 (0.020)
R-Squared	0.002	0.002	0.001	
Observations	1,503,581	667,514	120,282	61,599
Bandwidth		5	1	0.390
Functional form	Quartic	Quadratic	Linear	I&K
Municipality fixed effects	Yes	Yes	Yes	
Demographic covariates	Yes	Yes	Yes	

Note: Standard errors in parenthesis. Sample in panel B is conditional on being registered to vote. Estimations in columns from (1) to (3): are clustered at the household level, include controls for age and schooling, and the functional form of the aligned *SISBEN* score is allowed to be different above and below the threshold. I & K uses an optimal bandwidth algorithm developed by Imbens and Kalyanaraman (2009). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A2: Fixed Effect Regression of Political Support by Electoral Round

Dependent variable:	Votes for Incumbent Party Candidate (%)		Margin of Victory (incumb-ru)/total votes	
	OLS (1)	2SLS (2)	OLS (3)	2SLS (4)
Panel B: First Electoral Round				
Proportion FA	0.065*** (0.007)	0.090*** (0.008)	0.069*** (0.007)	0.048*** (0.008)
R ² <i>Within</i>	0.39	0.39	0.45	0.45
Observations	51,965	51,965	51,965	51,965
Panel C: Second Electoral Round				
Proportion FA	0.069*** (0.009)	0.106*** (0.011)	0.073*** (0.008)	0.096*** (0.009)
R ² <i>Within</i>	0.48	0.48	0.55	0.55
Observations	51,402	51,402	51,402	51,402

Note: OLS robust standard errors in parenthesis. 2SLS standard errors in parenthesis. Booth level controls are defined as in Table 4. Standardize coefficients reported. *** p < 0.01, ** p < 0.05, * p < 0.1. All regressions include polling station fixed effects and booth level controls. Booth level controls are defined as in Table 4.