Aiming Right At You: Group vs. Individual Clientelistic Targeting in Brazil

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Abstract

Do parties target individuals or groups? This is a fundamental question to understand clientelism, and yet the literature does not offer an answer. This paper argues that, depending on certain conditions, brokers choose to target individuals or groups, although not exclusively. This calculation is made depending on how individuals discount the future, on political pressures to secure higher levels of electoral support and on how dense the concentration of poor individuals is. Specific combinations of these three factors make individuals more identifiable, which in turn makes individual targeting cheaper. Other combinations provide spillover effects, leading brokers to engage in group targeting. Though the theory focuses on targeting, this paper also argues that structural factors rather than individual ones should be considered to explain vote-buying. Structural factors, such as the density of the poor, are one of the few observable factors brokers have to make decisions on regarding where to invest in clientelism. Using survey data from Brazil, the paper exploits variations of personal incomes within different poverty-density contexts to support the theory.

6,614 words

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There is no agreement on when, how and why parties target individuals or groups. The distributive politics and vote-buying literatures have traditionally followed two different practices. Unfortunately, this decision seems to be grounded on the research design rather than on theoretical reasons. Consequently, it has been implied that the two strategies are interchangeable. On the one hand, the distributive politics literature has mostly focused on groups, usually districts or provinces (Dixit and Londregan [1996], Khemani [2015], Calvo and Murillo [2004]). In this literature, incumbent parties deliver public-sector jobs or construction projects contingent on the support of *groups* of individuals. On the other hand, the vote-buying literature has typically focused on *individuals* and their characteristics such as socio-economic or electoral profiles (Carlin and Moseley [2015]).

The most consolidated agreement is on the positive effects of poverty on vote-buying (Calvo and Murillo [2004], Weitz-Shapiro [2012])[1]. Kitschelt [2000][2], For example, Brusco et al. [2004], Stokes et al. [2013] and Nazareno et al. [2008] explain that since the poor derive more utility from immediate transfers than future and risky returns associated with policy packages, clientelistic political parties *only* target the poor. Weitz-Shapiro [2014, p. 12] explains that "[a]lmost universally, scholars of clientelism treat and analyze the practice as an exchange between politicians and their poor clients". However, this canonical predictor has been recently challenged. Szwarcberg [2013] "challenges the assumption [that brokers] with access to material benefits will always distribute goods to low-income voters in exchange for electoral support", while Gonzalez-Ocantos et al. [2012] and Holland and Palmer-Rubin [2015] explain that income (measured at the individual level) has little or no effect on vote-buying. Why does contemporary scholarly work report null fundings on poverty, the *most* important predictor of vote-buying? Under what *conditions* do poor *and* non-poor individuals receive clientelism? The dataset analyzed in this paper strongly suggests that brokers do target non-poor individuals as well (see Figure 1). Why would brokers have incentives to target non-poor individuals? Currently, the literature does not offer a satisfactory answer for these questions. We present a theory that sheds light on these questions by explaining when and why group and individual targeting are efficient.

The lack of clarity on whether parties should target groups and/or individuals and when/if they should switch or combine strategies, leaves us in a big confusion. Zarazaga [2015] argues that brokers do not offer a uniform reward to all voters. We generalize this idea and argue that depending on the incentive structure, brokers target groups or individuals, although not exclusively. As we explain below, part of the incentives are shaped by wealth. However, an important gap in the literature is that it is not explicit on whether "the poor" constitute poor *groups* or poor *individuals* (or both).

[1] Vote-buying is "the proffering to voters of cash or (more commonly) minor consumption goods by political parties, in office or in opposition, in exchange for the recipient's vote" (Brusco et al. [2004, p. 67]). In the rest of this note, we use clientelism and vote-buying interchangeable.

[2] See also Kitschelt and Altamirano in Carlin et al. [2015, ch. 10].

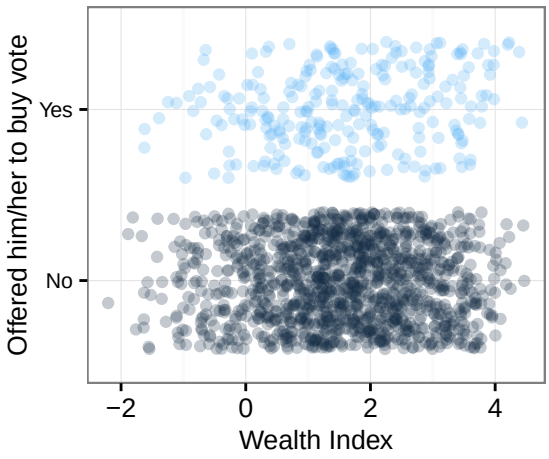

Figure 1: *Individual Wealth and Vote-Buying*

There has not been an explicit effort to theorize about the different set of incentives these two targeting strategies present to both parties and individuals. For example, Kitschelt and Wilkinson [2006, 10] argue that political parties target "individuals *or* identifiable small groups"[3]. However, it is not clear what makes parties focus on one or the other, or both at the same time, and why and how they make this decision. This paper tries to shed light on those issues.

We argue that the decision brokers face on whether to target groups or individuals is context-specific. The paper systematizes this decision-making process by arguing that the outcome is a function of three processes, i.e. individuals' income level, whether individuals are nested in poor or non-poor contexts, and the level of political competition. Given the nesting structure of the argument and the empirics, we are able to provide interesting predictions such as decomposing the effects on clientelism of "being poor" and "living in a poor area". To the best of our knowledge, this is the first time such comparison is made. Four ideal types are presented: low-income individuals nested in (1) poor and (2) non-poor clusters, and non-poor individuals nested in (3) poor and (4) non-poor contexts. In addition to this, depending on how challenging the incumbent party is, brokers take advantage of the different economic incentives each combination has, deploying either individual or group-targeting strategies for each ideal type.

Each combination presents different incentives for both brokers and individuals that lead them to engage in clientelism, either by delivering it or accepting it. The argument has three constitutive parts. First, individuals are highly identifiable when the poor are nested in non-poor areas and when non-poor individuals are nested in poor areas. In these cases, brokers will be in a better position to hold those individuals more accountable. Second, when political competition is low, there are less incentives to spend too many resources on clientelism. For example, even when non-poor individuals

[3]Emphasis added.

nested in poor contexts are more identifiable, under low electoral pressures, clientelism is very low. Third, low personal incomes are neither a sufficient nor a necessary condition for clientelism. Though in theory high-income individuals have decreasing returns on clientelistic transfers, one of the important propositions of this article is that clientelism is not always targeted to the poor. In fact, non-poor individuals (under certain conditions) have some probability of receiving clientelism too. Consequently, we depart from the canonical (and until recently) unchallenged finding that only "the" poor receive clientelism.

Table 1: *Clientelistic Targeting: Strategy Set*

	Non-Poor Individuals	Low-Income Individuals
High Competition	**Poor Areas**, *identifiable, individual targeting*	**Poor Areas**, *spillover effects, group targeting, cheap vote-buying*
Low Competition	**Non-Poor Areas**, *group targeting, expensive vote-buying, lack of checks and balances, embezzlement*	**Non-Poor Areas**, *identifiable, individual targeting*

The four ideal types in these three contexts are exemplified in Table 1. Individual targeting is expensive. A considerable portion of what is gained securing each vote is spent on one-to-one targeting, monitoring, enforcing and delivery. Hence, though this strategy represents safer investments, its returns are much more limited. We argue that brokers will engage in *individual targeting* when individuals are easily identifiable. Non-poor individuals nested in poor areas (quadrant 1) and low-income individuals nested in non-poor areas (quadrant 4) are more noticeable, reducing the cost of targeting. In turn, brokers engage in *group targeting* when individuals, due to their nesting structure, provide economies of scale and spillovers (quadrants 2 and 3). In quadrant 2, spillovers are due to the ability of brokers to mobilize electoral support from voters who have not been targeted yet. Finally, quadrant 3 represents a situation where non-poor individuals are nested in non-poor areas. Here, brokers engage in group targeting too. We theorize that in contexts where there is less political competition, there are less checks and balances and hence, incumbents have more room to move. Even when politicians are not in need of more electoral support, they engage in this expensive form of clientelism, which we term as embezzlement.

This paper proceeds as follows. First, it reviews classic and contemporary research on vote buying, particularly paying attention to explanations that, though vague, touch upon the distinction between individual and group targeting. We emphasize on the main tensions regarding the lack of clarity on which strategy is the most efficient, when and why. Second, we present the argument in detail. Third, we discuss the methodology. Exploiting within-municipality variations of individual income in both low and high density contexts in Brazil, and taking advantage of matching methods, we test and present supporting evidence for each of the ideal types. Fourth, the paper offers some

final considerations.

When do parties target individuals and when groups?

In both classic and modern literatures, there coexists theories, methodologies, measurement and identification strategies that either focus on only individual *or* group targeting, assuming that both strategies are interchangeable. In fact, most of the times, the distinction is rather a product of the method or epistemological tradition. For example, most ethnographers have considered individual targeting (see for example Scott [1972], Auyero [2000] and Szwarcberg [2013]). In turn, researchers employing experimental methods tend to vary; however, most accounts focus on individuals clustered at some level of aggregation (see for example Weitz-Shapiro [2012] and Gonzalez-Ocantos et al. [2012]). Rather than describing a detailed list of various studies and their methodologies, the important point is that the decision to investigate group-based and/or individual-based targeting strategies has been mostly driven by considerations of research design. Unfortunately, there is no clear theory for why, how and when parties would engage in one or the other. In addition to that, this interchangeability also *implies* that there is no difference between these strategies. As this paper suggests, the structure of incentives each of these strategies provides is something that the literature should address.

There is a tension in the vote-buying literature due to the lack of theoretical discussion on when parties should target groups and when individuals. This tension is more noticeable when we consider how three standard *contextual* predictors of clientelism (population size, associationism and political competition) interplay differently when we make the explicit distinction between *individual* and *group* poverty.

Population Size and Coordination Dilemmas

One of the classic contextual factors considered in the vote-buying literature has been the size of the community where clientelism takes place. Group size has always been an intriguing phenomena in social sciences. Amongst classic political economy literature, there has been a long-standing debate regarding how large groups face greater coordination dilemmas (see for example Aldrich [1995]). The main intuition is that if an individual's vote is bought, he or she may be tempted to accept the benefit and then vote for his or her preferred candidate anyways. Defection becomes even more likely when the size of the targeted community is large. Taking this idea as a starting point, several scholars have argued that smaller groups are preferred for brokers because individuals nested in small communities should tend to defect less. For example, Stokes [2005, 323], Kitschelt and Wilkinson [2006, 10] and Magaloni [2008, p. 67] suggest that the population size is negatively associated to clientelism. In reverse, smaller communities should have higher likelihoods of receiving

clientelistic goods since they are easier to monitor. This mechanism, with some modifications, has been readdressed very recently. In the Colombian case, Rueda [2016] argues that clientelism is higher in situations where the electoral results of small groups are available. In Nigeria, for example, Bratton [2008] finds that the strongest predictor of defection is the expectation of others defecting (which is a function of size). Likewise, in Brazil, Gingerich and Medina [2013, p. 456] find that "vote brokerage thrives in municipalities with very small electorates".

Though implied that this literature referrers to individual targeting, it is not clear how political parties derive enough electoral revenues from such an expensive and uncertain strategy. Brusco et al. [2004] and Stokes [2005] argue that brokers develop very good skills that even allow them to infer whether individual clients in small-sized communities voted for the party by *looking at them in the eyes*. For the Brazilian case, similar evidence is suggested in Gay [1993, 1998]. This strategy implies that local brokers monitor, target, enforce and mobilize electoral support on a one-to-one basis. However, the theoretical challenge is that this method seems to be extremely expensive given the handful of votes brokers can secure one by one. By extension, the cost of this strategy increases linearly with the size of the targeted population, even in low density population contexts. The brokers' production-possibility frontier cannot be shifted upwards either, as monitoring capacities are bounded. Simply put, at some point, party machines simply run out of brokers. One important question is, what do parties do when they face large communities? Large-sized communities presumably imply higher levels of electoral support. Do brokers just *stop* being clientelistic? Under certain conditions, coordination among individuals nested in very large-sized groups is still *very* plausible (Olson [1965]). Hence, this begs the question of *when* and *why* would clientelistic political parties engage in this costly strategy and what alternatives exist to ameliorate its costs. And the question for the complementary strategy is still unanswered: Is this strategy exclusive? Does individual targeting in scarcely populated areas *prevent* clientelistic political parties from targeting highly populated areas? The theory presented here does not argue against this particular strategy. Rather, it builds on that idea while also explaining how and why this strategy is just part of a larger set of strategies. Particularly, this paper presents an argument where parties make use of simultaneous segmented targeting techniques. Parties do engage in individual targeting when certain conditions are met.

Civic Associations and Organization Buying

Another important contextual explanatory factor is whether individuals are involved in certain social networks. According to the literature, civic associations might help solve some of the challenges large-sized groups present to brokers. As (most) brokers cannot observe individual electoral behavior in low-information environments, they resort to substitutes to compensate for this gap and make safer inferences. In large-sized group contexts, brokers, for example, outsource monitoring and

enforcing to formal and/or informal networks. Schaffer and Baker [2015] explain that clientelism is "socially multiplied" as party machines target individuals "who are opinion-leading epicenters" in informal situations. If parties buy "turnout" (Nichter [2008]), they will most probably target associations too, as "citizens immersed in clientelistic networks [...] have a higher probability of voting than the rest" (Carreras and Castaneda-Angarita [2014, p. 7]). In a similar vein, Calvo and Murillo [2013] argue that parties target formal "partisan networks", in what has been called "organization buying" (Stokes et al. [2013, p. 250-251]). For example, Holland and Palmer-Rubin [2015, p. 16] explain that when "parties lack their own brokerage networks [they seek] to capitalize on organizational networks instead". Similarly, Rueda [2015] argues that parties tend to target very specific civic associations[4]. Paradoxically, the stronger the civic society, i.e. the more organized it is, the more clientelism.

The positive relationship between group-membership and clientelism is intuitive and appealing. However, what has not been explored yet is whether clientelism is explained by the "nesting" or the "organization buying" components attached to group-membership. Membership into local grass-root associations also typically involves a situation where low-income individuals are nested in contexts of high-poor density. That is, where the proportion of poor people is large in a given community. Keeping coordination costs constant, groups typically are formed to address problems that otherwise would be too costly to solve outside of the group. If that were the case, formal group *membership* should be spuriously related to clientelism. In other words, is clientelism associated to group membership *itself*, or is it associated to the density of the poor that is also present in associations? This paper supports the intuition that there exists a positive relationship between group membership and clientelism. In fact, given the identification strategy adopted in this paper, we are able to separate the effects of being involved in groups at different levels of poverty density. Though we find that group membership does have a positive effect on clientelism, the density of the poor outperforms group membership.

Political Competition

In an important paper, Weitz-Shapiro [2012] argues that higher levels of political competition in the presence of low socioeconomic levels measured at the municipal level were positively associated to clientelism in several Argentine municipalities. In the absence of these two factors, politicians would opt-out of clientelism to avoid audience costs. We expand this empirical strategy and also measure poverty and political competition at the municipal level. Additionally, we are able to observe individual income and empirically model how different combinations of these three factors change the brokers' cost-benefit rationale. This article departs from that of Weitz-Shapiro [2012] in

[4]Particularly, associations of "seniors and associations of single mothers, organizing trips to recreational centers outside the city where all their expenses are covered" (p. 13).

that it exploits the idea of "costs" more explicitly. In Weitz-Shapiro [2012]'s argument, losses are conceptualized in terms of "moral costs"[5]. These type of costs have been theorized in the literature very recently too. For example, Carlin and Moseley [2015] argue that citizens endowed with more democratic values feel more "moral repugnance" about clientelism. Similarly, Vicente [2014] explains that vote-buying practices have an "immoral/illegal connotation". Gonzalez-Ocantos et al. [2012] find that individuals wanting to avoid social stigma usually do not elicit truthful answers when directly asked about clientelism. However, it is not clear how individuals who benefit from vote-buying really *understand* how this practice harms democracy. Citizens endowed with more democratic values systematically have higher incomes and better education. In fact, Gonzalez-Ocantos et al. [2014] finds that while the concrete benefits obtained through vote-buying are generally well understood, "the abstract societal costs of such exchanges are often distant from the every-day world in which clientelistic relationships are formed". According to their experimental evidence, more educated individuals are more condemning of vote-buying practices while individuals with more exposure to it along with the poor are less. Though moral costs might reduce vote-buying, it is not so clear whether low-income individuals, who are precisely the brokers' favorite targets, understand vote-buying as a bad thing for democracy.

We are left with many questions. There is no consensus on how individual characteristics such as income and macro-structural factors such as the size of the population, the size of the poor group and the different levels of political competition *interplay together* to help/harm vote-buying. It is not clear how both levels of aggregations *shape* brokers' incentives to *opt for* vote-buying. We share Carlin and Moseley [2015]'s diagnosis, in that "[e]xisting research looks almost *exclusively* at individuals' socio-economic and, specially, electoral profile [and] [y]et our knowledge of who parties target remains incomplete"[6]. Hence, more than being an issue about the unit of analyses, we argue that there are very different consequences and explanations for why parties might want to engage in individual or group-based targeting strategies.

Argument

We argue that the effects of "being poor" and "living in a poor area" posit different types of incentives depending on how electorally challenged politicians are. Depending on the incentive structure, we expect brokers to target groups or individuals, though not exclusively. These distinctions are novel and improve our understanding of clientelism. In our argument, when certain conditions are met, non-poor individuals do receive clientelism as well. This might explain why some of the more recent

[5] Weitz-Shapiro [2012] argues that politicians opt-out of clientelism since non-poor individuals are more likely to condemn clientelism "due to self-interest or because of *moral* concern[s]" (emphasis is mine). Self-interest refers to the idea that what is distributed through clientelism is discounted from the pool of resources theoretically available to be spent on policy packages. That *is* an economic cost. Certainly building on that intuition, we incorporate the economic advantages/costs of targeting individuals or groups, and when those strategies are efficient and when they are not.

[6] Emphasis is mine.

research has not found evidence in support of the *most* widely accepted predictor of clientelism in the literature: poverty. Additionally, our research design allows us to observe how individual income and the density of the poor contributes in different ways to shape brokers' structure incentive to engage in different types of targeting strategies.

Individual Targeting

Brokers will have incentives to engage in individual targeting when targets are easier to *identify*. Identifiability helps brokers to keep targeted individuals electorally accountable. Higher levels of identification also reduce the costs of keeping the clientelistic contract enforceable, especially when it comes to monitoring. Whereas individual targeting is the safest bet a broker can make, this mechanism is more expensive as it requires brokers to have close relationships with clients. Close broker-client relationships provide brokers with good quality information. The literature usually argues that information is gathered by brokers who are deeply rooted in the communities they target. For example, Carlin and Moseley [2015, p. 15] argue that "[u]nquestionably, brokers are deeply nested in social networks". On the other hand, Finan and Schechter [2012, p. 864] point out that brokers "hire respected community leaders in each village to interact with voters to promote their candidacy and offer them money [...] in exchange for the promise of their vote".

We claim that the capacity brokers have to identify potential clients does not come from third-party sources (i.e. group membership). Generalizing the intuition that brokers need good-quality information, we argue that one of the few observables brokers have at their disposition is how *noticeable* individuals are in their respective contexts. In low-information environments, this new piece of knowledge should be very informative and brokers should be able to update their strategies accordingly. We propose that brokers target individuals based on their notoriety rather than their ties to groups. This idea is very intuitive. For example, should brokers engage in individual targeting, they would rather visit highly noticeable *poor* households in *non*-poor neighborhood. As these households stand out in non-poor contexts, it is easy for brokers to notice whether they need material constructions, whether there are wakes in which they could contribute flowers or birthday parties where they could bring birthday cakes. Poor households need not to be close to each other, they just need to be visible enough for brokers to detect their needs. It is important to stress that the immediate consequence is that income alone does not play a role independently. Rather, it is how income interacts with the density of the poor, making individuals more or less identifiable. Individuals will be more noticeable when non-poor individuals are nested in poor areas (quadrant 1 in Table 1) and when poor individuals are nested in non-poor areas (quadrant 4 in Table 1).

Group Targeting

However, when individual income and the economic development of the area coincide (i.e., poor individuals nested in poor areas, and non-poor individuals nested in non-poor areas), individual targeting is no longer efficient. Under these circumstances, brokers cannot incur the extremely high costs of engaging in individual targeting. Since individuals are masked within their environments, identifiability is hard to achieve. Since individual targets are difficult to identify, brokers will be forced to resort to the *spillover* effects these groups provide, and thus engage in group targeting instead. Table 1 depicts poor individuals nested in poor areas in quadrant 2 and non-poor individuals nested in non-poor areas in quadrant 3.

Group targeting works because it mobilizes electoral support from potential clients who have not received benefits yet. For example, Auyero [2000, p. 65] explains the case of *Alfonsina* in Argentina. *Alfonsina* was part of the *brokers' inner circle* and received a job as a cleaning lady in a public school. As the broker explained to her before getting the job, *Alfonsina* had to be *patient* because as a member of the circle, she was in the pool of potential beneficiaries; It was only a "matter of time" until she could get the job. Building on this intuition, our model presents two ideal types: *actual* and *potential* beneficiaries. The former receives particularistic benefits "today" and vote for the broker's candidate "tomorrow", while the latter do not receive benefits today (in the expectation of receiving them in the future) but *still* vote for the broker's candidate "tomorrow". In such a dynamic, actual beneficiaries want to preserve their respective types; thus, they keep supporting the broker's candidate. Potential beneficiaries want to change their types, but are uncertain when that might happen; as a result, they keep supporting the broker's candidate as well. In order for this mechanism to be sustainable, it requires the broker's ability to not allow the transaction costs of switching strategies to be lower than what it costs clients to wait to be benefited. In other words, brokers need to take care of their reputation and deliver benefits. In this sense, there is a mutual relationship between broker and client. For example, Zarazaga [2014, p. 14] explains that "[b]rokers and voters' interests are aligned. The flow of resources to voters is dependent on their brokers' electoral success. If the broker loses the election and is replaced, clients do not know what the new broker will offer them. A new broker may access fewer resources or choose to distribute them to other people; brokers often remind voters about this". Hence, no matter what the type is, both clients keep voting for the broker's party. Actual beneficiaries vote for the party to keep their type, while potential beneficiaries vote to be able to eventually shift types (to actual beneficiaries). In this sense, when potential beneficiaries vote for the party (even in the absence of benefits), it in fact *helps* actual beneficiaries to *keep* their types. In a similar argument, Rueda [2015] proposes a formal model which suggests that vote-buying is facilitated when voters care about the welfare of other voters.

Potential beneficiaries have two possible strategies. First, they could defect and vote for another

candidate, who might or might not bring them benefits. Alternatively, potential beneficiaries could continue voting for the known broker, and wait. Individual income also plays a role. Given that the poor are risk-averse, potential beneficiaries are better-off waiting (and voting for the broker's party) than defecting. In a slightly different research project, Magaloni [2008, p. 20] explains that under non-democratic contexts, voters have incentives to keep voting for the incumbent government, *even when they oppose it*. The Mexican PRI lasted so long not because of electoral fraud but because voters supported what it represented, the"known devil" for them. As Magaloni explains, hegemonic parties survive when they are able to sustain long-term economic growth and a constant supply of clientelistic transfers. We argue that the transaction cost of switching brokers or defecting is very high since it also involves building confidence relationships with the new broker from scratch. Reputation costs also keep clients disciplined. Having defected from the former broker once, this makes the voter a defection-prone type, which in turn further increases the cost of building those relationships with the new broker. For these reasons, we claim that brokers exploit these self-enforced compliance dynamics.

Individual income and the economic development of the area coincide in quadrant 2 (poor individuals nested in poor areas) and in quadrant 3 (non-poor individuals nested in non-poor areas). Since what is invested in *actual* beneficiaries also mobilizes *potential* beneficiaries, this is the cheapest clientelistic source of electoral support, and as such, it should show the highest levels of clientelism. However, vote-buying is also targeted at non-poor individuals as in quadrant 3 (see also Figure 1). Though vote-buying has decreasing returns to scale in non-poor individuals, low levels of political contestation gives local politicians more room to move, allowing them to divert local resources into more expensive ways of targeting. This situation is sustained due to the very low levels of political opposition itself. In other words, secured seats should be associated to expensive clientelism. One way this is possible is via embezzlement, which should be associated to lack of political competition and low levels of checks and balances.

Case Selection, Data and Design

The unit of analysis is individuals. Particularly, we are interested in testing the effects of individuals with different income levels, being nested in communities with different poverty sizes and being exposed to different levels of political competition, on receiving clientelism. We find Brazil to be a good case because its poverty structure allows having low-income individuals being nested in non-poor areas (and vice versa). Simply put, low income levels do not properly classify individuals into high-poverty density contexts (and vice versa). To test our hypothesis, we use survey data from 2010 from the Latin American Public Opinion Project [LAPOP][7]. To ensure that there is not

[7]"I thank the Latin American Public Opinion Project (LAPOP) and its major supporters (the United States Agency for International Development, the United Nations Development Program, the Inter-American Development

a systematic relationship between personal income and the density of the poor where individuals reside, the data was preprocessed using matching techniques. In other words, based on observables, matching methods force the systematic relationship between these two variables to be zero (King et al. [2011])[8].

Some scholars question the effectiveness of vote-buying, pointing out to a possible decay of this practice. The main problem is that the information brokers have is more often of very low quality. As Carlin and Moseley [2015, p. 15] point out, individual's "electoral profiles are composed of behaviors that are difficult to monitor with certainty and attitudes". For example, in Colombia, the "electoral environment is such that brokers have a hard time identifying the preferred candidates" (Rueda [2016, p. 5]). Given these informational constraints, Dixit and Londregan [1996, p. 1139] argue that some portion of the investment will be wasted, producing a gap between what is spent on clientelism and its returns (Carlin et al. [2015, Chapter?]). However, Brazil is still an interesting case, as it has an electoral system that *incentivizes* clientelism. Several factors such as multimember districts with open lists and the institution of the *candidato nato*[9], "clearly made Brazil one of the most personalistic systems of democratic governance" (Carlin et al. [2015, Chapter?]). In fact, Gingerich [2014, p. 290] finds that vote-buying drastically changes electoral results, concluding that "[v]ote brokerage can still pay electoral dividends in contemporary Brazil".

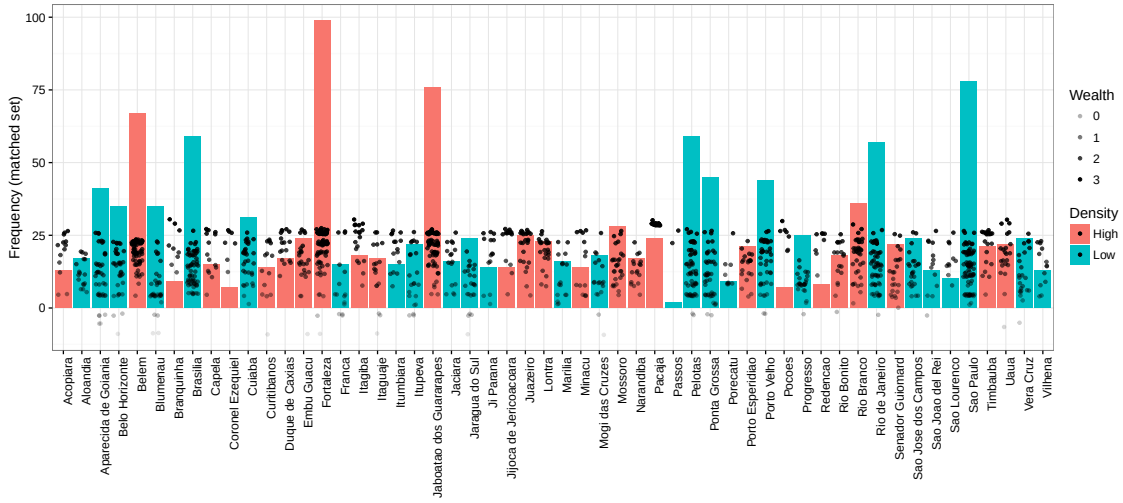

Figure 2: *Distribution of Observations by Municipality, Wealth Index and Density of the Poor*

To measure the size of the poor, we followed a similar strategy presented in Weitz-Shapiro [2012],

Bank, and Vanderbilt University) for making the data available". The sample consists of five strata representing the five main geographical regions of Brazil. Each stratum was further sub-stratified by urban and rural areas.

[8] Figure 6 in the Appendix shows that the raw dataset have already embedded into them low levels of correlation (0.44), while the matched dataset have even lower levels (0.42).

[9] "[R]ule that removed parties' control over the nominations process and let an electoral legislator to decide to run on any party ticket" (Carlin et al. [2015, Chapter?]).

measuring the degree of poverty at the municipal level. Using information from the 2010 Brazilian census[10], a variable was constructed that measures the percentage of individuals who live with less than half of the minimum wage. Given that we observed the municipality of residence for each individual in the survey, we were able to merge that percentage with the LAPOP dataset. Although this value was originally a semi-continuous variable, it had to be dichotomized at the median (29%) to be able to construct the matched sample. There have been theoretical advances regarding general treatment effects regimes for continuous or semi-continuous response doses (Imai and van Dyk [2004], Hirano and Imbens [2004]). However, algorithms with the ability to match continuous treatment variables are not common. Figure 3 shows the continuous distribution dichotomized at the median (dashed line). However, we still provide alternative specifications using the original continuous variable as a robustness, weighting on the generalized propensity score (see Imbens [2004], Guardabascio and Ventura [2014] and Imai and Ratkovic [2014])[11]. The advantage of this strategy is that it does not require dichotomization. The same covariates used in the matching procedure were used to create the `GPS` weighting vector.

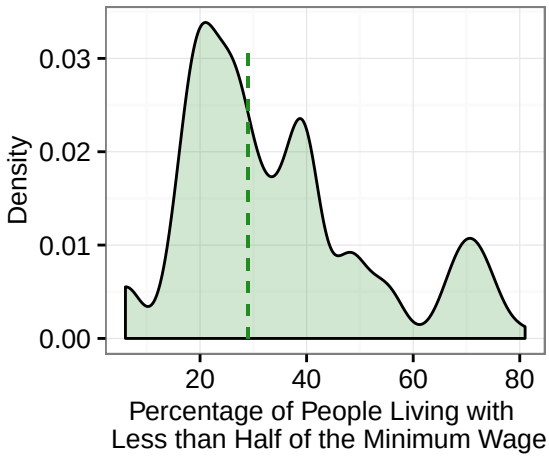

Figure 3: *Distribution of the Size of the Poor*

To break further systematic relationships between group poverty and other important confounding factors, municipal opposition, municipal population and individual involvement in civic associations were included as well. Matching breaks any systematic relationship between the size of the poor and these covariates by balancing the distribution of all these variables. Matching does so by deleting observations for matches which cannot be found[12]. As a result, a good covariate balance was obtained (see Figure 8 in the Online Appendix). From a statistical standpoint, preprocessed

[10] Official data comes from the Bureau of Statistics of Brazil IBGE.
[11] To generate the weighting vector, we used the `CBPS R` package (Fong et al. [2014]).
[12] The final procedure matched 761 individuals living in the low-density condition with 676 individuals living in the high-density condition.

datasets are less model-dependent (Ho et al. [2007]) and prevent analysts from making extreme counterfactuals (King and Zeng [2005]). The matching routine used was the `full` matching routine (Hansen [2004], Rosenbaum [2010]) via the `MatchIt R` package (King et al. [2011]). Table 3 and Table 2 in the Appendix provide summary statistics for both the matched and raw datasets[13]. The preprocessed dataset has 54 municipalities while the raw dataset (GPS) has 54 too. Figure 2 shows the municipalities and which ones are considered "high" or "low" in terms of the density of the poor after the dichotomization process. The figure also shows that there exists considerable variance regarding income in both high and low poverty density conditions[14].

To measure political competition, the paper follows Weitz-Shapiro [2012]. Using official electoral data from the 2008 municipal elections[15], a variable was constructed that measures the percentage of seats that are not controlled by the mayor's party in a given municipal council. Though the survey provides a question for income, people who are somewhat better off than their neighbors but live in poor areas may not "feel" poor. If this is the case, this could confound the results[16]. Additionally, when answering the questioner, individuals might not want to reveal their true incomes (either because it is too low or too high). Following the advice of Córdova [2008] and Córdova and Seligson [2009, 2010], a relative wealth index (RWI) was constructed. Using principal component analyses, this index measures wealth based on actual assets weighted by how common those assets are. Different indexes were constructed for urban and rural contexts.

Outcome Variable

Clientelism was measured using the question that asks if *a candidate or someone from a political party offered [the respondent] something, like a favor, food, or any other benefit or thing in return for [her/his] vote or support?* Subjects could answer whether this had happened *often*, *sometimes* or *never*. Carreras and Irepoglu [2013] and Holland and Palmer-Rubin [2015] use the same dataset and outcome variable. As they explain, the question did not ask whether respondents *took* the offer, hence it should not be an important source of bias. In order to have a dichotomous response variable, the alternatives *often* (n = 91) and *sometimes* (n = 150) were collapsed into one, leaving *never* (n = 1196) unchanged.

Control Variables

Perception of Corruption was included in order to keep constant the effect of respondents who declared clientelistic activity when in reality they were referring to corruption scandals[17]. Rueda

[13] Tables generated using the `stargazer R` package (Hlavac [2015]).
[14] Figure 7 in the Online Appendix shows the frequency of individuals by municipality in both raw and matches datasets.
[15] Tribunal Superior Eleitoral.
[16] I thank the reviewers of LAPS for this suggestion.
[17] I thank Cesar Zucco for this suggestion.

[2015], Holland and Palmer-Rubin [2015] and Carreras and Castaneda-Angarita [2014] argue that brokers target civic associations. Following Holland and Palmer-Rubin [2015, p. 28], who use the same dataset/year, an additive index to measure civic participation (*Political Involvement*) was created[18]. Group size has also been claimed to be important (Stokes [2005], Kitschelt and Wilkinson [2006], Rueda [2015]). Using census data, a variable to measure population size at the municipal level was included. We also included a dummy for urban/rural. Building on some of the distributive politics literature, following particularly Stokes [2005], Dixit and Londregan [1996] and Nichter [2008], a variable that captures party identification (*Political Id.*) was included. The idea was to control for core/swinger targeting. Higher levels of democratic support should be negatively associated with clientelism (Carlin and Moseley [2015]). Using the same dataset, a variable measuring democratic support was included. Gonzalez-Ocantos et al. [2014] finds that schooling plays a negative role on clientelism; hence, we control for educational levels too.

Estimation Method

This paper is concerned with the likelihood of an individual, conditioned on several factors, to receive clientelism. Individuals (our unit of analysis) are clustered in a number of important factors such as levels of municipal political competition, municipal poverty and municipal population size. In order to account for these clustering effects, we use GEE logistic regressions. Generalized estimating equations were introduced by Liang and Zeger [1986] to fit clustered, repeated (i.e. correlated) and panel data. This method is especially well suited when the data are binary (Hanley et al. [2003]). GEE models are similar to random effects (Gardiner et al. [2009]) in that they allow observations to be nested in hierarchical structures. This method requires analysts to parameterize the working correlation matrix. Though Hedeker and Gibbons [2006, p. 139] explain that "the GEE is robust to misspecification of the correlation structure"[19], Hardin and Hilbe [2013, p. 166] point out that "[i]f the observations are clustered (not collected over time), then [...] the exchangeable correlation structure" is the most appropriated working correlation matrix. Given that our dataset does not follow a panel but rather a clustered structure, the exchangeable correlation matrix was specified for both the GPS weighted and matched datasets.

Due to the flexibility of this method, GEEs have several advantages. However, as in any random-effect type of model, GEEs' estimates remain uninterpretable in practice (Carlin et al. [2001]), making regression tables useless from a substantive standpoint. In our case, the problem is even more severe due to the interactive hypotheses being tested in this paper. The main hypothesis is tested by fitting a parameter for the multiplicative term between the variables `wealth index`, `political`

[18] This variable was constructed adding up the frequency of attendance at religious organizations, community improvement committees and political party meetings (variables `cp6`, `cp8` and `cp13`, respectively).

[19] Carlin et al. [2001, p. 402], argue that "[r]elatively minor differences in estimates may arise depending on how the estimating equations are weighted, in particular within the generalized estimating equation (GEE) framework". Westgate and Burchett [2016] and Gardiner et al. [2009, p. 227] make the same point.

`competition` and `high density`. Methodologists agree on "not interpret[ing] the coefficients on the constitutive terms", as they lack substantive meaning (Brambor et al. [2005, p. 77]). These problems get more complex when it comes to generalized models and a series of challenges arise. As Ai and Norton [2003] explain, *(1) the interaction effect could be nonzero, even when the estimation says it is zero, (2) the statistical significance of the interaction effect cannot be tested with a simple t-test on the coefficient of the interaction term, (3) the interaction effect is conditional on the independent variables, [...] and (4) the interaction effect may have different signs for different values of covariates.* Brambor et al. [2005, p. 74] offers the same advice, i.e. "one cannot determine whether a model should include an interaction term simply by looking at the significance of the coefficient on the interaction term". Given that cross-partial derivatives are not advisable either, simulation methods are required (Zelner [2009]). Particularly, we follow the simulation approach introduced in King et al. [2000][20]. This procedure samples from the point estimates (via simulation), generating a new larger distribution. That is, taking the single estimated parameters (the regression coefficients), we construct a distribution of estimated values for each. Relying on the central limit theorem, with enough sampling draws, the new simulated distribution is a transformation that approximates with great degree of precision the (uninterpretable) coefficients. Subsequently, means and uncertainty measures can be constructed for each of these distributions. From a substantive standpoint, simulation methods also allow for sampling new distributions at different values of the independent variables. This will be important to simulate the expected value of clientelism for different "profiles", such as *non*-poor individuals nested in *high*-poor dense municipalities in contexts of *high* political competition, and others.

Results

Since it is "impossible to evaluate conditional hypotheses using only the information provided in traditional results tables," (Brambor et al. [2005, p. 76]) we rather focus on the substantive results using simulation methods. However, we still present the raw results in Table 4 in the Appendix[21]. The first column shows the estimates for the matched dataset while the second column shows the results for the GPS wighted model. Virtually all coefficients have the same size and sign. Analogous to Table 1, in Figure 4 we simulate the predicted probabilities of being targeted using both datasets. The substantive takeaway is that the differences in the results of the weighted regression and the matched datasets are monotonically related to each other. We do find some non-monotonic changes, for example in quadrant 3. However, this does not affect the substantive results.

[20] Lam [2011] in Imai et al. [2009].
[21] Table generated via the `texreg R` package.

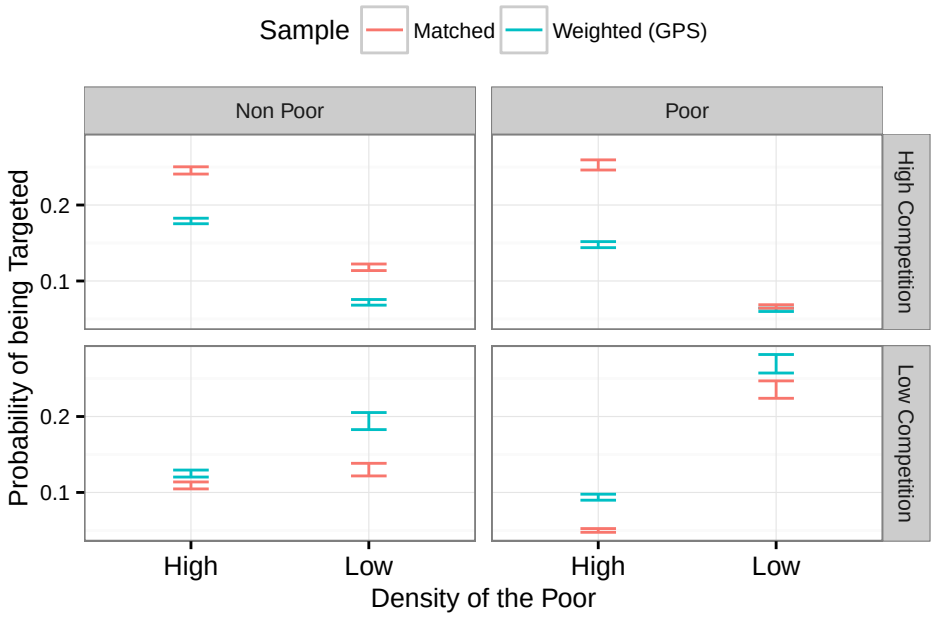

Figure 4: *Simulated Expected Values of Clientelism*

Density of the Poor, Political Competition and Income

Analogous to Table 1, Figure 4 is divided into four panels, depicting simulated probabilities of being targeted conditional on personal income, whether individuals are nested in poor/non-poor municipalities and whether individuals are exposed to contested/not-contested municipalities. The left-right panel depicts simulations for the upper ("non-poor", 75%) and lower ("poor", 25%) quartiles of the continuous `wealth index` variable. In turn, the upper-lower panel shows simulated values for the maximum value (100%) and lowest value (43%) of the `municipal opposition` index. The X-Axis shows whether individuals are nested in poor municipalities ("high density of the poor") or non-poor municipalities ("low density of the poor"). The plot shows two simulated probability distributions for each cell, one for the matched sample and one for the weighted sample. In the case of the weighted sample, "low density" represents the lower quartile of the continuous variable that measures the percentage of individuals living with less than half of the minimum wage. "High density" is the upper quartile of the same variable[22].

Figure 4 suggests that brokers engage in *individual* targeting when individuals are identifiable. That is when individuals are poor *but* nested in low-dense municipalities (quadrant 4, with a

[22]However, the weighted model in Table 4 uses the *continuous* version of this variable. Here we dichotomize it for the purposes of the simulations and the plot.

probability of 24% of being targeted[23]) and when individuals are not poor but nested in high-poor dense municipalities (quadrant 1, with a probability of 25% of being targeted). *Group* targeting is more efficient in quadrants 2 and 3. Particularly in the former, brokers take advantage of the spillover effects of vote-buying. In this setting, low-income individuals nested in poor municipalities provide enough economies of scale. Every unit invested in vote-buying is multiplied when both actual *and* potential voters are electorally mobilized. Given the faster discount rates of low-income individuals, and the necessity of politicians to gather more electoral support, the probability of being targeted is one of the highest (25%). Non-poor individuals in the high-poor density condition (quadrant 1) also have one of the highest probabilities. This suggests that political competition incentivizes motivated brokers to engage in vote-buying regardless of personal income when political competition is high, targeting identifiable non-poor individuals in quadrant 1 *and* groups (taking advantage of the spillovers of vote-buying) in quadrant 2. We claim that brokers employ segmented targeting strategies in a simultaneous way. Finally, we were expecting non-poor individuals nested in low-poor dense municipalities exposed to lower levels of political competition (quadrant 3) to still receive some vote-buying. We theorized that in contexts where there is less political competition, there are less checks and balances and hence incumbents have more room to move. Even when politicians are not in need of more electoral support, they still engage in this expensive form of vote-buying.

Our results find support for Weitz-Shapiro [2012]'s paper, i.e. in general, higher levels of political competition shift the probability of receiving vote-buying upwards. However, we also find that low levels of political competition are still associated with vote-buying. In particular, we find that political competition *reverses the direction* in which the density of the poor is associated with vote-buying. When municipal mayors are more politically challenged, brokers target *groups* of poor individuals in poor municipalities (quadrant 2) and non-poor *individuals* nested in poor municipalities (quadrant 1). We claim that when political competition is high, brokers are in more need to gather higher levels of electoral support at the lower cost. Individual profiles in quadrants 1-2 provide the cheapest possible strategies relative to quadrants 3-4, respectively. Quadrant 1 makes use of individual and selective targeting of the most expensive clients: the non-poor. We argued before that individual targeting was expensive relative to group targeting. However, where the density of the poor is high, there cannot be a large number of non-poor individuals, reducing the net costs of this strategy. It is cheaper to target this limited number of individuals than targeting non-poor individuals in non-poor municipalities (quadrant 3). These individuals are less identifiable, and their higher incomes makes them more expensive to target as a group. Similarly, given that the poor value more instant transfers, clientelism is more effective when income is low. This is especially the case in situations where there is a large concentration of them. In this scenario, targeting

[23] Matched sample.

propagates via spillovers. For brokers it is better to target poor individuals *en masse* relying on spillovers than individually (as it happens in quadrant 4).

Population Size and Organization Buying

So far we have introduced the idea that brokers shift targeting strategies, directing their resources to individuals or groups depending on the levels of (un)certainty each strategy presents. Though the argument focuses specifically on targeting, by *explicitly* considering macro explanations, such as the role of the density of the poor on clientelism, this argument is novel. We agree with Carlin and Moseley [2015], in that the vote-buying literature consistently looks at individual explanations (only)[24]. One of the secondary objectives of this paper is to explicitly incorporate those factors, particularly by systematizing the incentives parties have. This section tests against the density of the poor, one individual-level variable (political involvement) and one macro-variable (population size). These two variables are highly recurrent in the literature.

Figure 5 shows a plot divided into two panels. Panel *a* shows simulated expected values of receiving clientelism at different levels of political involvement. As the blue lines suggests, individuals who participate in civic associations have higher probabilities of being targeted. This is in line with findings in previous research (Schaffer and Baker [2015], Carreras and Castaneda-Angarita [2014, p. 7], Calvo and Murillo [2013], Holland and Palmer-Rubin [2015, p. 16] and Rueda [2015]). However, once we decompose these effects, we see that being nested in high-dense areas contributes substantially more to the model. These differences are statistically significant. Panel *b* shows the probability of being targeted given increments in the size of the population where individuals are nested. In line with the literature, we also see that this relation is negative (Stokes [2005, 323], Kitschelt and Wilkinson [2006, 10], Magaloni [2008, p. 67], Rueda [2016], Bratton [2008] and Gingerich and Medina [2013, p. 456]). However, the effect of being nested in high-poor dense municipalities outperforms the effects of population size, suggesting spillover effects (even when income/wealth and political competition are held constant). What this exercise tells us is twofold. First, it is important to consider macro explanations of vote-buying, as they shape brokers' incentive structures when deciding when and who to target. All in all, structural factors such as the density of the poor and political competition, are one of the few and perhaps only observable factors brokers have to make decisions on regarding where to invest in clientelism. Second, population size does shift the costs of clientelism. Larger populations carry more coordination dilemmas, increasing the probability of defection, making clientelism an unsafe strategy for brokers (as panel *b* suggests). However, as we have seen in this paper, these costs are alleviated when brokers take advantage of the spillover effects of clientelism. This strongly suggests that there are some costs that matter more than others. We have suggested this idea twice in this article: it is not clear how "moral costs"

[24] Weitz-Shapiro [2012], Rueda [2015] and others are notable exceptions.

refrain democratic *but* poor individuals from engaging in clientelism, and it is also not clear how "coordination costs" deter brokers, considering that large-sized groups potentially provides greater electoral support. As we have argued here, coordination costs should be alleviated by resorting to group targeting and taking advantage of the spillover effects of clientelism.

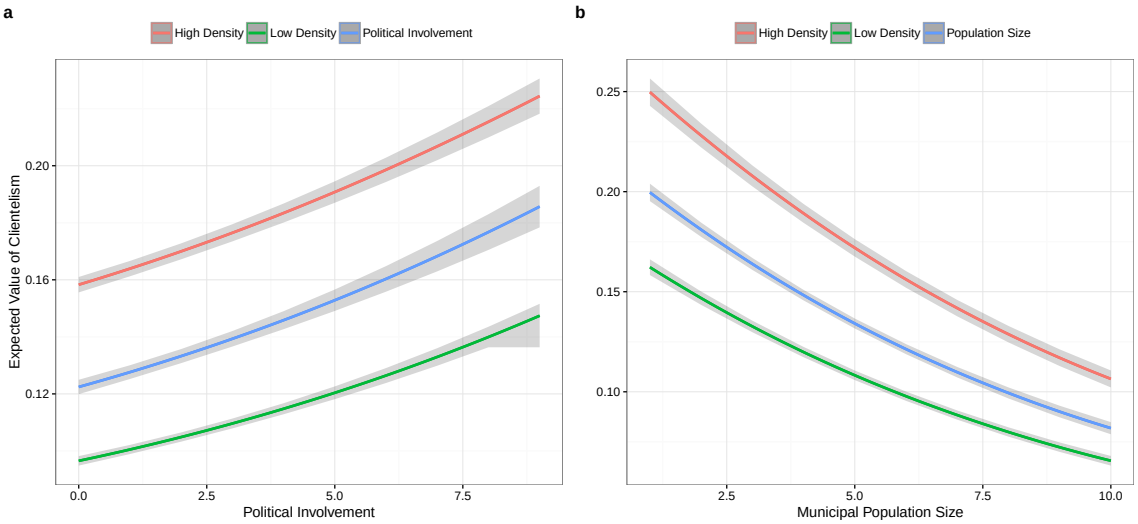

Figure 5: *Simulated Expected Values of Clientelism: Political Involvement and Population Size (with 95% confidence intervals)*

Conclusion

This article presents an argument that systematizes the priorities brokers have when it comes to targeting. Depending on how individuals discount the future (income), pressures to secure higher levels of electoral support (electoral competition) and how dense (or not) the concentration of poor individuals is, brokers will engage in *group* or *individual* targeting, though not exclusively. Individual targeting is more effective when individuals are more noticeable. Group targeting is more effective when the size of the poor group provides spillover effects multiplying the resources invested in clientelism. However, groups of poor individuals in poor municipalities and non-poor individuals in poor areas provide the cheapest strategies, especially when brokers seek more electoral support at the lowest cost possible. We made also the case that structural/contextual factors are one of the few and perhaps only observable characteristics brokers have available to make strategic decisions on where to invest in clientelism. Particularly, we presented the case of the density of the poor. Whether individuals live in poor or non-poor groups, as we argued, this factor not only makes individuals more identifiable (or not) but also provides (or not) economies of scale, gathering support for both actual and potential beneficiaries/voters. Factors such as poverty, both individual and municipal, along with political competition have been (individually) considered before. Rather

than disconfirm/confirm prior findings, this paper focused on how these factors combined provide an explanation for the question of *when* brokers target groups or individuals, although not exclusively.

Appendix

Table 2: *Summary Statistics: Raw Sample*

Statistic	N	Mean	St. Dev.	Min	Max
Clientelism	1,483	0.000	0.000	0	0
Wealth Index	1,483	1.543	0.846	−0.899	3.050
Municipal Opposition	1,483	81.761	11.821	43	100
Density of the Poor	1,483	2.435	1.120	1	4
Municipal Population	1,483	5.393	2.841	1	10
Urban	1,483	0.860	0.347	0	1
Political Involvement Index	1,483	1.792	1.619	0	9
Support for Democracy	1,483	5.426	1.682	1	7
Party Id.	1,483	5.939	1.150	1	12
Perception of Corruption	1,483	2.027	1.003	0	3
Years of Education	1,483	9.398	3.857	1	18

Table 3: *Summary Statistics: Matched Sample*

Statistic	N	Mean	St. Dev.	Min	Max
Clientelism	1,437	0.168	0.374	0	1
Wealth Index	1,437	1.557	0.811	−0.899	3.050
Municipal Opposition	1,437	81.912	11.749	43	100
High Density of the Poor	1,437	0.470	0.499	0	1
Municipal Population	1,437	5.384	2.792	1	10
Urban	1,437	0.860	0.347	0	1
Political Involvement Index	1,437	1.784	1.613	0	9
Support for Democracy	1,437	5.417	1.684	1	7
Party Id.	1,437	5.934	1.160	1	12
Perception of Corruption	1,437	2.029	1.000	0	3
Years of Education	1,437	9.359	3.843	1	18

	Matched Data	Weighted Data
(Intercept)	1.404	2.957
	(1.968)	(2.691)
Wealth Index	−1.374	−1.320
	(0.990)	(1.209)
Municipal Opposition	−0.040	−0.061
	(0.025)	(0.032)
High Poor Density	−6.550**	
	(2.399)	
Municipal Population	−0.115*	−0.101
	(0.048)	(0.053)
Urban	−0.091	−0.077
	(0.401)	(0.416)
Political Involvement	0.046	0.047
	(0.055)	(0.055)
Support for Democracy	−0.056	−0.051
	(0.046)	(0.048)
Party Id.	−0.082	−0.087
	(0.053)	(0.052)
Perception of Corruption	0.240**	0.267**
	(0.088)	(0.089)
Years of Education	0.051*	0.054**
	(0.021)	(0.020)
Wealth Index * Municipal Opposition	0.018	0.013
	(0.013)	(0.015)
Wealth Index * High Poor Density	2.509	
	(1.319)	
Municipal Opposition * High Poor Density	0.085**	
	(0.030)	
Wealth Index * Municipal Opposition * High Poor Density	−0.029	
	(0.016)	
Density of the Poor		−1.992*
		(0.921)
Wealth Index * Density of the Poor		0.555
		(0.372)
Municipal Opposition * Density of the Poor		0.024*
		(0.011)
Wealth Index * Municipal Opposition * Density of the Poor		−0.005
		(0.004)
Num. obs.	1437	1483
Num. clust.	54	54

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. Clustered standard errors at the municipality level.

Table 4: *Generalized Estimating Logistic Equations: Clientelism*

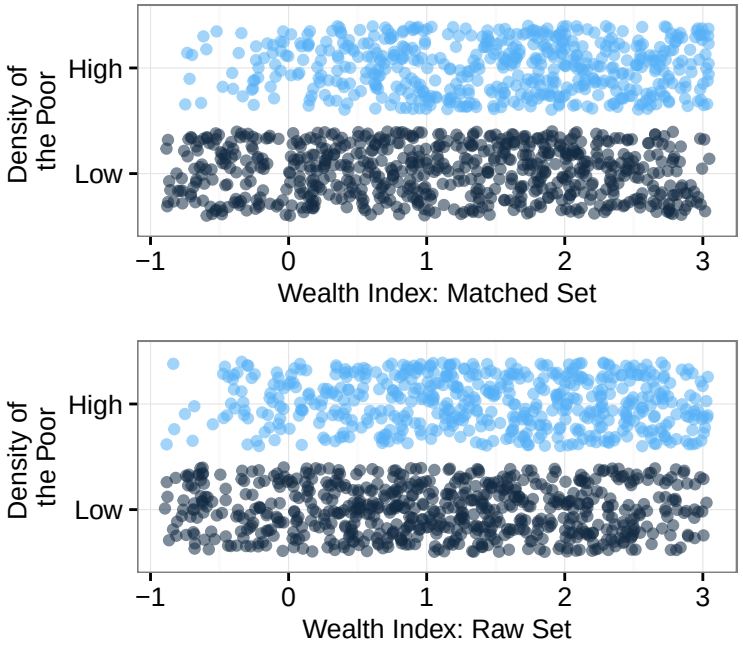

Figure 6: *Distribution of Pre and Post Matching Observations by Wealth Index and Density of the Poor*

I. Online Appendix

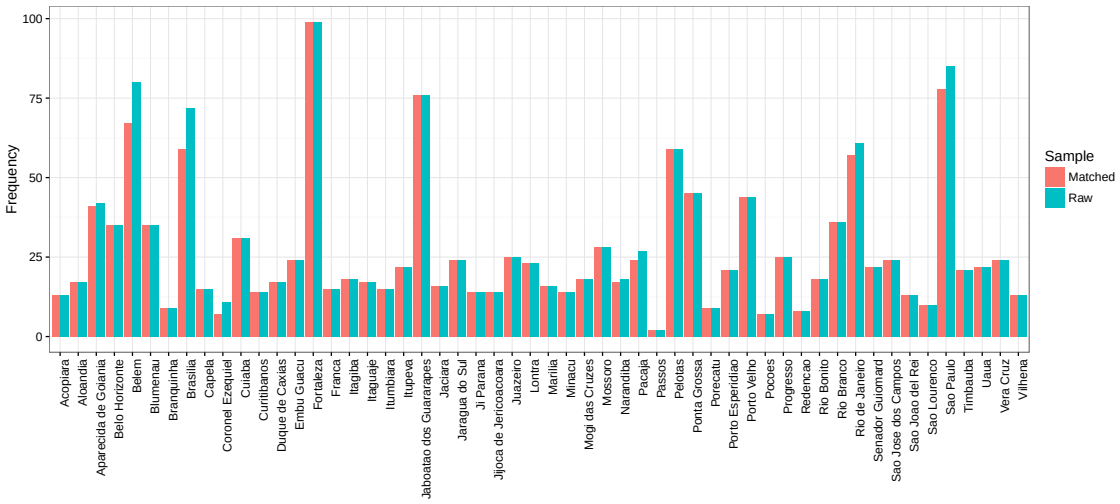

Figure 7: *Frequency of Individuals by Municipality, Pre and Post Matching Deletion*

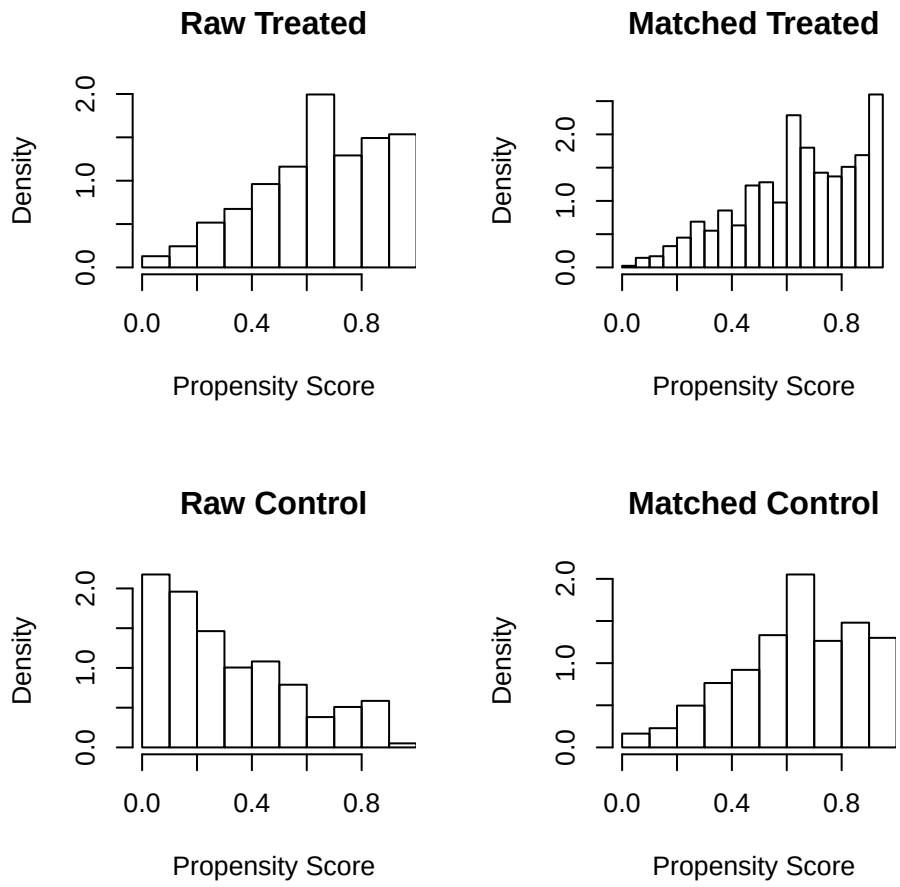

Figure 8: *Pre and Post Matching Balance: Distribution of Propensity Scores*

References

Chunrong Ai and Edward Norton. Interaction Terms in Logit and Probit Models. *Economics Letters*, 80(1):123–129, 2003. ISSN 01651765. doi: 10.1016/S0165-1765(03)00032-6.

John Aldrich. *Why Parties? The Origin and Transformation of Political Parties in America*. The University of Chicago Press, 1995. ISBN 0226012727.

Javier Auyero. The Logic of Clientelism in Argentina: An Ethnographic Account. *Latin American Research Review*, 35(3):55–81, 2000. URL http://www.jstor.org/stable/2692042.

Thomas Brambor, William Roberts Clarks, and Matt Golder. Understanding Interaction Models: Improving Empirical Analyses. *Political Analysis*, 14(1):63–82, may 2005. ISSN 1047-1987. doi: 10.1093/pan/mpi014. URL http://pan.oxfordjournals.org/cgi/doi/10.1093/pan/mpi014.

Michael Bratton. Vote Buying and Violence in Nigerian Election Campaigns. *Electoral Studies*, 27(4):621–632, dec 2008. ISSN 02613794. doi: 10.1016/j.electstud.2008.04.013. URL http://linkinghub.elsevier.com/retrieve/pii/S0261379408000589.

Valeria Brusco, Marcelo Nazareno, and Susan Stokes. Vote Buying in Argentina. *Latin American Research Review*, 39(2):66–88, 2004.

Ernesto Calvo and María Victoria Murillo. Who Delivers? Partisan Clients in the Argentine Electoral Market. *American Journal of Political Science*, 48(4):742–757, oct 2004. ISSN 0092-5853. doi: 10.1111/j.0092-5853.2004.00099.x. URL http://doi.wiley.com/10.1111/j.0092-5853.2004.00099.x.

Ernesto Calvo and María Victoria Murillo. When Parties Meet Voters: Assessing Political Linkages Through Partisan Networks and Distributive Expectations in Argentina and Chile. *Comparative Political Studies*, 46(7):851–882, jul 2013. ISSN 0010-4140. doi: 10.1177/0010414012463882. URL http://cps.sagepub.com/cgi/doi/10.1177/0010414012463882.

John Carlin, Rory Wolfe, C. Hendricks Brown, and Andrew Gelman. A Case Study on the Choice, Interpretation and Checking of Multilevel Models for Longitudinal Binary Outcomes. *Biostatistics*, 2(4):397–416, dec 2001. ISSN 14654644. doi: 10.1093/biostatistics/2.4.397. URL http://www.ncbi.nlm.nih.gov/pubmed/12933632http://biostatistics.oupjournals.org/cgi/doi/10.1093/biostatistics/2.4.397.

Ryan Carlin and Mason Moseley. Good Democrats, Bad Targets: Democratic Values and Clientelistic Vote Buying. *The Journal of Politics*, 1(77):14–26, 2015. ISSN 0140-525X. URL http://www.jstor.org/stable/10.1086/678307.

Ryan Carlin, Matthew Singer, and Elizabeth Zechmeister, editors. *The Latin American Voter: Pursuing Representation and Accountability in Challenging Contexts*. University of Michigan Press, 2015.

Miguel Carreras and Néstor Castaneda-Angarita. Who Votes in Latin America? A Test of Three Theoretical Perspectives. *Comparative Political Studies*, 47(8):1079–1104, jul 2014. ISSN 0010-4140. doi: 10.1177/0010414013488558. URL http://cps.sagepub.com/cgi/doi/10.1177/0010414013488558.

Miguel Carreras and Yasemin Irepoglu. Trust in Elections, Vote Buying, and Turnout in Latin America. *Electoral Studies*, 32(4):609–619, dec 2013. ISSN 02613794. doi: 10.1016/j.electstud.2013.07.012. URL http://linkinghub.elsevier.com/retrieve/pii/S0261379413001121.

Abby Córdova. Methodological Note: Measuring Relative Wealth using Household Asset Indicators. *AmericasBarometer Insights*, (6):1–9, 2008. URL http://vanderbilt.edu/lapop/insights/I0806en.pdf.

Abby Córdova and Mitchell Seligson. Economic Crisis and Democracy in Latin America. *PS: Political Science & Politics*, 42(04):673, oct 2009. ISSN 1049-0965. doi: 10.1017/S1049096509990114. URL http://journals.cambridge.org/action/displayAbstract?fromPage=online{&}aid=6221688http://www.journals.cambridge.org/abstract{_}S1049096509990114.

Abby Córdova and Mitchell Seligson. Economic Shocks and Democratic Vulnerabilities in Latin America and the Caribbean. *Latin American Politics and Society*, 52(2):1–35, may 2010. ISSN 1531426X. doi: 10.1111/j.1548-2456.2010.00080.x. URL http://doi.wiley.com/10.1111/j.1548-2456.2010.00080.x.

Avinash Dixit and John Londregan. The Determinants of Success of Special Interests in Redistributive Politics. *The Journal of Politics*, 58(4):1132–1155, 1996.

Rederico Finan and Aura Schechter. Vote-Buying and Reciprocity. *Econometrica*, 80(2):863–881, 2012. ISSN 0012-9682. doi: 10.3982/ECTA9035. URL http://doi.wiley.com/10.3982/ECTA9035.

Christian Fong, Marc Ratkovic, Kosuke Imai, and Xiaolin Yang. Cbps: Covariate balancing propensity score (cbps) estimation, 2014.

Joseph Gardiner, Zhehui Luo, and Lee Anne Roman. Fixed Effects, Random effects and GEE: What Are The Differences? *Statistics in Medicine*, 28(2):221–239, jan 2009. ISSN 02776715. doi: 10.1002/sim.3478. URL http://doi.wiley.com/10.1002/sim.3478.

Robert Gay. *Popular Organization and Democracy in Rio De Janeiro: A Tale of Two Favelas*. Temple University Press, 1993.

Robert Gay. Rethinking Clientelism: Demands, Discourses and Practices in Contemporary Brazil. *Luso-Brazilian Review*, 36(December):7–24, 1998.

Daniel Gingerich. Brokered Politics in Brazil: An Empirical Analysis. *Quarterly Journal of Political Science*, 9(3):269–300, 2014. ISSN 15540634. doi: 10.1561/100.00013040. URL http://www.nowpublishers.com/articles/quarterly-journal-of-political-science/QJPS-13040.

Daniel Gingerich and Luis Fernando Medina. The Endurance and Eclipse of the Controlled Vote: A Formal Model of Vote Brokerage Under the Secret Ballot. *Economics & Politics*, 25(3):n/a–n/a, jul 2013. ISSN 09541985. doi: 10.1111/ecpo.12020. URL http://doi.wiley.com/10.1111/ecpo.12020.

Ezequiel Gonzalez-Ocantos, Chad de Jonge, Carlos Meléndez, Javier Osorio, and David Nickerson. Vote Buying and Social Desirability Bias: Experimental Evidence from Nicaragua. *American Journal of Political Science*, 56(1):202–217, jan 2012. ISSN 00925853. doi: 10.1111/j.1540-5907.2011.00540.x. URL http://doi.wiley.com/10.1111/j.1540-5907.2011.00540.x.

Ezequiel Gonzalez-Ocantos, Chad Kiewiet de Jonge, and David Nickerson. The Conditionality of Vote-Buying Norms: Experimental Evidence from Latin America. *American Journal of Political Science*, 58(1):197–211, jan 2014. ISSN 00925853. doi: 10.1111/ajps.12047. URL http://doi.wiley.com/10.1111/ajps.12047.

Barbara Guardabascio and Marco Ventura. Estimating the Dose-Response Function through a Generalized Linear Model Approach. *The Stata Journal*, 14(1):141–158, 2014.

James Hanley, Abdissa Negassa, Michael Edwardes, and Janet Forrester. Statistical Analysis of Correlated Data Using Generalized Estimating Equations: An Orientation. *American Journal of Epidemiology*, 157(4):364–375, 2003. ISSN 00029262. doi: 10.1093/aje/kwf215.

Ben Hansen. Full Matching in an Observational Study of Coaching for the SAT. *Journal of the American Statistical Association*, 99(467):609–618, sep 2004. ISSN 0162-1459. doi: 10.1198/016214504000000647. URL http://www.tandfonline.com/doi/abs/10.1198/016214504000000647.

James Hardin and Joseph Hilbe. *Generalized Estimating Equations*. CRC Press, Boca Raton, FL, 2nd. edition, 2013. doi: 10.1002/0470013192.bsa250.

Donald Hedeker and Robert Gibbons. *Longitudinal Data Analysis*. Wiley Series in Probability and Statistics. John Wiley & Sons, Inc., Hoboken, NJ, USA, mar 2006. ISBN 9780470036488. doi: 10.1002/0470036486. URL http://doi.wiley.com/10.1002/0470036486.

Keisuke Hirano and Guido Imbens. The Propensity Score with Continuous Treatments. In Andrew Gelman and Xiao-Li Meng, editors, *Applied Bayesian Modeling and Causal Inference from Incomplete-Data Perspectives*, volume 0226164, pages 73–84. Wiley, 2004. ISBN 978-0470090435.

Marek Hlavac. *stargazer: Well-Formatted Regression and Summary Statistics Tables*, 2015. URL http://CRAN.R-project.org/package=stargazer. R package version 5.2.

Daniel Ho, Kosuke Imai, Gary King, and Elizabeth Stuart. Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference. *Political Analysis*, 15(3):199–236, dec 2007. ISSN 1047-1987. doi: 10.1093/pan/mpl013. URL http://pan.oxfordjournals.org/cgi/doi/10.1093/pan/mpl013.

A. C. Holland and Brian Palmer-Rubin. Beyond the Machine: Clientelist Brokers and Interest Organizations in Latin America. *Comparative Political Studies*, 48(9):1186–1223, aug 2015. ISSN 0010-4140. doi: 10.1177/0010414015574883. URL http://cps.sagepub.com/cgi/doi/10.1177/0010414015574883.

Kosuke Imai and Marc Ratkovic. Covariate Balancing Propensity Score. *Journal of the Royal Statistical Society*, 76(1):243–263, jan 2014. ISSN 13697412. doi: 10.1111/rssb.12027. URL http://doi.wiley.com/10.1111/rssb.12027.

Kosuke Imai and David van Dyk. Causal Inference With General Treatment Regimes: Generalizing the Propensity Score. *Journal of the American Statistical Association*, 99(467):854–866, sep 2004. ISSN 0162-1459. doi: 10.1198/016214504000001187. URL http://www.tandfonline.com/doi/abs/10.1198/016214504000001187.

Kosuke Imai, Gary King, and Olivia Lau. Zelig: Everyone's statistical software, 2009. URL http://gking.harvard.edu/zelig.

Guido Imbens. Nonparametric Estimation of Average Treatment Effects under Exogeneity: A Review. *The Review of Economics and Statistics*, 86(1):4–29, 2004. URL http://www.jstor.org/stable/3211657.

Stuti Khemani. Buying Votes Versus Supplying Public Services: Political Incentives to Under-Invest in Pro-Poor Policies. *Journal of Development Economics*, 117:84–93, 2015. ISSN 03043878. doi: 10.1016/j.jdeveco.2015.07.002. URL http://linkinghub.elsevier.com/retrieve/pii/S0304387815000814.

Gary King and Langche Zeng. The Dangers of Extreme Counterfactuals. *Political Analysis*, 14:131–159, nov 2005. ISSN 1047-1987. doi: 10.1093/pan/mpj004. URL http://pan.oxfordjournals.org/cgi/doi/10.1093/pan/mpj004.

Gary King, Michael Tomz, and Jason Wittenberg. Making the Most of Statistical Analyses: Improving Interpretation and Presentation. *American Journal of Political Science*, 44(2):341–355, apr 2000. ISSN 00925853. doi: 10.2307/2669316. URL http://www.jstor.org/stable/2669316?origin=crossref.

Gary King, Kosuke Imai, and Elizabeth Stuart. MatchIt: Nonparametric Preprocessing for Parametric Causal Inference. *Journal of Statistical Software*, 42(8), 2011. URL http://gking.harvard.edu/matchit.

Herbert Kitschelt. Linkages between Citizens and Politicians in Democratic Polities. *Comparative Political Studies*, 33(6-7):845–879, sep 2000. ISSN 0010-4140. doi: 10.1177/001041400003300607. URL http://cps.sagepub.com/cgi/doi/10.1177/001041400003300607.

Herbert Kitschelt and Steven Wilkinson, editors. *Patrons, Clients and Policies: Patterns of Democratic Accountability and Political Competition*. Cambridge University Press, 2006. ISBN 978-0-521-69004-1.

Patrick Lam. logit-gee: General estimating equation for logistic regression, 2011.

Kung-Yee Liang and Scott Zeger. Longitudinal Data Analysis Using Generalized Linear Models. *Biometrika*, 73(1):13–22, 1986.

Beatriz Magaloni. *Voting for Autocracy: Hegemonic Party Survival and its Demise in Mexico*. Cambridge University Press, 2008.

Marcelo Nazareno, Valeria Brusco, and Susan Stokes. Why Do Clientelist Parties Target the Poor? 2008.

Simeon Nichter. Vote Buying or Turnout Buying? Machine Politics and the Secret Ballot. *American Political Science Review*, 102(01):19–31, feb 2008. ISSN 0003-0554. doi: 10.1017/S0003055408080106. URL http://www.journals.cambridge.org/abstract{_}S0003055408080106.

Mancur Olson. *The Logic of Collective Action*. Public Goods and the Theory of Groups. Harvard University Press, 1965.

Paul Rosenbaum. *Design of Observational Studies*. Springer Series in Statistics. Springer, 2nd. edition, 2010.

Miguel Rueda. Buying Votes with Imperfect Local Knowledge and a Secret Ballot. *Journal of Theoretical Politics*, 27(3):428–456, jul 2015. ISSN 0951-6298. doi: 10.1177/0951629814533841. URL http://jtp.sagepub.com/cgi/doi/10.1177/0951629814533841.

Miguel Rueda. Small Aggregates, Big Manipulation: Vote Buying Enforcement and Collective Monitoring. *American Journal of Political Science*, 00(0):1–15, jun 2016. ISSN 00925853. doi: 10.1111/ajps.12260. URL http://doi.wiley.com/10.1111/ajps.12260.

Joby Schaffer and Andy Baker. Clientelism as Persuasion-Buying: Evidence From Latin America. *Comparative Political Studies*, 2015. doi: 10.1177/0010414015574881.

James Scott. Patron-Client Politics and Political Change in Southeast Asia. *The American Political Science Review*, 66(1):91–113, 1972.

Susan Stokes. Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina. *American Political Science Review*, 99(3):315–325, sep 2005. ISSN 0003-0554. doi: 10.1017/S0003055405051683. URL http://www.journals.cambridge.org/abstract{_}S0003055405051683.

Susan Stokes, Thad Dunning, Marcelo Nazareno, and Valeria Brusco. *Brokers, Voters, and Clientelism: The Puzzle of Distributive Politics*. Cambridge University Press, 2013.

Mariela Szwarcberg. The Microfundations of Political Clientelism. Lessons from the Argentine Case. *Latin American Research Review*, 48(2):32–54, 2013.

the Latin American Public Opinion Project (LAPOP). The americasbarometer, 2010.

Pedro Vicente. Is Vote Buying Effective? Evidence from a Field Experiment in West Africa. *The Economic Journal*, 124(574):F356–F387, feb 2014. ISSN 00130133. doi: 10.1111/ecoj.12086. URL http://doi.wiley.com/10.1111/ecoj.12086.

Rebecca Weitz-Shapiro. What Wins Votes: Why Some Politicians Opt Out of Clientelism. *American Journal of Political Science*, 56(3):568–583, 2012.

Rebecca Weitz-Shapiro. *Curbing Clientelism in Argentina: Politics, Poverty, and Social Policy*. Cambridge University Press, 2014.

Philip Westgate and Woodrow Burchett. A Comparison of Correlation Structure Selection Penalties for Generalized Estimating Equations. *The American Statistician*, 1305(June):0–00, jun 2016. ISSN 0003-1305. doi: 10.1080/00031305.2016.1200490. URL http://www.tandfonline.com/doi/full/10.1080/00031305.2016.1200490.

Rodrigo Zarazaga. Brokers Beyond Clientelism: A New Perspective Through the Argentine Case. *Latin American Politics and Society*, pages n/a–n/a, sep 2014. ISSN 1531426X. doi: 10.1111/j.1548-2456.2014.00238.x. URL http://doi.wiley.com/10.1111/j.1548-2456.2014.00238.x.

Rodrigo Zarazaga. Party Machines and Voter-Customized Rewards Strategies. *Journal of Theoretical Politics*, oct 2015. ISSN 0951-6298. doi: 10.1177/0951629815603496. URL http://jtp.sagepub.com/cgi/doi/10.1177/0951629815603496.

Bennet Zelner. Research Notes and Commentaries: Using Simulation to Interpret Results from Logit, Probit, and other Nonlinear Models. *Strategic Management Journal*, 30(12):1335–1348, 2009. ISSN 01432095. doi: 10.1002/smj.783.