

# GROCERIES FOR VOTES? CLIENTELISTIC STRATEGIES IN MEXICO'S 2012 ELECTION

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## Abstract

This paper evaluates the allegations of vote-buying during the 2012 federal election in Mexico. In particular, we evaluate the effect of the distribution of gift cards to voters before the election date. We estimate the effects of this instance on electoral results by considering the distances between voters' residences and the closest store at which they could cash out the cards. We find significant and opposite effects of the store proximity on the vote shares for the two front-runner candidates in the presidential election, supporting the vote-buying claims. However, the effects are only observable within 10 kilometers of distance from the stores in the urban area of Mexico City and the State of Mexico, and its magnitude falls below the allegations of the opposition. The results follow recent theoretical accounts on the strategies that parties use to target voters and overcome common limitations for measuring the electoral returns of vote-buying.

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# 1 Introduction

The causes and consequences of vote-buying are at the core of the political economy literature. As such, there is a wealth of scholarship on the conditions and strategies that the political elite use to exchange goods for votes (Cox and McCubbins, 1986; Dixit and Londregan, 1996; Stokes, 2005; Nichter, 2008; Finan and Schechter, 2012; Stokes et al., 2013; Gans-Morse, Mazzuca and Nichter, 2014). Simultaneously, there has been an increasing interest in the effects of clientelism on accountability (Besley, 2006; Stokes, 2007; Stokes et al., 2013, Ch. 9), policy outcomes (Keefer and Vlachiu, 2007; Dal Bó, 2007; Desposato, 2007; Baland and Robinson, 2008; Dekel, Jackson and Wolinsky, 2009), and violence (Bratton, 2008; Vicente and Wantchekon, 2009). However, while most of these works implicitly assume that the handouts affect voters' behavior, there is little empirical evidence supporting this claim.

The scarcity of evidence on the electoral effects of clientelism is not fortuitous—the secret ballot thwarts guessing voters' choices for both scholars and parties (Stokes, 2005; Nichter, 2008). To overcome this problem, the extant research on the electoral consequences of vote-buying usually correlates declarations of receiving handouts and electoral preferences expressed in surveys (Cornelius, 2004; Brusco, Nazareno and Stokes, 2004; Greene, 2007, ch. 7; Kramon, 2011). Yet, this approach faces the validity threats of social desirability and selection bias. On the one hand, respondents usually avoid the negative stigma of vote-buying by denying being recipients of any goods, underestimating the prevalence of clientelistic practices (Gonzalez-Ocantos et al., 2012). On the other hand, since the allocation of goods among voters is not random, most of the studies fail to provide voters' counterfactual behavior in the absence of the largess (Guardado and Wantchekon, 2014). Therefore, while many works implicitly assume that the electoral returns of clientelistic practices are guaranteed by voters' responsiveness or the parties' capacity to monitor voters' behavior, the empirical evidence to hold this assumption is still weak.

This article fills the methodological gaps by analyzing the 2012 presidential election in Mexico. Although clientelism is a prevalent practice in the country (Molinar and Weldon, 1994; Cornelius, 2004; Magaloni, 2006; Greene, 2007; Díaz-Cayeros, Estévez and Magaloni, 2012), we focus on an unusual instance of vote-buying: days before the election date, the Institutionalized Revolutionary Party (PRI) allegedly distributed gift cards among citizens in Mexico City and the State of Mexico to cash out in a supermarket chain only after the electoral outcome was announced. By exploiting the distance of voters' residences to the closest store where they could make their cards effective, this event provides a unique opportunity to assess the validity of the accusations and the potential electoral returns of this practice. As we expect that the distances between voters' locations and the stores increase the transaction costs of cashing out the cards, we compare vote shares on precincts that differ in their proximity to the closest store.

The empirical findings suggest the persuasive effects of the gift cards among voters in Mexico City and the State of Mexico. Specifically, we show evidence that proximity to the store has a positive effect on the PRI vote shares within the strongholds of the Democratic Revolution Party (PRD). In contrast, we find null or ambiguous effect on vote shares and turnout rates within the PRI and PAN's strongholds. The persuasion effects hold under different robustness checks and model specifications. While the results support the PRD's allegations of vote-buying, the effects are only perceivable within 10 kilometers of distance from the stores, and its impact on the electoral outcome was marginal to determine the winner of the election.

This analysis relies on the assumption that the location of the stores cannot be explained by any other factor that also accounts for differences in vote shares. Although we cannot test this fact in a direct way, we provide evidence to support this assumption. We first show that the location of the stores in Mexico City and the State of Mexico is uncorrelated with previous electoral results once controlled by sociodemographic characteristics of the precincts. Moreover, we create a series of placebo tests to make sure

that the findings are unique in time and space. We replicate the analysis using the 2006 electoral results as a dependent variable. Since no allegations for using gift cards as a vote-buying strategy appear during the 2006 election, we expect no significant effects for this test. Moreover, we use randomization inference by simulating multiple sets of fake stores with random allocations within the Valley of Mexico. The results of this test show that the findings do not depend of the spatial structure of the data.

There are three substantive contributions of this article. Initially, it provides one of the first estimates of vote-buying that account for the non-random allocation of the handouts. With the exception of [Díaz-Cayeros, Estévez and Magaloni \(2009\)](#) and [Guardado and Wantchekon \(2014\)](#), most of the analyses fail to provide any estimation of the voters' counterfactual behavior in the absence of the handout. This article also complements the findings from [Larreguy \(2013\)](#) and [Larreguy, Marshall and Querubin \(2014\)](#) on estimating the causal effect of parties' and brokers' monitoring capabilities and their effects on vote shares.

Secondly, the identification strategy allows us to test the theoretical predictions of [Gans-Morse, Mazzuca and Nichter \(2014\)](#) regarding the conditions in which political machines use different strategies across voter types. In this paper, we take their setup and tune it up to the case in which parties face two opposition parties and voters differ on their transaction costs for delivering the benefits. By operationalizing the conditions for each of the strategies that the authors suggest, we provide evidence to support the vote-buying allegations.

Finally, our study contributes to the contemporary literature on clientelism in Mexico ([Larreguy, 2013](#); [Larreguy, Marshall and Snyder, 2014](#); [De La O, 2014](#); [Palmer-Rubin and Nichter, 2014](#); [Imai, Park and Greene, Forthcoming](#)), which provide original identification strategies to estimate the prevalence of clientelistic practices in the country. This article distinguishes from the mentioned work by focusing on a specific instance of vote-buying and avoiding the estimation of competing strategies. Furthermore, with the exceptions

of [Serra \(2013a\)](#) and [Simpser \(July 10, 2012\)](#), the assessment of the allegations on the gift cards in 2012 has been unexplored.

The remainder of the paper is organized as follows. First, we discuss the existent methodological limitations to study clientelism and its effects on political behavior. Second, we describe our study case and why this instance provides a unique opportunity to study the returns of clientelism. Next, we outline our theoretical expectations, describe our data and research design, and present our main empirical findings. Finally, we discuss the implications of our results and suggest further lines of research.

## 2 Extant Work

This article addresses three limitations existent in most of the current empirical works on clientelism: weak operationalization, social desirability, and selection bias. In this section, we discuss each of these problems.

The first limitation of measuring the electoral impact of vote-buying is the ambiguity on its definition and operationalization. The concept of vote-buying involves three properties: (1) the discretionary, (2) individual, and (3) *quid pro-quo* provision of private benefits ([Nichter, 2014](#), p. 316; [Stokes et al., 2013](#), ch. 1). However, the literature on vote-buying often misclassifies clientelistic practices that lack at least one of these properties. Examples include activities such as pork-barrel ([Magaloni, 2006](#); [Albertus, 2013](#)), patronage ([Brusco, Nazareno and Stokes, 2004](#)), and programmatic policies ([Rocha Menocal, 2001](#)). Although their allocation might be discretionary, these activities either provide goods other than private or its delivery is not conditioned to the explicit electoral support of the citizen. As a result, the empirical findings in most of the current work on the topic rely on the ambivalent classification of voter buying that each author uses ([Nichter, 2014](#)).

The second limitation for most of the empirical literature on electoral clientelism is the threat of social-desirability bias when using survey data ([Cornelius, 2004](#); [Stokes, 2005](#);

Greene, 2007; Nichter, 2008; Kramon, 2011; Carreras and Irepoglu, 2013). This type of bias appears when respondents falsify their answers in light of what they perceive to be socially accepted (Terkildsen, 1993; Powell, 2013). Therefore, the vote-buying's negative stigma pushes individuals to neglect any clientelistic benefit they received, resulting in the under-reporting of the activity. Although recent developments on survey design provide more valid estimates of the prevalence of clientelism (Gonzalez-Ocantos et al., 2012; Corstange, 2012; Imai, Park and Greene, Forthcoming), experimental surveys are still insufficient to solve the misreporting problems on vote intention and turnout. As most of the surveys administered at a time other than the election date typically underestimate the turnout rate and vote support for the leading candidate (Noelle-Neumann, 1993; Wright, 1993; Atkenson, 1999; Katz and Katz, 2010), it introduces noise to evaluate the returns of clientelism.

A final limitation for estimating the scope of clientelism is selection bias. Since clientelistic benefits are not randomly allocated within the electorate, the account for the counterfactual behavior of voters in the absence of the handout represents a methodological challenge. Potential solutions include comparing of voters' declared preferences in panel surveys (Stokes et al., 2013, p. 56-66; Palmer-Rubin and Nichter, 2014) or matching respondents who only differ on their declared reception of benefits (Díaz-Cayeros, Estévez and Magaloni, 2009; Guardado and Wantchekon, 2014). Yet, these non-experimental solutions assume the voters' unobservable characteristics—such as reciprocity (Finan and Schechter, 2012; Cruz, 2013) or personal links (Auyero, 2000)—are orthogonal to the probability of being benefitted by clientelism.

An alternative solution to the selection bias is the experimental approach to evaluate the effect of a particular issue of the vote decision. For example, in the seminal work of Wantchekon (2003), the author randomizes political platforms across constituencies in Benin, providing evidence that clientelistic campaigns have higher electoral returns than those based on public policy issues. Similarly, Vicente (2014) shows the effects of an

anti vote-buying campaign in Sao Tome and Principe on perceptions of vote-buying and turnout rates in the areas randomly selected for the program.

In sum, the validity threats that arise in most of the extant work limit our knowledge on the electoral returns of vote-buying. This paper contributes to the literature by studying a case that satisfies the conceptual requirements to be classified as vote-buying. Moreover, by exploiting exogenous variation on the contingent distribution of private benefits to voters, this work overcomes potential problems of social desirability and selection biases. In the next section, we briefly describe the nature of the clientelistic approach in Mexico and discuss how this instance provides a unique opportunity to evaluate the effects of clientelism on both turnout and vote choice.

### **3 Political Background: Mexico's 2012 Election**

Mexico's election to replace the outgoing President Felipe Calderón was held on July 1, 2012. His successor at the National Action Party (PAN), Josefina Vázquez Mota, ran against Enrique Peña Nieto of a coalition between the Institutionalized Revolutionary Party (PRI) and the Green Party (PVEM), Andrés Manuel López Obrador of the left-leaning coalition—Party of the Democratic Revolution (PRD), the Citizen Movement (MC), and the Labor Party (PT)—and Gabriel Quadri of the New Alliance Party (PANAL). Peña Nieto led for much of the campaign, and eventually was declared the winner with 38.2 percent of the vote, followed by López Obrador (31.6 percent), Vázquez Mota (25.4 percent), and Quadri (2.3 percent).

Vote-buying allegations arose as the election date approached. Between June 26 and July 16, López Obrador's campaign staff presented six legal complaints at the Federal Electoral Institute (IFE), accusing Peña Nieto and his party operators of clientelistic practices in the State of Mexico—a state governed by Peña Nieto from 2005 to 2011—and the bordering neighborhoods of Mexico City. All these complaints were a core component

of the lawsuit that the PRD, PT and MC presented at the Electoral Federal Court (TEPJF) twelve days after the election day in hopes of nullifying the process.<sup>1</sup>

The vote-buying accusations involved Peña Nieto and his party distributing gift cards with amounts from 100 to 1,000 pesos (\$7.5 to \$75 US dollars) in exchange for voter's support to the PRI's candidates. These cards could be only cashed out in one of the largest supermarket chain stores in the country—*Soriana*—after the election date (Flores-Macías, 2013). To support the charges, López Obrador's coalition presented more than 3,500 gift cards, as evidence of the alleged 1.8 million cards distributed during the election.<sup>2</sup> This even received major attention from media outlets and public opinion. Two weeks after the election day, sixty-four percent of the citizens in the country knew about the vote-buying allegations involving gift cards, and forty-three percent of them supported the allegations from the opposition.<sup>3</sup> Nevertheless, the TEPJF ruled against the complaint, arguing that the mere existence of the cards was not enough evidence to prove that they have been distributed for clientelistic purposes by Peña Nieto and his coalition for clientelistic purposes.<sup>4</sup>

The allegations of vote-buying in this case differ from previous instances in Mexico in at least three ways. First, unlike the overwhelming accounts of clientelistic practices in the countryside, the news reports on the gift-card distribution came from the blue-collar neighborhoods of the State of Mexico and Mexico City. The presence of this event in urban areas suggested that the PRI used different strategies than those usually utilized to mobilize and monitor voters (Molinar and Weldon, 1994; Magaloni, 2006, p. 71-72; Larreguy, 2013; Larreguy, Marshall and Querubin, 2014).

Second, departing previous accounts of discretionary provision of goods before the

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<sup>1</sup>The lawsuit can be downloaded from <http://lopezobrador.org.mx/wp-content/uploads/2012/07/INCONFORMIDADNACIONAL.pdf>

<sup>2</sup>"Reporte PRI miles de tarjetas para despensas en Edomex, denuncia Monreal," *Proceso*, June 28 2012 (<http://www.proceso.com.mx/?p=312490>); "Denuncia el Movimiento Progresista campaña tarjetera en el Edomex," *La Jornada*, June 29, 2012, p. 6; "Triangulan fondos empresas fantasma," *Reforma*, July 14, 2012, p. 3.

<sup>3</sup>[http://www.parametria.com.mx/carta\\_parametrica.php?cp=4499](http://www.parametria.com.mx/carta_parametrica.php?cp=4499)

<sup>4</sup>TEPJF's ruling SUP-JIN-359/2012 was voted and approved on August 30, 2012.



election (Stephen, 2002, p. 298-300; Fox, 1994; Cornelius, 2004), the allegations in 2012 involved the *ex-post* provision of benefits to voters. As Palmer-Rubin and Nichter (2014) highlight, this event called the attention of the media when voters ranted about not being able to cash out what brokers promised before the election.<sup>5</sup> Consider the following example of a woman who received the gift card after turning in a photocopy of her voter ID card. “They told us they were worth 500 pesos (\$37.50), but when we got to the check-out, they were only worth 100 rotten pesos (\$7.50).”<sup>6</sup> The defection of the agreement was not only a profitable deviation for the PRI and its brokers, but also a sign that the party did not want to establish a long term relationship with the vote sellers. (Nichter, 2008).

Finally, anecdotal evidence suggested that the use of gift cards in the election had multiple goals and targeted different types of constituencies. In some cases, voters reported receiving the cards as a goodwill gesture to turnout. We present a quote from a voter in Cuautitlán Izcalli, State of Mexico, suggesting the use of cards as a mobilization strategy:

[His neighbor] knocked my door and told me: ‘Listen, they will give you a gift card.’ After I asked what the card was for, he replied: ‘It is a *Soriana* gift card and you need to take the opportunity.’ (...) They did not tell us anything to anyone while I was there. The only thing they said was ‘we hope you vote for anyone, but vote’<sup>7</sup>

In other cases, voters received the cards only after showing evidence of supporting the PRI—such as a picture of the ballot with the party’s logo marked.<sup>8</sup> Finally, there are

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<sup>5</sup>See, for example, “Mexico elections: claims of dirty tricks cast shadow over Peña Nieto’s victory,” *The Guardian*, July 4, 2012 (<http://www.theguardian.com/world/2012/jul/04/mexico-elections-shadow-pena-nieto>); “Officials Review Mexico Poll Result,” *Wall Street Journal*, July 5, 2012. (<http://online.wsj.com/news/articles/SB10001424052702304550004577507180945059366>); “El ‘Soríanagate’, fraude al voto,” *Proceso*, July 3, 2012. (<http://www.proceso.com.mx/?p=313139>); “Reparten tarjetas a días de elección,” *Reforma*, July 5, 2012, p. 4.

<sup>6</sup>“Mexico Presidential Election: Accusations Of Vote-Buying Grow,” *The Huffington Post*, July 3, 2012. ([http://www.huffingtonpost.com/2012/07/03/mexico-presidential-election-vote-buying\\_n\\_1647857.html](http://www.huffingtonpost.com/2012/07/03/mexico-presidential-election-vote-buying_n_1647857.html))

<sup>7</sup>“Reparten tarjetas a días de elección,” *Reforma*, July 5, 2012.

<sup>8</sup>“Sin fondos, tarjetas Soriana; se dicen timados por el PRI,” *La Jornada*, July 5 2012, p. 40). Moreover, the cards presented by PRD’s officials as evidence of vote-buying were provided by voters who allegedly re-

accounts of brokers conditioning the gift cards to the temporary retention of the voters' ID cards, preventing them from turning out on the election date. We choose the following quote from a voter in Nezahualcoytl, State of Mexico, to illustrate the potential use of the gift cards as part of a demobilizing strategy:

They offered cards with 1,500 pesos conditioned on giving them our voter identification card. They told us not to keep the card and to turn them back after the election date.<sup>9</sup>

In sum, the anecdotal evidence presents multiple and contrasting strategies for using the gift cards as tools for clientelism.

While the literature on clientelism has enriched with the works on the 2012 election in Mexico, little has been done to assess the validity and scope (if any) of the gift-cards strategy alleged by the opposition parties. Using Mexico's 2012 panel survey (Domínguez et al., 2014), several scholars took advantage of its list-experiment design to identify the allocation strategies for parties when handouts provision. De La O (2014) shows that vote-buying is more prevalent within the more corrupt states of the country. Palmer-Rubin and Nichter (2014) use data from the same survey to find the individual determinants of the handouts recipients. Although the findings are not consistent, declarations of receiving a gift are more likely among PRI supporters and poor respondents. The authors explain the lack of significant results in their analysis as an artifact of the survey question, which considers many instances of clientelism, each of which are targeted to a somewhat overlapped population group (Gans-Morse, Mazzuca and Nichter, 2014).

Regarding the effects of clientelism on political behavior, Imai, Park and Greene (Forthcoming) propose a two-step estimator to use the results of the list-experiment as an explanatory variable. Their findings confirm Palmer-Rubin and Nichter's (2014) findings

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gretted selling their vote and "realized the damage they did to the country's democracy" ("López Obrador acusa al PAN de negociar con el PRI," *ADN Político*, July 5, 2012 <http://www.adnpolitico.com/2012/2012/07/05/lopez-obrador-acusa-al-pri-de-comprar-millones-de-votos>). We interpret this as evidence of PRD supporters obtaining the cards and kept them as evidence of vote buying.

<sup>9</sup>"Sin fondos, tarjetas Soriana; se dicen timados por el PRI," *La Jornada*, July 5 2012, p. 40

on political machines targeting different constituencies. Moreover, they report that those who declared selling their vote are less likely to turnout, which increases perceived approval to PRI's Peña Nieto.

On the specific instance of *Soriana's* gift cards, the qualitative accounts from [Simpser \(July 10, 2012\)](#) and [Serra \(2013b\)](#) are skeptical that vote buying in 2012 was decisive to define the result of the election. However, there are no quantitative accounts on the topic. Our goal is then to fill this gap by providing an alternative identification strategy of this instance of vote-buying.

## 4 Theoretical Expectations

This section builds on the work of [Nichter \(2008\)](#) and [Gans-Morse, Mazzuca and Nichter \(2014\)](#) on the different clientelistic strategies for political machines. In both articles, the authors argue that parties' goals for trading private benefits are a function of the citizens' political preferences and turnout costs. Table 1 summarizes the conditions for each of the clientelistic strategies. In short, political machines provide private goods to their core supporters to either mobilize abstentionists or reward loyalist voters. In contrast, opposition voters are targeted to change their vote choice or to remain at home during the election day.

	Table 1: Clientelistic Strategies	
	Favors Opposition	Favors Party
Inclined Not to Vote	Double Persuasion	Turnout Buying
Inclined to Vote	Vote Buying/ Abstention Buying	Rewarding Loyalists

Source: [Gans-Morse, Mazzuca and Nichter \(2014, p. 418\)](#).

We focus on the off-diagonal strategies of the matrix, for the research design allows us to estimate the impact of clientelism on voters' behavior in the absence of the handout.

To build our theoretical expectations, we extend the setup of [Gans-Morse, Mazzuca and Nichter \(2014\)](#) and include two special cases. First, we explore the clientelistic strategies of the political machine when it faces two political parties at opposite sides of the ideological spectrum. Second, departing from previous considerations of parties as the only players facing transaction costs ([Dixit and Londregan, 1996](#)), we assume that voters incur different leaky-bucket costs when receiving the clientelistic benefits. We discuss below empirical expectations to the case study given the different strategies.

## 4.1 Settings

Consider a continuum of citizens distributed along an ideological spectrum  $X \in [-1, 1]$ . There are three political parties competing in the election. One of them, identified as the machine party ( $M$ ), has the capacity and motivation to provide private benefits  $b$  to the voters for electoral purposes.<sup>10</sup> The other two parties are at the ideological left ( $L$ ) and right ( $R$ ) of the machine party. For simplicity, we assume that the ideological positions of the non-machine parties are at the extremes of the spectrum (i.e.,  $X^L = -1$  and  $X^R = 1$ ).

Every voter  $i$  is defined by her ideological preferences  $x_i$  and turnout costs  $c_i$ . We allow  $c_i$  to have negative values to capture the potential abstention costs due to civic engagement or social pressures ([Riker and Ordeshook, 1968](#)). In this case, a voter of type  $(x_i, c_i)$  who votes for party  $P \in \{L, M, R\}$  derives a utility

$$U_i^P(x_i, c_i) = -|x^P - x_i| - c_i \quad (1)$$

A voter is willing to turnout only when  $U_i^P(x_i, c_i) \geq 0$ . From equation 1, we identify those citizens supporting a party other than the political machine as those with type  $(x_i, c_i)$  in which  $\min\{|x_i - x^L|, |x_i - x^R|\} \leq |x_i - x^M|$ . Similarly, we identify those likely to turnout as those with negative turnout costs,  $c_i < 0$ , and  $-|x_i - x^P| - c_i \geq 0$ .

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<sup>10</sup>In other words, we assume that politicians in Party  $M$  are *pragmatists* ([Szwarcberg, 2013](#)).

We also assume that private benefit  $b_i$  derives a utility on voter  $i$ 's as a function  $b_i(d) = \frac{b}{d}$ , where  $d$  represents the leaky-bucket costs to the voters when cashing out the benefits  $b$ . We describe below the possible strategies for the political machine and its allocation of resources given the ideological position of the voters and their potential costs.

**Turnout-buying** If risk-averse politicians seek to maintain their electoral stakes, they will prioritize the goods delivery to their core supporters (Cox and McCubbins, 1986). This argument implies that parties will look to mobilize those voters who are ideologically closer to the machine and potential abstainers (Nichter, 2008). In this case, a turnout-buying benefit ( $b_i^{TB}(d)$ ) to voter  $i$  who supports party  $M$  will compensate her turnout-buying costs as long as  $U^P(x_i, c_i) + b_i^{TB}(d) \geq 0$ , which, in equilibrium, equals to:

$$b_i^{TB} = d(-|x_i - x^M| + c) \quad (2)$$

**Abstention-buying** When the machine targets supporters of rival parties, it has two available strategies. The first alternative is to convince voters to stay at home during the election day (Cox and Kousser, 1981). In this case, the abstention buying benefit  $b_i^{AB}(d)$  should compensate voter's abstention cost and the utility that she refrains from not voting for her preferred party (Gans-Morse, Mazzuca and Nichter, 2014, p. 422). Consider first the case of a voter  $i'$  who is ideologically closer to party  $L$  and is likely to turnout. In this case, the optimal magnitude for abstention buying  $b_{i'}^{AB}$  should make up for her turnout and ideological utility,  $b_{i'}^{AB}(d) \geq U^P(x_{i'}, c_{i'})$ , which inequality binds as follows

$$b_{i'}^{AB} = d(x_{i'} - 1 - c) \quad (3)$$

Similarly, consider now the allocation of benefits to a voter of type  $i''$  who is willing to turnout and vote for party  $R$ . To convince her to stay at home, voter  $i''$  must receive a benefit  $b_{i''}^{AB}(d)$  such that:

$$b_{i''}^{AB} = d(x_{i''} - 1 - c) \quad (4)$$

**Vote-buying** An alternative strategy to the party machine is to persuade those mobilized opposition voters to change their electoral choice. In this case, the machine party targets those voters willing to compromise their ideological preferences in exchange for the largesse. Similarly to the analysis for demobilization, consider the case of a voter  $i'$  who is ideologically closer to  $L$ . In order to convince the voter to change their vote choice, the machine party has to offer a vote-buying benefit  $b_{i'}^{VB}(d)$  that overrides the ideological costs of not voting for its preferred party,  $-|x_{i'} - x^M| - c_i + b_{i'}(d) \leq -|x_{i'} - x^L| - c_i$  (Stokes, 2005, p. 319). In this case, the inequality solves by  $b_{i'}^{VB}$  as:

$$b_{i'}^{VB} = d(x_M - 1 - 2x_{i'}) \quad (5)$$

Observe that the magnitude of the benefit increases with the (1) ideological polarization between  $M$  and the voter  $i$  and (2) the size of the transaction costs  $d$ . Similarly, the magnitude of benefit  $b_{i''}^{VB}(d)$  to persuade a voter  $i''$  to vote for party  $M$  even when she is ideologically closer to party  $R$ , the size of the optimal vote-buying benefit is:

$$b_{i''}^{VB} = d(2x_{i''} - 1 - x_M) \quad (6)$$

## 4.2 Party Strategies

The machine party decides which of these strategies to pursue when allocating resources to opposing voters by considering the net benefits of each strategy. As Gans-Morse, Mazuza and Nichter (2014, p. 423) argue, vote buying is the most attractive strategy, for it not only takes one vote away from the opposition but it also adds one to its own vote count. Therefore, the machine party is willing to pay twice as much for vote buying as it would pay for abstention buying. What follows is to assess the conditions in which persuading

voters is a more efficient strategy than demobilizing them. Consider again voter  $i'$  who is inclined to vote for party  $L$ . The machine party chooses to buy the vote of  $i'$  as long as  $b_{i'}^{VB} \leq 2b_{i'}^{AB}$ . This inequality yields to:

$$x_M - 1 - 2x_{i'} \leq 2(x_{i'} - 1 - c_i) \quad (7a)$$

$$c_{i'} \leq -\frac{x_M + 1}{2} \quad (7b)$$

Likewise, the machine party compares the cost-effectiveness of both strategies on voter  $i''$ . In this case, vote-buying is a more efficient strategy whenever  $b_{i''}^{VB} \leq 2b_{i''}^{AB}$ , which inequality is solved as follows:

$$2x_{i''} - 1 - x_M \leq 2(x_{i''} - 1 - c_i) \quad (8a)$$

$$c_{i''} \leq -\frac{x_M - 1}{2} \quad (8b)$$

Equations 7 and 8 show that the propensity for the machine party for vote buying over abstention buying depends on the ideological position of party  $M$ . In this case, if the political machine is ideologically closer to the left party (that is,  $x_M < 0$ ), then it is cost-effective to buy more votes among the supporters for  $L$  than for  $R$ . In contrast, as the ideological position of the party machine gets closer to right party (that is, when  $x_M \rightarrow x_R = 1$ ), there will be more voters on the right side of the ideological spectrum who will be targeted for vote buying, while voters closer the party  $L$  will be more likely to receive benefits in order to abstain. The proposition below summarizes this result.

**Proposition:** *If a machine party engages in electoral clientelism and faces two parties, it will allocate more resources for vote buying among those voters supporting the parties ideologically closer to the machine. In contrast, abstention buying is a more effective strategy among supporters of the more ideologically distant party.*

We use the implications of this model to derive the hypothesis of our study case.

## 5 Hypotheses, Data, and Identification Strategy

### 5.1 Hypotheses

The vote-buying instance that the opposition in Mexico alleged in 2012 provides a unique opportunity to evaluate the plausibility of each strategy. As described in Section 3, the PRD claimed the distribution of almost 1.8 million cards from a unique supermarket chain (henceforth *Soriana*) after the election. Unlike the handouts normally distributed in vote-buying instances in Mexico—e.g., cash, kitchen appliances, or intimidation (Cornelius, 2004)—the provision of gift cards implies supplementary leaky-bucket costs to the voters on top to the costs stated in standard models. To enjoy the benefits from the cards, the voter should go to the store and buy the goods. That is, the voter’s net utility of the gift card is conditional to her opportunity cost (i.e., gas money or public transportation fees and time) of buying groceries at her closest *Soriana* store after the election. Therefore, we assume that the transaction costs for a voter increase with the distance between her residence and the closest *Soriana*, dissuading the potential effects on her electoral behavior.

We therefore use the proximity of voters’ residency to the *Soriana* stores to evaluate the strategies available to Peña Nieto’s operators. First, if the gift cards were used for mobilization strategies, we are expecting to observe a significant positive effect on the proximity to a *Soriana* store on voting for Peña Nieto among the PRI’s strongholds with a previous low turnout rate. Since the machine party would target voters for mobilization, the effects should be more eminent among those potential abstainers who support the PRI and live close to the grocery store to cash out their cards. We summarize the empirical implication of a turnout-buying hypothesis below.

**Turnout-buying Hypothesis:** *Proximity to a Soriana is associated with an increase in the votes for Peña Nieto within the low-mobilized PRI’s strongholds.*

Regarding the strategies among opposition voters, we expect to observe differential effects depending of the identity of the voters. On the one hand, PAN’s voters will be more



likely to be targeted for abstention buying. As some of the news reports account, voters in some cases received the gift card in temporary exchange for their voters' identification cards, making them unable to turnout. Since supporters of Vázquez Mota were ideologically distant from the PRI, the cost for persuading them was relatively higher than when targeting a PRD's voter. Instead, we expect that the machine party used the gift cards among PAN's voters to keep them at home, and the results should be perceivable when measuring changes in turnout rates.

**Demobilization Hypothesis:** *Proximity to a Soriana store is associated with a decrease in turnout among the high-mobilized PAN's strongholds.*

Finally, among the highly-mobilized PRD's strongholds, the proximity to the store should have a significant positive effect on voting for Peña Nieto and a negative effect on voting for López Obrador. As scholars have systematically accounted, the PRI is not only in the middle of the two major opposition parties, but also closer to the PRD on economic and social issues (Greene, 2007; Moreno, 2003). Therefore, we expect that mobilized PRD voters are more likely to be targeted for vote buying. If this occurs, PRD voters living close to a Soriana store will be more likely to change their vote choice towards the PRI's candidate. We summarize our empirical expectation below.

**Vote-buying Hypothesis:** *Proximity to a Soriana store is associated with an increase in the votes for Peña Nieto and a decrease in the votes for López Obrador within the high-mobilized PRD's strongholds.*

In sum, if the particular instance of clientelism is a persuasion strategy, those who benefit from the largesse should electorally support an alternative that they would not do in the absence of a private benefit. Alternatively, if the clientelistic strategy is to mobilize voters, handout recipients would increase their political participation. We exploit the exogenous locations of voters to the closest store to find the counterfactual behavior of voters in the absence of the largesse.

## 5.2 Data

The data for the empirical analysis combine a novel measurement of store proximity, local socioeconomic characteristics, and electoral outcomes at the precinct level. Our unit of analysis is the electoral precinct, which is the building block of the electoral administration in Mexico and groups voters by their residential location. To test the validity of the news reports and opposition allegations, we focus our analysis on the precincts in Mexico City and the State of Mexico, where the evidence for this instance of vote-buying originates.

The outcome of interest is candidates' vote share in the 2012 presidential election. This variable measures the proportion of registered voters in every precinct who cast a vote for any given candidate. This measurement allows us to register swings in the support for the candidates and their parties without conditioning for turnout (Larreguy, Marshall and Querubin, 2014). The robustness check replicates the analysis with two alternative specifications of the dependent variable. First, we consider only the vote share that each candidate gets given the total number of votes at the polling station. Second, we consider the change in the support for each of the three main parties and coalitions between 2009 and 2012. Both alternative dependent variables provide similar results.

The main explanatory variable in this analysis is the proximity from each electoral precinct to the closest *Soriana* store. This variable was built using the information on the electoral precincts' geographical boundaries from the Federal Electoral Institute's website<sup>11</sup> and the addresses of the *Soriana* stores opened by July of 2012.<sup>12</sup> To build this variable, we estimate the geographic coordinates of every *Soriana* store and calculate the Euclidean distance between every precinct centroid and the stores. Since we assume the marginal transaction costs increase with distance, we calculate our *Proximity* variable as the inverse distance in meters between the centroid of the precinct and the closest *Soriana*

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<sup>11</sup>[http://www.ine.mx/archivos3/portal/historico/contenido/interiores/Detalle\\_geografia\\_electoral\\_y\\_cartografia\\_transparencia-id-04a9d8bd4ac04210VgnVCM1000000c68000aRCRD/](http://www.ine.mx/archivos3/portal/historico/contenido/interiores/Detalle_geografia_electoral_y_cartografia_transparencia-id-04a9d8bd4ac04210VgnVCM1000000c68000aRCRD/)

<sup>12</sup><http://www1.soriana.com/site/default.aspx?p=3121>. Accessed on July 7, 2012.

store.

We include electoral and socioeconomic controls at the precinct level to support our identification strategy. Electoral data comes from the IFE’s website.<sup>13</sup> Specifically, we use the voting results at the precinct level and turnout rates for the 2012, 2009, and 2006 federal elections. We also include a set of socioeconomic controls at the precinct level using the the 2010 Census data <sup>14</sup>. The variables include information about the population in the precinct, their education level, and their access to different basic and leisure services. The summary statistics of these variables are in Table A in the Appendix.

### 5.3 Identification Assumption

A key premise of this analysis is that the location of the *Soriana* stores is uncorrelated with previous electoral results after controlling for observable characteristics of the precincts. While we provide multiple validation tests for this assumption later in the article, this section discusses the plausibility of premise.

By July of 2012, there were 595 *Soriana* stores throughout the country, from which seventy-one of them were in Mexico City and the State of Mexico. The company is headquartered and has presence in the northern region of the country since the late 1960s. However, it was only in 2005 that it opened its first store in Mexico’s central region, as an expansion strategy after the acquisition of another supermarket chain. Therefore, the new *Soriana* in Mexico City and the State of Mexico mostly replaced the existing store locations from the acquired company. It is expected then that the stores’ allocation logic of the stores responds to the commercial strategy by positioning itself within the urban working-class neighborhoods of the country rather than considering any electoral benefit.

As Figure 1 shows, the location of seventy-one of the stores in the Federal District and in the State of Mexico are in the low-income neighborhoods of Mexico City and Toluca.

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<sup>13</sup><http://www.eleccionesenmexico.org.mx/>

<sup>14</sup><http://gaia.inegi.org.mx/geoelectoral/viewer.html>

We test for this conjecture by exploring the correlates of the *Proximity* variable and electoral results.<sup>15</sup> Table 2 presents the OLS results with and without sociodemographic controls, showing that the effects of the electoral variables on *Proximity* disappear once the sociodemographic controls are included. Moreover, as Table B in the Appendix shows, the electoral variables barely add explanatory power to the regressions as the value for the  $R^2$  does not change when taking the vote shares from the models. To make sure that the correlation results are not driven by rural precincts, columns (3) through (5) replicate the analysis considering only those precincts at forty, thirty, and twenty kilometers from the closest *Soriana*. In this case, the only significant correlation is the share of votes for the PAN in 2006, which can be explained by the fact that the largest shares for the PAN are in the urban areas. We can then conclude that the allocation of the *Soriana* stores in Mexico between 2005 and 2012 did not respond to electoral goals but to marketing purposes.

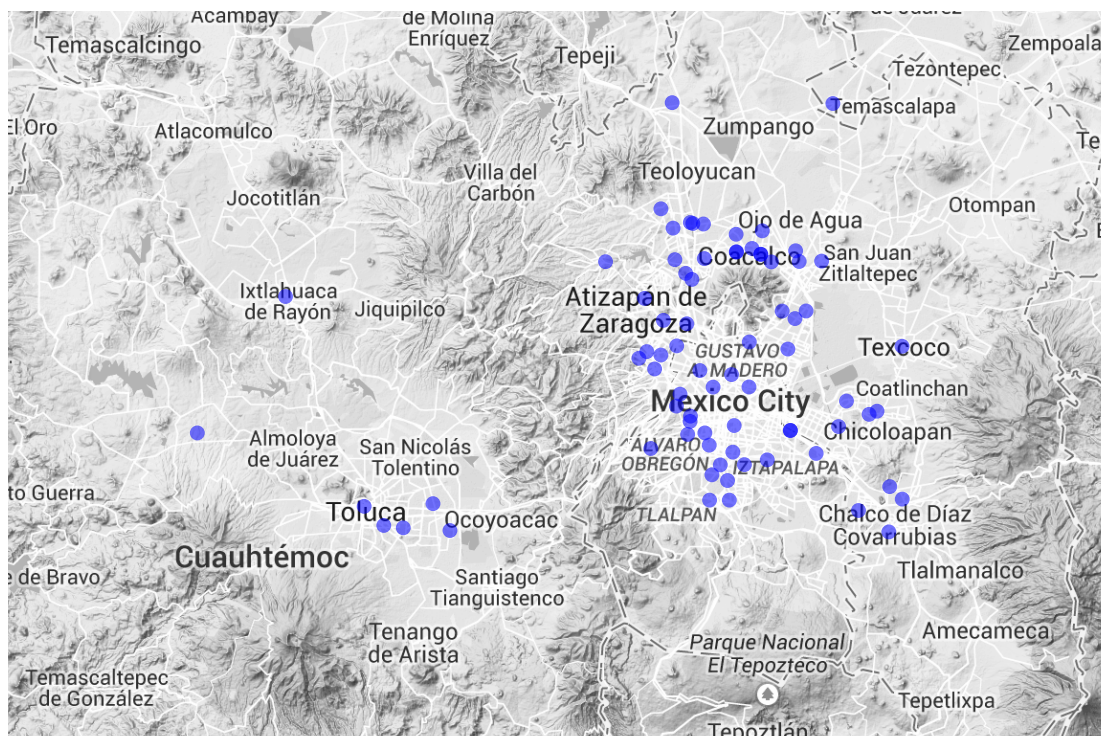


Figure 1: Location of the *Soriana* stores in Mexico City and the State of Mexico.

<sup>15</sup>This test is based on Enikopolov, Petrieva and Zhuravskaya (2011).

Table 2: Correlates of the Location of *Soriana* Stores in 2012. Federal District and State of Mexico.

	All observations		40 kms.	30 kms.	20 kms.
Proximity to <i>Soriana</i> stores	(1)	(2)	(3)	(4)	(5)
<i>Electoral Controls</i>					
PRI Vote Share, 2009	−0.001* (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
PRD Vote Share, 2009	−0.002* (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
PAN Vote Share, 2009	−0.002* (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
Turnout, 2009	0.001 (0.001)	0.0003 (0.001)	0.0004 (0.001)	0.0004 (0.001)	0.0004 (0.001)
PRI Vote Share, 2006	0.001 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)
PRD Vote Share, 2006	0.001 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)
PAN Vote Share, 2006	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.003* (0.001)
Turnout, 2006	−0.0001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
<i>Socioeconomic Controls</i>					
Municipal dummies	✓	✓	✓	✓	✓
N	11,557	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.062	0.068	0.063	0.059	0.055
F Statistic	5.024*** (df = 150; 11406)	4.852*** (df = 172; 11383)	4.700*** (df = 159; 11055)	4.551*** (df = 150; 10812)	4.456*** (df = 136; 10496)

Notes:

\*\*\* Significant at the 0.1 percent level.

\*\* Significant at the 1 percent level.

\* Significant at the 5 percent level.

## 6 Results

### 6.1 Benchmark Results

To estimate the persuasion effects, let  $VoteShare_{i,j}$  be the proportion of registered voters in precinct  $i$  voting for a candidate  $j \in \{\text{Peña Nieto, López Obrador, Vázquez Mota}\}$  in the 2012 presidential election and  $Proximity_i$  be the inverse distance of precinct  $i$  to the closest *Soriana* store. Let also  $Stronghold_{i,k}$  be a dummy variable with a value of 1 if party  $k \in \{PRI, PRD, PAN\}$  got more than fifty percent of the votes in precinct  $i$  during the 2009 federal elections. Finally, let  $HighTurnout_i$  be a dummy variable with the value of 1 if the turnout rate in the 2009 federal elections is equal to or greater than one standard deviation to the mean turnout in the sample. We estimate then the following model:

$$\begin{aligned}
VoteShare_{i,j} = & \beta_0 + \beta_1 Proximity_i + \beta_2 Stronghold_{i,k} + \beta_3 HighTurnout_i + \\
& \beta_4 (Stronghold_{i,k} \times HighTurnout_i) + \beta_5 (Stronghold_{i,k} \times Proximity_i) + \\
& \beta_6 (HighTurnout_i \times Proximity_i) + \beta_7 (Stronghold_{i,k} \times HighTurnout_i \times Proximity_i) + \\
& \beta_8 \mathbf{E}_i + \beta_9 \mathbf{X}_i + \lambda_m + \epsilon_j^i
\end{aligned} \tag{9}$$

Where  $\mathbf{E}_i$  is a vector of electoral outcomes in the precinct during the 2009 and 2006 elections,  $\mathbf{X}_i$  is a set of sociodemographic controls at the precinct level, and  $\lambda_m$  are the municipal fixed effects. All models include robust standard errors clustered by electoral district. With this model, the main parameter of interest,  $\beta_7$ , captures the differential effects of the proximity to a *Soriana* store in the strongholds for each party with a high turnout lagged rate.

To estimate the mobilization effects, let  $Turnout_i$  be the number of registered voters in the precinct who cast a vote in the 2012 presidential election and  $LowTurnout_i$  be a dummy variable with the value of 1 if the turnout rate in the 2009 federal election is equal to or less than one standard deviation of the mean turnout in the sample. The estimation for turnout is the following:

$$\begin{aligned}
Turnout_i = & \beta_0 + \beta_1 Proximity_i + \beta_2 Stronghold_{i,k} + \beta_3 HighTurnout_i + \beta_4 LowTurnout_i + \\
& \beta_5 (Stronghold_{i,k} \times HighTurnout_i) + \beta_6 (Stronghold_{i,k} \times Proximity_i) + \\
& \beta_7 (HighTurnout_i \times Proximity_i) + \beta_8 (Stronghold_{i,k} \times Proximity_i) + \\
& \beta_9 (Stronghold_{i,k} \times HighTurnout_i \times Proximity_i) + \beta_{10} (LowTurnout_i \times Proximity_i) + \\
& \beta_{11} (Stronghold_{i,k} \times LowTurnout_i \times Proximity_i) + \beta_{12} \mathbf{E}_i + \beta_{13} \mathbf{X}_i + \lambda_m + \epsilon_j^i
\end{aligned} \tag{10}$$

In this case, the test for the abstention-buying hypothesis is captured by  $\beta_{11}$ , which represents the effect of store proximity within the party strongholds with a low turnout rate. The turnout-buying hypothesis expects a positive and significant coefficient estimate

within the PRI strongholds with a low lagged turnout rate. Meanwhile, the abstention-buying hypothesis expects a negative estimate within the PAN strongholds with a low turnout rate during the previous election.

Table 3 shows the regression results for turnout and vote shares to the three main candidates during the 2012 presidential election. Panel A presents the results for PRI's Peña Nieto, the candidate accused of using illegal resources for clientelistic practices. Panel B features the results for the PRD's López Obrador, the second-place candidate who claimed his electoral defeat as the result of the vote-buying strategies with the gift cards. Panel C looks at the effect for PAN's Vázquez Mota, the candidate for the incumbent party who ended third in the presidential race. Finally, panel D shows the effects on voter turnout. To rule out the effect of rural precincts, columns (4)-(6) present the results for the analysis of the precincts within 20, 30, and 40 kilometers to a *Soriana* store. The regression results with the estimates for all the covariates are in the Appendix.

The effect of *Proximity* has heterogeneous effects in the mobilized strongholds—those precincts with at least fifty percent of the registered voters supporting a party in the previous election and a turnout rate at least one standard deviation above the mean turnout in the sample—for the two front-runner candidates.<sup>16</sup> The vote of Peña Nieto was significantly higher in the mobilized PRD strongholds, and the magnitude of this effect increases with the proximity to the store. For example, the vote for Peña Nieto in the PRD's mobilized strongholds at two kilometers from a *Soriana* is on average nine percent higher than the vote share in the precincts with similar covariates at three kilometers from the store. When measuring the effect of *Proximity* in the same precincts on the vote for López Obrador, the estimates are negative and significant. The magnitude of the effect is similar to those reported for the PRI. The coefficients for other mobilized party strongholds on the vote shares for any of the candidates are indistinguishable from zero. These results are consistent with the vote-buying hypothesis, which sustains that the gift cards were

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<sup>16</sup>As expected, the effect of *Proximity* by itself is indistinguishable from zero in almost all the models (see Appendix).

Table 3: Effects of the Location of *Soriana* stores on Voting Behavior in the 2012 Presidential Election

	All Observations			40 kms.	30 kms.	20 kms.
Panel A: Peña Nieto vote share	(1)	(2)	(3)	(4)	(5)	(6)
Proximity $\times$ PRI stronghold $\times$ High Turnout	1.31 (2.38)	0.72 (2.30)	-3.64 (1.89)	-3.73* (1.83)	-3.73* (1.77)	-3.45* (1.69)
Proximity $\times$ PRD stronghold $\times$ High Turnout	359.80*** (66.93)	271.31*** (65.29)	149.87* (64.32)	253.58*** (76.30)	362.82*** (79.39)	349.38*** (84.07)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-25.47 (20.84)	-1.73 (20.19)	-10.05 (16.71)	0.09 (17.41)	8.51 (17.27)	-0.90 (17.89)
Electoral Controls	✓	✓	✓	✓	✓	✓
Socioeconomic Controls		✓	✓	✓	✓	✓
Municipal dummies			✓	✓	✓	✓
N	11,557	11,556	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.83	0.84	0.90	0.90	0.90	0.89
F Statistic	2,400.83*** (df = 23; 11533)	1,436.42*** (df = 42; 11513)	539.57*** (df = 182; 11373)	575.67*** (df = 169; 11045)	574.93*** (df = 161; 10801)	596.52*** (df = 147; 10485)
	All Observations			40 kms.	30 kms.	20 kms.
Panel B: López Obrador vote share	(1)	(2)	(3)	(4)	(5)	(6)
Proximity $\times$ PRI stronghold $\times$ High Turnout	-4.75 (2.46)	-0.29 (2.29)	0.82 (1.86)	0.86 (1.80)	1.19 (1.78)	0.83 (1.73)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-419.11*** (69.21)	-358.05*** (64.99)	-37.89 (63.16)	-174.33* (74.99)	-217.02** (79.51)	-299.51*** (86.41)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-38.88 (21.55)	-43.18* (20.09)	-22.25 (16.40)	-22.64 (17.11)	-22.33 (17.30)	-31.03 (18.38)
Electoral Controls	✓	✓	✓	✓	✓	✓
Socioeconomic Controls		✓	✓	✓	✓	✓
Municipal dummies			✓	✓	✓	✓
N	11,557	11,556	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.85	0.87	0.92	0.92	0.92	0.92
F Statistic	2,888.63*** (df = 23; 11533)	1,883.11*** (df = 42; 11513)	717.66*** (df = 182; 11373)	782.38*** (df = 169; 11045)	773.85*** (df = 161; 10801)	828.76*** (df = 147; 10485)
	All Observations			40 kms.	30 kms.	20 kms.
Panel C: Vázquez Mota vote share	(1)	(2)	(3)	(4)	(5)	(6)
Proximity $\times$ PRI stronghold $\times$ High Turnout	0.01 (1.87)	-0.79 (1.77)	-0.003 (1.43)	-0.09 (1.35)	-0.04 (1.29)	-0.31 (1.24)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-205.47*** (52.59)	-67.39 (50.37)	-95.78* (48.60)	-79.47 (56.37)	-133.00* (57.71)	-1.07 (61.94)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-1.47 (16.37)	-21.69 (15.57)	-3.77 (12.62)	-2.81 (12.86)	-6.25 (12.56)	-7.03 (13.18)
Electoral Controls	✓	✓	✓	✓	✓	✓
Socioeconomic Controls		✓	✓	✓	✓	✓
Municipal dummies			✓	✓	✓	✓
N	11,557	11,556	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.85	0.86	0.92	0.92	0.93	0.94
F Statistic	2,795.24*** (df = 23; 11533)	1,702.27*** (df = 43; 11512)	673.60*** (df = 183; 11372)	789.91*** (df = 170; 11044)	894.43*** (df = 162; 10800)	1,040.12*** (df = 148; 10484)
	All Observations			40 kms.	30 kms.	20 kms.
Panel D: Turnout	(1)	(2)	(3)	(4)	(5)	(6)
Proximity $\times$ PRI stronghold $\times$ High Turnout	-1.25 (2.49)	1.34 (2.34)	-2.50 (2.18)	-2.70 (2.18)	-2.59 (2.19)	-2.99 (2.17)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-356.75*** (69.75)	-216.80** (66.09)	-85.85 (73.99)	-51.23 (90.77)	29.43 (97.73)	66.02 (107.91)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-67.12** (21.72)	-51.78* (20.44)	-23.86 (19.22)	-15.24 (20.72)	-16.39 (21.27)	-36.07 (22.97)
Proximity $\times$ PRI stronghold $\times$ Low Turnout	-3.64 (13.19)	-5.40 (12.36)	2.66 (11.48)	1.96 (11.43)	1.91 (11.43)	1.01 (11.26)
Proximity $\times$ PRD stronghold $\times$ Low Turnout	31.50*** (8.08)	26.07*** (7.58)	20.34** (7.02)	19.65** (7.00)	19.13** (7.01)	17.97** (6.92)
Proximity $\times$ PAN stronghold $\times$ Low Turnout	-196.32** (70.10)	-282.95*** (67.20)	-227.26*** (62.93)	-235.79*** (62.84)	-236.52*** (62.95)	-238.45*** (62.12)
Electoral Controls	✓	✓	✓	✓	✓	✓
Socioeconomic Controls		✓	✓	✓	✓	✓
Municipal dummies			✓	✓	✓	✓
N	11,528	11,527	11,527	11,189	10,937	10,607
R <sup>2</sup>	0.70	0.74	0.78	0.78	0.78	0.78
F Statistic	874.88*** (df = 31; 11384)	650.99*** (df = 50; 11364)	213.27*** (df = 190; 11224)	229.23*** (df = 159; 10557)	234.79*** (df = 150; 10393)	251.98*** (df = 137; 10111)

Notes:

\*\*\* Significant at the 0.1 percent level.

\*\* Significant at the 1 percent level.

\* Significant at the 5 percent level.



used by PRI's brokers to shift the votes of PRD supporters who were likely to turnout.

Panel D on Table 3 shows that store proximity has no significant effect on turnout within the mobilized strongholds. These null findings provide additional evidence that the effects observed on the candidates' vote shares are due more to a shift on the vote choices rather than increases in turnout. Moreover, we find no evidence to support the turnout-buying hypothesis. The effect of *Proximity* within the PRI's strongholds with low turnout is not statistically significant. Finally, there is ambiguous evidence to support the abstention-buying hypothesis. On the one hand, and supporting the demobilization hypothesis, there is a negative effect on turnout among the low mobilized PAN's strongholds. The magnitude of this effect is similar to what was observed for the vote-buying hypothesis within the PRD strongholds. On the other hand, there are positive and significant effects on turnout within the low-mobilized PRD's strongholds. The magnitude of this effect, however, is barely observable, and it disappears within the first kilometer of distance to the store.

Overall, the results show that while Peña Nieto's vote shares were higher in those mobilized PRD strongholds that were close to the stores, López Obrador's vote share decreased in the same precincts. We find no evidence supporting the mobilization strategies, for the proximity to the store within the PRI strongholds is statistically undistinguishable from zero. Finally, we observe a negative effect on turnout within the low-mobilized PAN strongholds, providing partial support for the abstention-buying hypothesis.

## 6.2 Robustness

In this section we test the robustness of the results to alternative codings for the dependent variable and the main explanatory effects. All the results for this section are available in the Appendix.

We test for two specifications of the dependent variable. First, Table C shows the results by replacing the dependent variable to the proportion of votes cast during the

election that go to each candidate. This alternative specification evaluates the benchmark results without considering variations in turnout rates. Moreover, Table D considers the changes in the parties' vote shares between 2009 and 2012. Both estimations show consistent and similar effects to those found for the benchmark results.

Additionally, we explore the persistence of the effects under different specifications for the key dependent variables. Table E shows the results when store proximity considers driving distance rather than Euclidean distance. To create this alternative code, we build a driving proximity network using the road information from the Open Street Map project,<sup>17</sup> and estimate the shortest path length between every precinct's centroid and the *Soriana* stores.<sup>18</sup> The results with this variable are similar in significance and larger in magnitude to what presented on the benchmark results.

Finally, Table F presents the results by identifying the party strongholds given their relative, rather than the absolute, vote shares for the party. In this case, instead of identifying those precincts where the party got fifty percent of the votes in the previous election, we label party strongholds as those precincts with a support for a party greater than one standard deviation above the mean support in the sample. The results are consistent to what appeared in the benchmark analysis.

### 6.3 Placebo Tests

To test the validity of our key dependent variable—the proximity to the *Soriana* stores—we exploit the timing and location of the stores in the State of Mexico and Mexico City to construct two placebo treatments. First, a potential threat to the validity of the analysis is that the results are consistent over time and are spurious to the instance of vote-buying

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<sup>17</sup><http://www.openstreetmap.org/>

<sup>18</sup>This network analysis estimates the possible paths  $\mathcal{P}$  from every origin to any destiny and uses Dijkstra's (1959) algorithm to find the path  $p$  with the shortest length in terms of meters  $m$ . Similar to our original measurement of proximity, we calculate our *DrivingProximity<sub>i</sub>* variable as follows:

$$DrivingProximity_i = \frac{1}{\min_{p \in \mathcal{P}} m(p)} \quad (11)$$

in 2012. If that is the same, we should observe similar results for the analysis of the 2006 election, implying that the location of the *Soriana* stores, established in Mexico City since 2007,<sup>19</sup> is endogenous to the electoral results. Otherwise, the location of the stores in 2012 should not have a noticeable effect in the party strongholds during the previous presidential election. Table 4 presents the results of estimating the distances of the precincts to the stores opened by July of 2012 on the vote for the three main candidates and turnout rates in the 2006 presidential election. Unlike estimations for the 2012 election, the coefficients for the main regressors in this placebo test are statistically undistinguishable from zero.

The second placebo test uses randomization inference to account for a potential arbitrary error structure in the data (Gerber and Green, 2012; Erikson, Pinto and Rader, 2014). If the precincts close to the stores share similar observable characteristics, it might be the case that the results are due to a shock unrelated with the clientelistic instance discussed above. To rule out the possibility that the spatial correlation of the data leads to a false-positive result, we compare the observed statistics from the benchmark results to a series of simulated regressions.

Using the procedure suggested by Sanchez de la Sierra (2014), we simulate one thousand samples of seventy-one fake store locations. For every set of fake stores, we recalculate the proximity variable and estimate its effects on the vote shares for every candidate in 2012. For the purpose of this analysis, the statistics of interest are the *Student's t* scores for the (*Proximity*  $\times$  *PRDstronghold*  $\times$  *HighTurnout*) interaction in the OLS estimations for Peña Nieto and López Obrador. We repeat the procedure one thousand times and then compare the distributions with the t-test of the estimation using the real store allocations.

If the structure of the data tends to over-reject the null hypothesis, the distribution of simulated *t* scores should be wide and the observed statistic would fall close to the distribution's mean. However, as Figure 2 shows, less than four percent of the randomizations provided a *t* score with a value larger than those observed for the main regressor

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<sup>19</sup><http://www1.soriana.com/site/?p=2946>

Table 4: Placebo Regressions for the 2006 Presidential Election. Mexico City and State of Mexico.

	All Observations	20 kms.
Panel A: PRI vote share, 2006	(1)	(2)
Proximity $\times$ PRI stronghold $\times$ High Turnout	0.23 (1.40)	-0.04 (1.22)
Proximity $\times$ PRD stronghold $\times$ High Turnout	82.92 (51.70)	-96.72 (60.30)
Proximity $\times$ PAN stronghold $\times$ High Turnout	11.07 (11.58)	-23.00* (11.60)
Electoral Controls	✓	✓
Socioeconomic Controls	✓	✓
Municipal dummies	✓	✓
N	11,193	10,356
R <sup>2</sup>	0.84	0.82
F Statistic	335.30*** (df = 177; 11015)	331.89*** (df = 142; 10213)
	All Observations	20 kms.
Panel B: PRD vote share, 2006	(1)	(2)
Proximity $\times$ PRI stronghold $\times$ High Turnout	-0.06 (2.53)	-0.54 (2.43)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-66.21 (93.38)	152.75 (120.52)
Proximity $\times$ PAN stronghold $\times$ High Turnout	10.17 (20.92)	2.24 (23.18)
Electoral Controls	✓	✓
Socioeconomic Controls	✓	✓
Municipal dummies	✓	✓
N	11,193	10,356
R <sup>2</sup>	0.88	0.89
F Statistic	475.16*** (df = 177; 11015)	560.25*** (df = 142; 10213)
	All Observations	20 kms.
Panel C: PAN vote share, 2006	(1)	(2)
Proximity $\times$ PRI stronghold $\times$ High Turnout	1.96 (2.00)	1.56 (1.89)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-21.50 (73.59)	21.81 (93.74)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-20.76 (16.49)	6.67 (18.03)
Electoral Controls	✓	✓
Socioeconomic Controls	✓	✓
Municipal dummies	✓	✓
N	11,193	10,356
R <sup>2</sup>	0.93	0.94
F Statistic	822.90*** (df = 177; 11015)	1,129.10*** (df = 142; 10213)
	All Observations	20 kms.
Panel D: Turnout, 2006	(1)	(2)
Proximity $\times$ PRI stronghold $\times$ High Turnout	3.27 (2.41)	2.50 (2.19)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-47.10 (80.76)	72.88 (107.53)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-19.09 (21.01)	-9.31 (22.87)
Proximity $\times$ PRI stronghold $\times$ High Turnout	4.78 (12.93)	3.62 (11.58)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-1.06 (7.65)	-3.46 (6.89)
Proximity $\times$ PAN stronghold $\times$ High Turnout	105.94 (68.47)	94.81 (61.75)
Electoral Controls	✓	✓
Socioeconomic Controls	✓	✓
Municipal dummies	✓	✓
N	11,304	10,386
R <sup>2</sup>	0.78	0.79
F Statistic	207.43*** (df = 185; 11118)	251.63*** (df = 150; 10235)

Notes:

\*\*\* Significant at the 0.1 percent level.

\*\* Significant at the 1 percent level.

\* Significant at the 5 percent level.

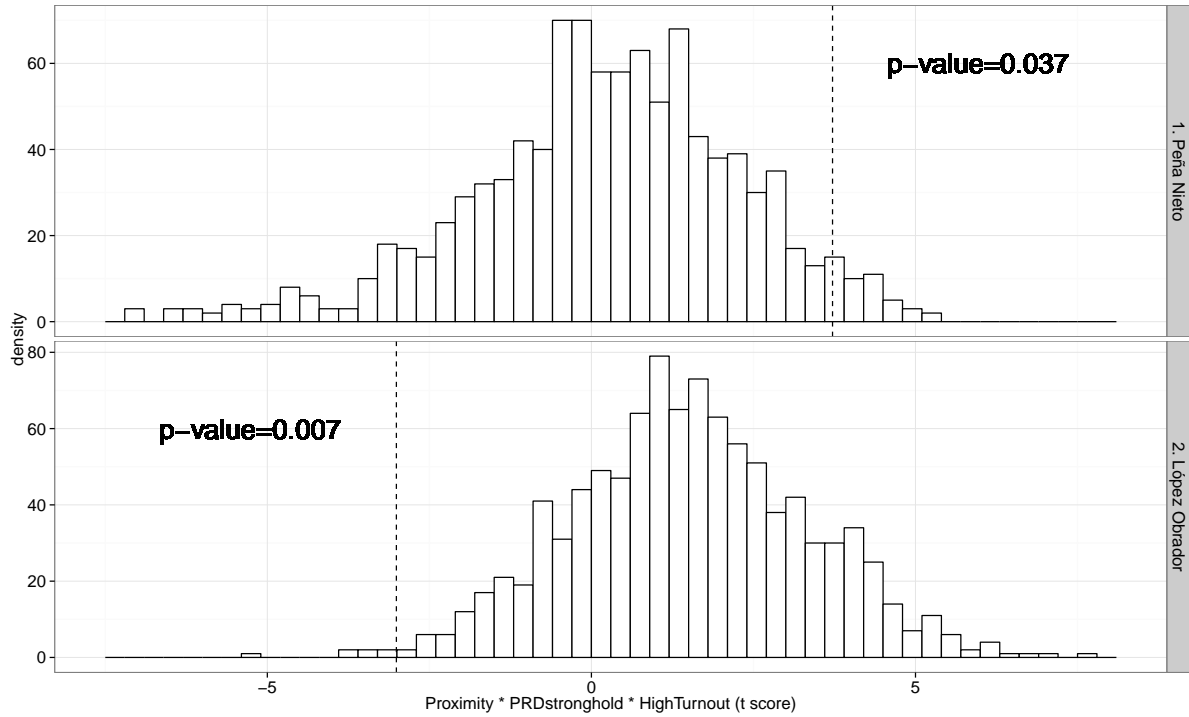


Figure 2: Randomization Inference Results

on Peña Nieto’s vote share. Similarly, less than one percent of the simulations presented a statistic below that observed for the interaction of interest on the vote shares of López Obrador. The results from the randomization inference suggest that the effects are not due to the underlying structure of the data and that effects are rarely explained by other factors besides than the locations of the stores.

## 6.4 Estimating the Magnitude of the Effects

We have provided evidence of a significant switch of electoral support from López Obrador to Peña Nieto within the mobilized PRD strongholds. The last step of the analysis estimates the size of the effects in terms of votes, and it assesses whether this instance determined the electoral outcome. The challenge for this step is to conciliate the contradicting arguments from the opposition and news reports. On the one hand, López Obrador and his party coalition sustain that the 3,500 cards they presented to the electoral court is a

sample of the almost 1.8 million cards that the PRI allegedly distributed during the election (Palmer-Rubin and Nichter, 2014). On the other hand, most of the news reports from this incident come from a few blue-collar neighborhoods in Mexico City and the State of Mexico. The validity of the former position implies a content bias of the news outlets that might be more likely to report events from the country's capital. Otherwise, it might be the case that the strategy was exclusively used by the brokers and machines of that region of the country.

To test both stories, Table G in the Appendix shows the regression results when the analysis considers all the *Soriana* stores in the country. In contrast with the results from Table 3, we find non-significant effects for store proximity within the mobilized strongholds on the vote shares for Peña Nieto and López Obrador. If anything, there is a small yet statistically significant effect on the vote share for Vázquez Mota within the PRI and PAN mobilized strongholds. Note, however, that the coefficients for the PRD strongholds are statistically undistinguishable from zero in every panel, contradicting the claim of a national vote-buying strategy using gift cards. The evidence suggests that if most of the news reports on vote-buying in 2012 came from Mexico City and the State of Mexico, it is because it indeed only occurred in that region.

To estimate the magnitude of the effects in Mexico City and the State of Mexico, Figure 3 takes the coefficients from column (6) on Table 3 to illustrate the marginal effect of the mobilized PRD strongholds on the vote shares for Peña Nieto and López Obrador by proximity to the *Soriana* Stores.<sup>20</sup> As discussed above, the interaction has heterogeneous effects for the vote shares. While the vote shares of Peña Nieto increase with the proximity to the stores, the vote shares of López Obrador decrease in a similar rate. As an illustration, the marginal effect of the mobilized PRD strongholds on Peña Nieto's vote share increases eighteen percent when the precinct is at one kilometer from *Soriana*, a similar magnitude for the same stronghold on the vote shares for López Obrador.

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<sup>20</sup>For the sake of clarity, the estimations in Figure 3 transformed the *Proximity* variable as the distance between the precincts and the stores.

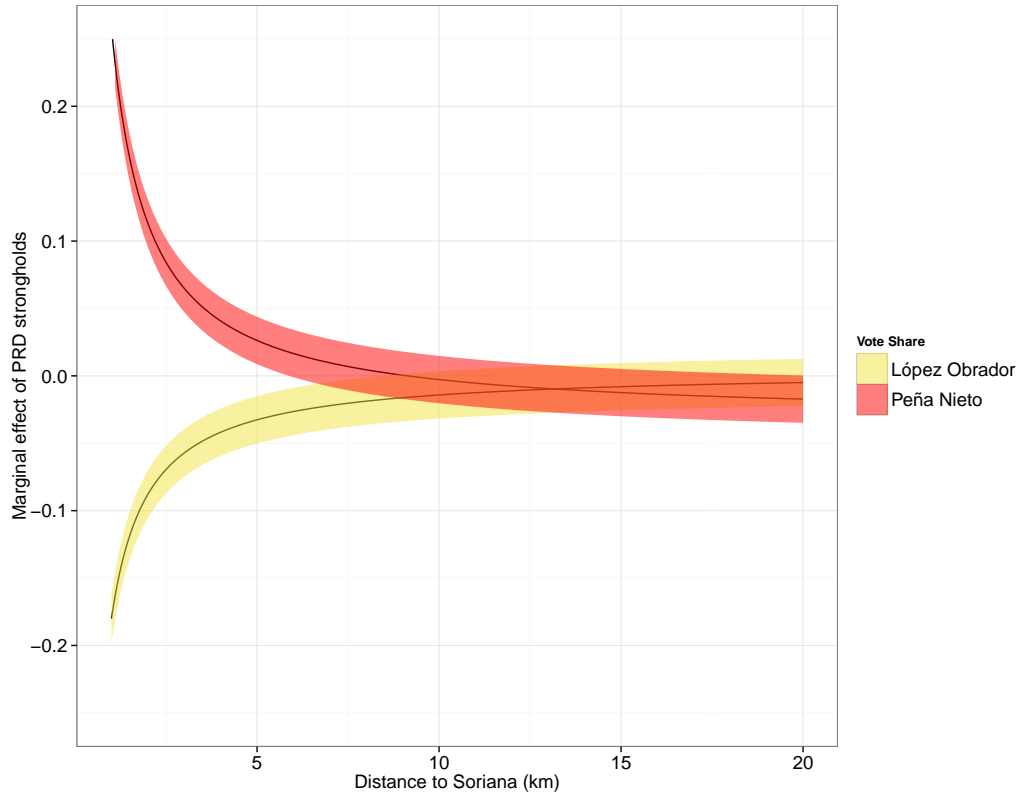


Figure 3: Marginal Effect of PRD Strongholds and High Turnout on Vote Share by Proximity to the *Soriana* Stores (95% Confidence Interval)

More important, Figure 3 shows that the persuasion effects in the PRD mobilized strongholds are perceivable only within the first ten kilometers of distance to the stores, and the marginal effects for both vote shares are greater than ten percent only within the first 2.5 kilometers from the store. The implications of this figure confirm that the effects are only perceivable in the urban areas, as the average distance from the precincts to the stores is six kilometers.

We take these marginal effects to estimate the gains and losses for each of the candidates in vote terms. In this case, we identify the mobilized PRD strongholds and multiply their number of registered voters in the precinct times the marginal effects given its observed proximity to the store. The estimated changes in the number of votes for Peña Nieto within the ninety-five percent confidence interval is [173, 1124] votes. Similarly, the

expected marginal effect on the votes for López Obrador is  $[-2262, -239]$ . The estimated effects are similar to the evidence provided by the PRD to the electoral court, yet it falls way behind the allegation, where it is crucial to determine the almost six million vote difference between the top two candidates in the election.

## 7 Conclusion

This paper assesses the vote-buying allegations during the 2012 Mexican presidential election. By exploiting the distance from voters' residences to the stores where they could cash out the cards, we validate the anecdotal evidence of vote-buying using gift cards to buy groceries. While we find heterogeneous effects for the proximity to the store within the party strongholds, supporting the argument of vote buying, the effect is insufficient to determine the outcome of the election. The results are robust to different specification models and unique to Mexico City and the State of Mexico during the 2012 presidential elections.

Our findings have important implications to the study of electoral clientelism. First, this study represents the first empirical work that isolates the effect of a specific instance of clientelism on electoral behavior. Since political machines often target multiple groups of voters for different strategies ([Díaz-Cayeros, Magaloni and Estévez, 2006](#); [Albertus, 2013](#); [Gans-Morse, Mazzuca and Nichter, 2014](#)), most of the empirical evidence deals with aggregation problems and cannot distinguish heterogeneous effects. By focusing on a single instance of clientelism, we can evaluate its success and scope on the electoral result. Therefore, we invite scholars interested in vote-buying to look for identification strategies that detach the components of the clientelistic strategies.

Second, we test [Gans-Morse, Mazzuca and Nichter's \(2014\)](#) theory and the different strategies for clientelism. Building on the theoretical expectations for allocation and expected target for each clientelistic strategy, we evaluate the likelihood for each strategy



in the 2012 Mexican presidential election. Contrary to the recent work questioning the persuasive effects of vote buying (Nichter, 2008; Guardado and Wantchekon, 2014), this paper demonstrates significant effects on the political behavior of voters.

Finally, for the Mexican case the implications are a double-edged sword. On the one hand, it validates the vote-buying allegations of the opposition and public opinion ignited by the news media. A month after the election, forty percent of the citizens thought that the election was “unfair” and believed the evidence provided by López Obrador. This paper shows that there were reasons to support their anger and disappointment. On the other hand, the effects of this instance had a meager change on the final outcome. As innovative and original as this instance looks, its effects were not substantial and the argument from the opposition to use this instance as a determinant for the electoral outcome are unfounded.

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# Appendix

Table A: Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
<i>Dependent Variables</i>					
Peña Nieto's vote share	11,445	0.236	0.082	0.000	0.696
López Obrador's vote share	11,445	0.285	0.091	0.000	0.605
Vázquez Mota's vote share	11,445	0.123	0.069	0.000	0.493
Turnout 2012	11,445	0.672	0.062	0.000	0.975
<i>Key Dependent Variable</i>					
Proximity	11,445	0.001	0.001	0.00001	0.092
<i>Electoral Controls</i>					
PRI Vote Share, 2009	11,445	0.173	0.083	0.023	0.591
PRD Vote Share, 2009	11,445	0.142	0.062	0.000	0.517
PAN Vote Share, 2009	11,445	0.100	0.070	0.000	0.602
Turnout, 2009	11,445	0.491	0.092	0.157	0.939
PRI Vote Share, 2006	11,445	0.089	0.049	0.018	0.520
PRD Vote Share, 2006	11,445	0.324	0.102	0.009	0.605
PAN Vote Share, 2006	11,445	0.194	0.104	0.000	0.654
Turnout, 2006	11,445	0.650	0.070	0.273	0.999
<i>Socioeconomic Controls</i>					
Population log	11,445	7.049	0.574	0.693	9.876
Urban	11,445	0.879	0.326	0	1
Population over 18, percent	11,445	0.689	0.067	0.400	1.000
Population over 65, percent	11,445	0.073	0.038	0.000	0.250
Average years of schooling	11,445	9.892	2.013	3.610	18.000
Population with college degree, percent	11,445	0.472	0.202	0.000	1.000
Illiterate population, percent	11,445	0.034	0.041	0.000	0.397
Population in the labor market, percent	11,445	0.547	0.053	0.035	0.790
Female population in the labor market, percent	11,444	0.390	0.092	0.000	0.712
Individuals without social security, percent	11,445	0.359	0.109	0.000	0.952
Female head of household, percent	11,445	0.240	0.067	0.000	0.704
Average inhabitants per room	11,445	0.983	0.257	0.000	2.720
Households with dirt floor, percent	11,445	0.024	0.045	0.000	1.000
Households with all services, percent	11,445	0.922	0.177	0.000	1.000
Households with none services, percent	11,445	0.010	0.029	0.000	0.750
Households with car, percent	11,445	0.436	0.176	0.000	1.000
Households with mobile phone, percent	11,445	0.707	0.146	0.000	1.000
Households with internet, percent	11,445	0.313	0.209	0.000	1.000



Table B: Correlates of the Location of *Soriana* Stores in 2012. Federal District and State of Mexico.

	All observations			40 kms.	30 kms.	20 kms.
Dependent Variable: Proximity to <i>Soriana</i> stores	(1)	(2)	(3)	(4)	(5)	(6)
<i>Electoral Controls</i>						
PRI Vote Share, 2009		−0.001* (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
PRD Vote Share, 2009		−0.002* (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
PAN Vote Share, 2009		−0.002** (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
Turnout, 2009		0.001 (0.001)	0.0003 (0.001)	0.0004 (0.001)	0.0004 (0.001)	0.0004 (0.001)
PRI Vote Share, 2006		0.001 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)
PRD Vote Share, 2006		0.001 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)
PAN Vote Share, 2006		0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.003* (0.001)
Turnout, 2006		−0.0001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
<i>Sociodemographic Controls</i>						
Population log	−0.0001* (0.00002)		−0.0001 (0.00004)	−0.0001 (0.00004)	−0.0001 (0.00004)	−0.0001* (0.00004)
Urban	0.00005 (0.0001)		0.00004 (0.0001)	0.00004 (0.0001)	0.00004 (0.0001)	0.0001 (0.0001)
Population over 18, percent	−0.0003 (0.0005)		−0.0003 (0.0005)	−0.0003 (0.0005)	−0.0002 (0.0005)	−0.0003 (0.001)
Population over 65, percent	0.002*** (0.001)		0.002** (0.001)	0.002** (0.001)	0.002*** (0.001)	0.002*** (0.001)
Average years of schooling	−0.00001 (0.00005)		−0.00000 (0.00005)	−0.00000 (0.00005)	0.00001 (0.00005)	0.00001 (0.0001)
Population with college degree, percent	0.0001 (0.0004)		−0.0001 (0.0005)	−0.0002 (0.0005)	−0.0002 (0.0005)	−0.0003 (0.001)
Illiterate population, percent	−0.001 (0.001)		−0.001 (0.001)	−0.002 (0.001)	−0.002 (0.001)	−0.002 (0.001)
Population in the labor market, percent	0.001 (0.001)		0.001 (0.001)	0.001* (0.001)	0.002* (0.001)	0.002* (0.001)
Female population in the labor market, percent	−0.001 (0.0005)		−0.001 (0.0005)	−0.001 (0.001)	−0.001* (0.001)	−0.001 (0.001)
Individuals without social security, percent	−0.0002 (0.0002)		−0.0002 (0.0002)	−0.0002 (0.0002)	−0.0002 (0.0002)	−0.0002 (0.0002)
Female head of household, percent	0.001* (0.0003)		0.001* (0.0003)	0.001* (0.0003)	0.001* (0.0003)	0.001* (0.0003)
Average inhabitants per room			−0.0002 (0.0002)	−0.0002 (0.0002)	−0.0003 (0.0002)	−0.0003 (0.0002)
Households with dirt floor, percent	0.0001 (0.0004)		0.0001 (0.0004)	0.0002 (0.0005)	0.0002 (0.001)	0.0002 (0.001)
Households with all services, percent	−0.0001 (0.0001)		−0.0001 (0.0001)	−0.0001 (0.0001)	−0.0001 (0.0001)	−0.0001 (0.0002)
Households with none services, percent	0.001 (0.001)		0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Households with car, percent	−0.001*** (0.0002)		−0.001*** (0.0002)	−0.001*** (0.0002)	−0.001*** (0.0002)	−0.001*** (0.0003)
Households with mobile phone, percent	0.0003 (0.0002)		0.0003 (0.0002)	0.0004 (0.0003)	0.0004 (0.0003)	0.0005 (0.0003)
Households with internet, percent	0.001* (0.0003)		0.001 (0.0003)	0.001 (0.0003)	0.001 (0.0003)	0.0005 (0.0003)
N	11,556	11,557	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.068	0.062	0.068	0.063	0.059	0.055
F Statistic	5.033*** (df = 164; 11391)	5.024*** (df = 150; 11406)	4.852*** (df = 172; 11383)	4.700*** (df = 159; 11055)	4.551*** (df = 150; 10812)	4.456*** (df = 136; 10496)

Notes:

\*\*\* Significant at the 0.1 percent level.  
 \*\* Significant at the 1 percent level.  
 \* Significant at the 5 percent level.

Table C: Effects of the Location of *Soriana* stores on Voting Behavior in the 2012 Presidential Election Using as Dependent Variable the Proportion of Votes to Each of the Candidates.

		40 kms. (2)	30 kms. (3)	20 kms. (4)
Panel A: Peña Nieto votes/Votes in Precinct				
Proximity $\times$ PRI stronghold $\times$ High Turnout	−3.55 (2.56)	−3.74 (2.47)	−4.12 (2.40)	−3.66 (2.31)
Proximity $\times$ PRD stronghold $\times$ High Turnout	222.40* (87.07)	397.54*** (102.98)	492.26*** (107.15)	504.29*** (115.44)
Proximity $\times$ PAN stronghold $\times$ High Turnout	19.86 (22.61)	36.90 (23.46)	42.38 (23.30)	32.34 (24.56)
Electoral Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,555	11,214	10,962	10,633
R <sup>2</sup>	0.90	0.91	0.90	0.90
F Statistic	573.49*** (df = 181; 11373)	629.71*** (df = 168; 11045)	640.18*** (df = 160; 10801)	672.26*** (df = 146; 10486)
Panel B: López Obrador votes/Votes in Precinct				
Proximity $\times$ PRI stronghold $\times$ High Turnout	2.37 (2.31)	2.01 (2.40)	2.49 (2.37)	2.37 (2.31)
Proximity $\times$ PRD stronghold $\times$ High Turnout	−458.36*** (115.15)	−244.81* (100.36)	−310.47** (105.80)	−458.36*** (115.15)
Proximity $\times$ PAN stronghold $\times$ High Turnout	−44.39 (24.50)	−42.56 (22.86)	−41.20 (23.01)	−44.39 (24.50)
Electoral Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	10,633	11,214	10,962	10,633
R <sup>2</sup>	0.94	0.94	0.94	0.94
F Statistic	1,113.07*** (df = 146; 10486)	1,049.99*** (df = 168; 11045)	1,047.96*** (df = 160; 10801)	1,113.07*** (df = 146; 10486)
Panel C: Vázquez Mota votes/Votes in Precinct				
Proximity $\times$ PRI stronghold $\times$ High Turnout	1.27 (2.05)	1.29 (1.95)	1.28 (1.87)	1.03 (1.82)
Proximity $\times$ PRD stronghold $\times$ High Turnout	−123.97 (69.79)	−97.81 (81.47)	−180.04* (83.64)	−4.59 (90.72)
Proximity $\times$ PAN stronghold $\times$ High Turnout	16.03 (18.12)	9.35 (18.56)	3.88 (18.19)	17.77 (19.30)
Electoral Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,555	11,214	10,962	10,633
R <sup>2</sup>	0.90	0.91	0.91	0.92
F Statistic	552.79*** (df = 181; 11373)	641.12*** (df = 168; 11045)	720.53*** (df = 160; 10801)	823.28*** (df = 146; 10486)

Notes:

\*\*\*Significant at the 0.1 percent level.

\*\*Significant at the 1 percent level.

\*Significant at the 5 percent level.

Table D: Effects of the Location of *Soriana* stores on Voting Behavior in the 2012 Presidential Election Using as Dependent Variable the Change in the Vote Shares for the Political Parties Between 2009 and 2012.

	(1)	40 kms. (2)	30 kms. (3)	20 kms. (4)
Panel A: PRI vote share 2012- PRI vote share 2009				
Proximity $\times$ PRI stronghold $\times$ High Turnout	-4.46* (2.20)	-4.48* (2.14)	-4.41* (2.09)	-4.24* (2.01)
Proximity $\times$ PRD stronghold $\times$ High Turnout	190.98* (74.67)	259.26** (89.45)	360.08*** (93.56)	350.34*** (100.19)
Proximity $\times$ PAN stronghold $\times$ High Turnout	1.81 (19.37)	14.87 (20.35)	19.33 (20.33)	-0.64 (21.31)
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.55	0.56	0.57	0.57
F Statistic	80.65*** (df = 173; 11382)	89.64*** (df = 160; 11054)	94.34*** (df = 152; 10810)	102.63*** (df = 138; 10494)
Panel B: PRD vote share 2012- PRD vote share 2009				
Proximity $\times$ PRI stronghold $\times$ High Turnout	-0.37 (2.56)	0.15 (2.51)	0.12 (2.48)	-0.17 (2.42)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-195.09* (87.18)	-236.90* (104.94)	-257.38* (110.88)	-283.87* (120.55)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-66.47** (22.62)	-61.21* (23.88)	-51.80* (24.09)	-42.61 (25.64)
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.82	0.82	0.80	0.78
F Statistic	304.45*** (df = 173; 11382)	308.85*** (df = 160; 11054)	286.57*** (df = 152; 10810)	277.50*** (df = 138; 10494)
Panel C: PAN vote share 2012- PAN vote share 2009				
Proximity $\times$ PRI stronghold $\times$ High Turnout	-1.67 (1.84)	-1.82 (1.75)	-1.76 (1.68)	-1.89 (1.62)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-48.32 (62.47)	-101.24 (73.11)	-144.79 (75.21)	-31.88 (81.06)
Proximity $\times$ PAN stronghold $\times$ High Turnout	30.55 (16.21)	31.51 (16.63)	18.82 (16.34)	10.96 (17.24)
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.63	0.64	0.64	0.63
F Statistic	113.33*** (df = 173; 11382)	122.20*** (df = 160; 11054)	127.61*** (df = 152; 10810)	129.67*** (df = 138; 10494)
Panel D: Turnout 2012- Turnout 2009				
Proximity $\times$ PRI stronghold $\times$ High Turnout	-2.63 (2.75)	-2.36 (2.76)	-2.80 (2.77)	-3.24 (2.76)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-123.51 (93.25)	-62.32 (114.92)	63.27 (123.41)	178.14 (136.89)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-23.35 (24.20)	-3.48 (26.15)	-15.33 (26.82)	-29.80 (29.14)
Proximity $\times$ PRI stronghold $\times$ Low Turnout	4.66 (14.47)	4.60 (14.45)	4.47 (14.44)	4.35 (14.29)
Proximity $\times$ PRD stronghold $\times$ Low Turnout	28.18** (8.84)	27.41** (8.84)	27.29** (8.84)	27.63** (8.78)
Proximity $\times$ PAN stronghold $\times$ Low Turnout	-285.40*** (79.03)	-287.65*** (79.14)	-281.04*** (79.17)	-268.56*** (78.49)
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,527	11,189	10,937	10,607
R <sup>2</sup>	0.71	0.69	0.67	0.64
F Statistic	149.80*** (df = 181; 11345)	145.35*** (df = 168; 11020)	136.55*** (df = 160; 10776)	128.37*** (df = 146; 10460)

Notes:

\*\*\* Significant at the 0.1 percent level.

\*\* Significant at the 1 percent level.

\* Significant at the 5 percent level.

Table E: Effects of the Location of *Soriana* stores on Voting Behavior in the 2012 Presidential Election. Alternative Specifications for *Proximity* and *Stronghold* Variables.

	(1)	40 kms. (2)	30 kms. (3)	20 kms. (4)
Panel A: Peña Nieto vote share				
Driving Proximity $\times$ PRI stronghold $\times$ High Turnout	-4.91 (3.32)	-6.61* (3.24)	-6.64* (3.15)	-6.49* (3.00)
Driving Proximity $\times$ PRD stronghold $\times$ High Turnout	310.58*** (90.26)	446.39*** (96.50)	567.11*** (99.53)	579.44*** (105.55)
Driving Proximity $\times$ PAN stronghold $\times$ High Turnout	2.52 (24.72)	21.01 (25.16)	32.49 (25.03)	11.27 (26.30)
Electoral Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,444	11,175	10,929	10,602
R <sup>2</sup>	0.90	0.90	0.90	0.89
F Statistic	539.59*** (df = 181; 11262)	579.31*** (df = 168; 11006)	576.84*** (df = 160; 10768)	599.38*** (df = 146; 10455)
Panel B: López Obrador vote share				
Driving Proximity $\times$ PRI stronghold $\times$ High Turnout	2.21 (3.31)	3.02 (3.23)	3.90 (3.20)	3.10 (3.14)
Driving Proximity $\times$ PRD stronghold $\times$ High Turnout	-105.11 (89.90)	-271.80** (96.37)	-319.83** (101.18)	-414.58*** (110.26)
Driving Proximity $\times$ PAN stronghold $\times$ High Turnout	-71.06** (24.63)	-58.08* (25.13)	-58.78* (25.45)	-72.04** (27.47)
Electoral Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,444	11,175	10,929	10,602
R <sup>2</sup>	0.92	0.92	0.92	0.92
F Statistic	696.11*** (df = 181; 11262)	761.01*** (df = 168; 11006)	754.24*** (df = 160; 10768)	806.83*** (df = 146; 10455)
Panel C: Vázquez Mota vote share				
Driving Proximity $\times$ PRI stronghold $\times$ High Turnout	0.19 (2.49)	0.62 (2.39)	0.72 (2.29)	0.16 (2.22)
Driving Proximity $\times$ PRD stronghold $\times$ High Turnout	-181.51** (67.65)	-118.44 (71.22)	-180.77* (72.50)	-27.39 (77.96)
Driving Proximity $\times$ PAN stronghold $\times$ High Turnout	6.57 (18.53)	-13.22 (18.57)	-17.35 (18.23)	-19.20 (19.43)
Electoral Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,444	11,175	10,929	10,602
R <sup>2</sup>	0.92	0.92	0.93	0.94
F Statistic	691.26*** (df = 181; 11262)	801.98*** (df = 168; 11006)	903.33*** (df = 160; 10768)	1,051.04*** (df = 146; 10455)
Panel D: Turnout				
Driving Proximity $\times$ PRI stronghold $\times$ High Turnout	-2.57 (3.89)	-3.13 (3.90)	-3.00 (3.92)	-4.13 (3.90)
Driving Proximity $\times$ PRD stronghold $\times$ High Turnout	-105.30 (104.86)	-34.51 (115.52)	42.08 (123.16)	95.04 (136.30)
Driving Proximity $\times$ PAN stronghold $\times$ High Turnout	-43.96 (28.73)	-34.06 (30.13)	-37.97 (30.99)	-75.92* (33.99)
Driving Proximity $\times$ PRI stronghold $\times$ Low Turnout	-3.24 (16.65)	-4.03 (16.60)	-4.43 (16.61)	-5.54 (16.37)
Driving Proximity $\times$ PRD stronghold $\times$ Low Turnout	44.97*** (13.29)	46.05*** (13.28)	44.90*** (13.29)	42.20** (13.18)
Driving Proximity $\times$ PAN stronghold $\times$ Low Turnout	-269.96** (82.24)	-282.85*** (82.18)	-286.00*** (82.32)	-286.53*** (81.29)
Electoral Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,415	11,149	10,903	10,576
R <sup>2</sup>	0.78	0.78	0.78	0.77
F Statistic	213.12*** (df = 189; 11225)	220.76*** (df = 176; 10972)	222.92*** (df = 168; 10734)	232.89*** (df = 154; 10421)

Notes:

\*\*\* Significant at the 0.1 percent level.  
 \*\* Significant at the 1 percent level.  
 \* Significant at the 5 percent level.

Table F: Effects of the Location of *Soriana* stores on Voting Behavior in the 2012 Presidential Election. Alternative Specifications for *Proximity* and *Stronghold* Variables.

		40 kms.	30 kms.	20 kms.
Panel A: Peña Nieto vote share	(1)	(2)	(3)	(4)
Proximity $\times$ PRI stronghold $\times$ High Turnout	-3.14 (1.91)	-3.31 (1.84)	-3.53* (1.79)	-3.08 (1.70)
Proximity $\times$ PRD stronghold $\times$ High Turnout	57.38*** (11.04)	54.63*** (10.82)	58.97*** (10.53)	57.21*** (10.07)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-4.01 (2.43)	-3.21 (2.36)	-3.85 (2.31)	-2.41 (2.22)
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,556	11,215	10,963	10,633
Adjusted R <sup>2</sup>	0.89	0.90	0.89	0.89
F Statistic	542.13*** (df = 181; 11374)	579.32*** (df = 168; 11046)	578.42*** (df = 160; 10802)	600.59*** (df = 146; 10486)
Panel B: López Obrador vote share	(1)	(2)	(3)	(4)
Proximity $\times$ PRI stronghold $\times$ High Turnout	-0.87 (1.90)	-0.68 (1.84)	-0.01 (1.83)	-0.14 (1.78)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-32.09** (11.00)	-33.44** (10.82)	-33.00** (10.73)	-29.07** (10.55)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-3.19 (2.42)	-2.98 (2.36)	-1.61 (2.36)	-1.47 (2.32)
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.92	0.92	0.92	0.92
F Statistic	698.05*** (df = 181; 11374)	758.40*** (df = 168; 11046)	749.14*** (df = 160; 10802)	800.17*** (df = 146; 10486)
Panel C: Vázquez Mota vote share	(1)	(2)	(3)	(4)
Proximity $\times$ PRI stronghold $\times$ High Turnout	0.74 (1.45)	0.66 (1.37)	0.72 (1.31)	0.09 (1.26)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-31.09*** (8.37)	-24.33** (8.03)	-26.62*** (7.70)	-24.64*** (7.47)
Proximity $\times$ PAN stronghold $\times$ High Turnout	6.56*** (1.84)	5.86*** (1.75)	5.83*** (1.69)	4.42** (1.64)
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,556	11,215	10,963	10,633
R <sup>2</sup>	0.91	0.92	0.93	0.94
F Statistic	676.38*** (df = 181; 11374)	791.34*** (df = 168; 11046)	894.59*** (df = 160; 10802)	1,038.33*** (df = 146; 10486)
Panel D: Turnout	(1)	(2)	(3)	(4)
Proximity $\times$ PRI stronghold $\times$ High Turnout	-2.44 (2.22)	-2.56 (2.22)	-2.25 (2.23)	-2.75 (2.21)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-13.44 (12.78)	-9.39 (12.97)	-5.70 (13.06)	-1.19 (13.03)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-0.82 (2.81)	-0.97 (2.83)	-0.32 (2.87)	-0.003 (2.87)
Proximity $\times$ PRI stronghold $\times$ Low Turnout	11.04 (11.11)	10.32 (11.07)	10.34 (11.08)	9.32 (10.91)
Proximity $\times$ PRD stronghold $\times$ Low Turnout	14.35** (4.53)	14.41** (4.52)	14.32** (4.52)	13.42** (4.46)
Proximity $\times$ PAN stronghold $\times$ Low Turnout	6.93 (6.96)	6.61 (6.94)	6.57 (6.94)	6.33 (6.84)
Socioeconomic Controls	✓	✓	✓	✓
Municipal dummies	✓	✓	✓	✓
N	11,527	11,189	10,937	10,607
R <sup>2</sup>	0.78	0.78	0.78	0.77
F Statistic	214.27*** (df = 189; 11337)	219.70*** (df = 176; 11012)	221.63*** (df = 168; 10768)	231.64*** (df = 154; 10452)

Notes:

\*\*\* Significant at the 0.1 percent level.

\*\* Significant at the 1 percent level.

\* Significant at the 5 percent level.

Table G: Effects of the Location of *Soriana* stores on Voting Behavior in the 2012 Presidential Election. All States in the Country.

		40 kms.	20 kms.
Panel A: Peña Nieto vote share	(1)	(2)	(3)
Proximity $\times$ PRI stronghold $\times$ High Turnout	1.92 (1.43)	1.62 (1.35)	1.12 (1.25)
Proximity $\times$ PRD stronghold $\times$ High Turnout	21.36 (14.34)	19.06 (13.77)	-0.79 (13.24)
Proximity $\times$ PAN stronghold $\times$ High Turnout	4.73* (2.38)	4.60* (2.28)	4.31* (2.14)
Electoral Controls	✓	✓	✓
Socioeconomic Controls	✓	✓	✓
Municipal dummies	✓	✓	✓
N	46,205	42,115	37,491
R <sup>2</sup>	0.80	0.80	0.81
F Statistic	130*** (df = 1377; 44823)	148*** (df = 1130; 40980)	185.5*** (df = 841; 36646)
		40 kms.	20 kms.
Panel B: López Obrador vote share	(1)	(2)	(3)
Proximity $\times$ PRI stronghold $\times$ High Turnout	-0.21 (1.22)	-0.12 (1.16)	-0.28 (1.09)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-6.60 (12.17)	-21.52 (11.76)	-8.33 (11.59)
Proximity $\times$ PAN stronghold $\times$ High Turnout	1.62 (2.02)	1.85 (1.95)	1.14 (1.88)
Electoral Controls	✓	✓	✓
Socioeconomic Controls	✓	✓	✓
Municipal dummies	✓	✓	✓
N	46,205	42,115	37,491
R <sup>2</sup>	0.91	0.93	0.94
F Statistic	380.2*** (df = 1377; 44823)	478*** (df = 1130; 40980)	662.3*** (df = 841; 36646)
		40 kms.	20 kms.
Panel C: Vázquez Mota vote share	(1)	(2)	(3)
Proximity $\times$ PRI stronghold $\times$ High Turnout	-3.48** (1.20)	-3.25** (1.14)	-3.10** (1.07)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-2.09 (12.00)	-20.40 (11.64)	-16.46 (11.37)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-5.43** (1.99)	-5.55** (1.93)	-5.03** (1.85)
Electoral Controls	✓	✓	✓
Socioeconomic Controls	✓	✓	✓
Municipal dummies	✓	✓	✓
N	46,205	42,115	37,491
R <sup>2</sup>	0.89	0.90	0.92
F Statistic	278.5*** (df = 1377; 44823)	345.3*** (df = 1130; 40980)	487.1*** (df = 841; 36646)
		40 kms.	20 kms.
Panel D: Turnout	(1)	(2)	(3)
Proximity $\times$ PRI stronghold $\times$ High Turnout	-0.43 (2.27)	-1.95 (2.23)	-3.85 (2.18)
Proximity $\times$ PRD stronghold $\times$ High Turnout	-8.45 (22.60)	-1.92 (22.54)	-9.27 (23.04)
Proximity $\times$ PAN stronghold $\times$ High Turnout	-5.34 (3.86)	-4.59 (3.85)	-4.96 (3.87)
Proximity $\times$ PRI stronghold $\times$ Low Turnout	-0.81 (2.65)	-2.29 (2.64)	-2.24 (2.62)
Proximity $\times$ PRD stronghold $\times$ Low Turnout	-0.62 (10.69)	-2.85 (10.94)	4.636 (11.45)
Proximity $\times$ PAN stronghold $\times$ Low Turnout	-10.10 (6.30)	-5.63 (6.18)	-6.37 (6.04)
Electoral Controls	✓	✓	✓
Socioeconomic Controls	✓	✓	✓
Municipal dummies	✓	✓	✓
N	46,034	41,954	37,350
R <sup>2</sup>	0.65	0.66	0.68
F Statistic	263.5*** (df = 325; 45706)	253.4*** (df = 322; 41631)	246.3*** (df = 314; 37035)

Notes:

\*\*\*Significant at the 0.1 percent level.

\*\*Significant at the 1 percent level.

\*Significant at the 5 percent level.