Declared Support and Clientelism*

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Abstract

Recent studies of clientelism predominantly focus on how elites use rewards to influence vote choices and turnout. This article shifts attention towards citizens and their choices beyond the ballot box. Under what conditions does clientelism influence citizens' decisions to express political preferences publicly? When voters can obtain post-election benefits by declaring support for victorious candidates, their choices to display political paraphernalia on their homes or bodies may reflect more than just political preferences. We argue that various factors — such as the size of rewards and punishments, the competitiveness of the election, and whether multiple candidates employ clientelism — affect citizens' propensity to declare support in response to clientelist inducements. Building on insights from fieldwork, formal analyses reveal how and why such factors can distort patterns of political expression observed during electoral campaigns. We conduct an experiment in Brazil, which predominantly corroborates predictions about declared support and clientelism.

1 Introduction

In many parts of the world, citizens receive material benefits in contingent exchange for providing political support. A recent cross-country survey of 1,400 experts found that such patterns of "clientelism" exist to some degree in over 90 percent of nations, with clientelist efforts reaching "moderate" or "major" levels in nearly three-fourths of countries (Kitschelt, 2013). This phenomenon is widely recognized to have a broad range of consequences for democracy and development. Clientelism often exacerbates political inequalities by allowing those with resources to buy votes from impoverished citizens, and undermines representation when vote choices no longer reflect recipients' political preferences (Stokes et al., 2013). Moreover, clientelism is frequently linked to numerous maladies that can stifle development, such as the under-provision of public goods, increased rent seeking and expanded public deficits (Hicken, 2011).

The literature on clientelism tends to focus on the choices of elites more than those of citizens. Traditional studies explored patron-client relationships involving highly asymmetric power. Voters in these relationships often had limited autonomy to make choices of their own volition, due to various factors such as restrictive land-tenure arrangements and the lack of ballot secrecy (Scott, 1972; Baland and Robinson, 2008, 2012). While some contemporary studies recognize clients' heightened autonomy (e.g., Hilgers, 2012; Auerbach and Thachil, 2018), the formal and quantitative literature continues to pay far greater attention to the choices of political elites. Particularly emblematic of this tendency, many analysts concentrate on the supply-side logic by which politicians and their representatives target citizens when distributing campaign handouts. For instance, Stokes (2005) contends that elites reward weakly opposed voters for vote-switching, whereas Nichter (2008) argues they reward nonvoting supporters for showing up at the polls. This elite-targeting focus is extended in various studies motivated by Stokes et al. (2013), who argue that party leaders' efforts to target weakly opposed voters are hindered by brokers who channel rewards to supporters.

Other influential examples that predominantly focus on political elites include studies on the targeting of reciprocal voters (Finan and Schechter, 2012), on the optimal combination of multiple clientelist strategies (Morgan and Várdy, 2012), and on the broader targeting of distributive benefits (Dixit and Londregan, 1996).

While such research has greatly enhanced our understanding of clientelism, it sheds relatively less light on the role of citizen choices. Voter choice deserves greater attention, especially because some qualitative work underscores citizens' substantial autonomy in various contexts. Indeed, scholars have long argued that politicians' control of contingent exchanges varies and may well be in decline (Scott, 1972). The present study contributes to the literature by elaborating a theoretical model focused on citizens' choices in contexts with clientelism, and testing predictions with an online experiment in Brazil. In particular, we investigate the following question: Under what conditions does clientelism influence citizens' decisions to express political preferences publicly? Rather than taking voter responsiveness to benefits for granted, our analyses emphasize how and why citizens will often make different choices in clientelist environments, depending on numerous contextual characteristics.

In addition to this emphasis on citizen choices, another key contribution is investigating how clientelism can induce political expression *beyond* the ballot box. Unlike some qualitative studies, formal and quantitative work on clientelism tends to focus more narrowly on voting. By contrast, we examine why citizens publicly express support for political candidates, through actions such as displaying campaign paraphernalia on their homes, on their bodies, and at rallies. Many studies consider such activities to be important forms of democratic participation, which enable citizens to express their political preferences and potentially influence the selection of leaders (Verba and Nie, 1972; Huckfeldt and Sprague, 1995). But in much of the world, clientelism presents another understudied motivation. When voters can obtain post-election benefits by declaring support for victorious candidates, their decisions to participate publicly often reflect more than just political preferences. We argue that various factors affect citizens' propensity to declare support in response to clientelist inducements.

For instance, citizens may deem it especially advantageous to declare support for a clientelist candidate who distributes large rewards, is likely to win the election, and can easily observe declarations. But citizens may also balk at declaring for that candidate if doing so is costly: it might be challenging to obtain campaign materials or travel to rallies, citizens might prefer another candidate ideologically, or they might live in neighborhoods where declaring for that candidate involves social costs. And in some contexts, citizens might even face punishments if they declare support for a candidate who loses the election. Considering such factors, we explore how clientelism affects citizens' choices about declared support.

Evidence suggests that declared support warrants careful investigation. A recent book on Brazil points to a substantial link between declarations and clientelism (Nichter, 2018), but unlike the present manuscript does not test predictions about declared support experimentally. During 130 interviews that we conducted in the Brazilian states of Bahia and Pernambuco, many citizens and politicians explained that declaring support for a victorious candidate improves access to post-election benefits.[1] In line with such perceptions, quantitative analyses of two surveys we fielded in Brazil suggest that citizens who had declared for an elected mayor or councilor were indeed more likely to receive benefits. Beyond Brazil, analyses of observational data from Mexico's 2012 presidential election reveal that declarers were significantly more likely to receive clientelist benefits than non-declarers (Nichter and Palmer-Rubin, 2015). In Argentina, qualitative research suggests that citizens who demonstrate their support at rallies are more likely to receive handouts (Auyero, 2000). In Ghana, fieldwork reveals that many citizens perceive that publicly expressing support will improve their ability to receive future benefits from elected politicians (Michelitch, 2013). And in Lebanon, citizens are more likely to receive benefits if they demonstrate their partisan commitment through various actions such as displaying posters and voting (Cammett, 2014). These studies provide global evidence of declared support, but do not elaborate and test the logic underlying this phenomenon.

[1]The Supplementary Information describes this fieldwork.

To clarify this logic, the present study is the first to develop and test a theoretical model of declared support. This model provides numerous predictions about voters' declaration choices in contexts with clientelism, which we test experimentally. For instance, formalizing the intuition discussed above, it suggests that citizens are most likely to declare support when a clientelist politician: (a) offers larger rewards, (b) is heavily favored to win the election, (c) can be publicly supported without incurring additional material or social costs, (d) can monitor declarations effectively, and (e) is the only candidate offering rewards. Just as important, the model also shows why various factors can depress declarations for non-clientelist candidates, and reveals their aggregate effect on the overall level of declarations. Furthermore, theoretical analyses suggest that rewards induce more declarations when offered by leading rather than trailing candidates, and that rewards are more effective than punishments. Overall, formal analyses yield a rich set of hypotheses about citizen choices and declared support in contexts with clientelism.

An online experiment is employed to test these predictions about how inducements affect citizens' decisions to express political preferences publicly. The present study thereby offers another important contribution by focusing on voter choices in clientelism using experimental methods. A key advantage of this approach is that it isolates causal effects by changing exogenously only one aspect of the decision environment at a time; by contrast, testing predictions observationally would require disentangling various reasons why citizens declare and dealing with endogenous changes in the political and social environment. Our experiment involved 1,259 online participants from 1,061 municipalities across Brazil. To investigate mechanisms, this experiment exposed subjects to 10 distinct treatments, each testing pre-registered theoretical predictions about multiple declaration actions.[2] Various findings are consistent with theory; for example, citizens are more likely to declare support for a clientelist politician who offers larger material rewards or is heavily favored to win the

[2]Predictions in Section 3 were pre-registered with Evidence in Governance and Politics (EGAP) on 9/20/2016, before the experiment commenced. The experiment received IRB approval on 3/2/2016.

election, and they are less likely to declare support when clientelism is competitive or if it involves both rewards and punishments. Multivariate analyses show that findings hold even when focusing exclusively on within-subject variation. The experiment also reveals empirical patterns not predicted by theory: citizens are insensitive to whether their declarations can be easily monitored or can influence the election, and they increase declarations for clientelist candidates who punish their declared opposers.

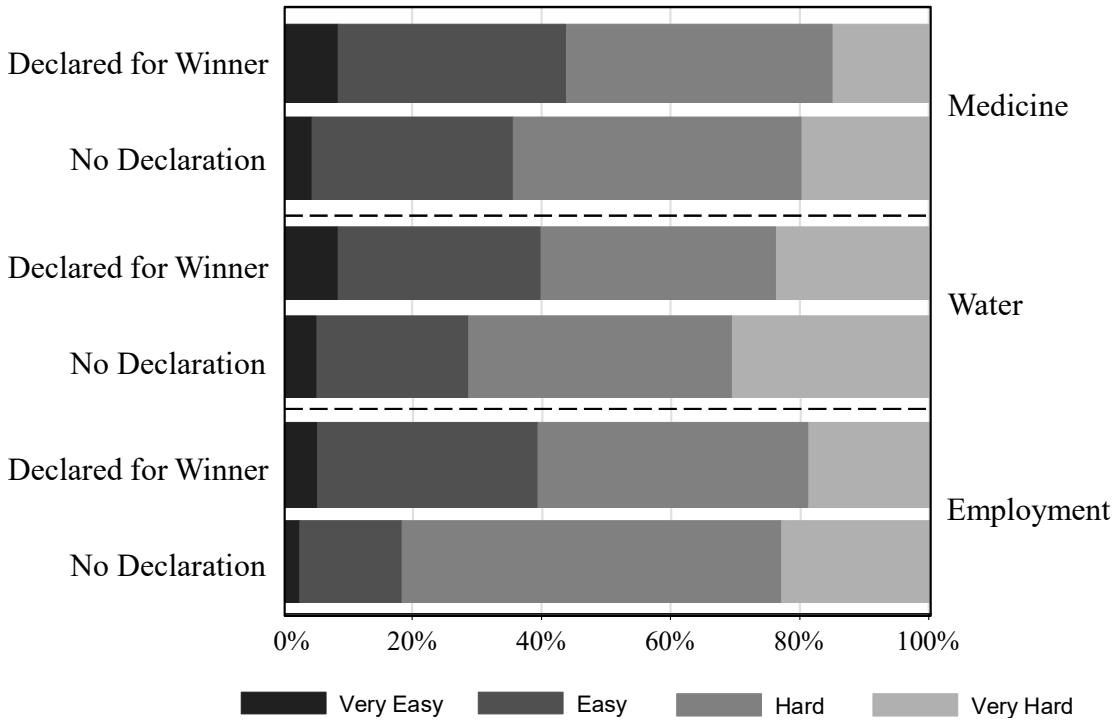
Overall, the present article emphasizes and elucidates the understudied role of citizen choices in clientelism. Building on insights from our fieldwork, a model unpacks the voter calculus of publicly expressing political support when contingent benefits are distributed. Moreover, our experiment tests predictions and yields important insights for future theoretical and experimental research about clientelism's effects on political expression.

2 Motivating Evidence

To motivate our formal and experimental analyses of declared support, first consider suggestive evidence from Brazil. In an online survey, we randomly exposed 1,995 participants in over a thousand municipalities to one of several vignettes, depicting citizens who had — or had not — declared support during a fictitious mayoral campaign.[3] As shown in Figure 1, subjects who viewed a vignette depicting a declared supporter of the election winner indicated it would be easier for that citizen to obtain post-election benefits, than did subjects who viewed a vignette depicting an undeclared citizen. First, 43.1 percent of participants exposed to the declared-supporter vignette perceived it would be "easy" or "very easy" for the citizen to obtain a medical treatment, compared to only 35.5 percent of those exposed to the undeclared-citizen vignette. Second, 39.7 percent of subjects randomly assigned to the declared-supporter vignette believed it would be "easy" or "very easy" for the citizen to

[3]Section 4 discusses survey recruitment and representativeness. This survey experiment has a larger sample size, as it includes additional participants recruited similarly.

Figure 1: Declared Support and Perceived Difficulty of Obtaining Benefits



Source: Authors' survey with 1,995 respondents recruited across Brazil on Facebook (see Section 4).

receive a water cistern, compared to just 28.7 percent of those assigned to the undeclared-citizen vignette. And third, 38.6 percent of respondents viewing the declared-supporter vignette believed it would be "easy" or "very easy" for the citizen to obtain employment, compared to only 18.2 percent of those viewing the undeclared-citizen vignette. These differences, which are all statistically significant (at the .01 level), suggest that Brazilian survey participants perceived a link between declared support and clientelism.[4] Given this motivating evidence, we next explore how contingent benefits affect citizen choices to express political preferences publicly.

[4]To explore punishments, others viewed a vignette depicting a declared supporter of the election loser. He was deemed to have more difficulty than the declared-supporter vignette for all benefits, but more difficulty than the undeclared-citizen vignette only for cisterns.

3 Model

3.1 Setup

To investigate citizens' choices about declared support, we develop a model with numerous predictions that are tested experimentally. Citizens are modeled as strategic individuals who decide whether — and for whom — to declare support not only on the basis of political preferences, but also on the basis of inducements and contextual characteristics. Our analysis is decision-theoretic, in that a citizen's behavior depends on exogenous parameters and not actions taken by others. This approach is tailored to the experimental design discussed in Section 4, in which online subjects across Brazil participated asynchronously. The Supplementary Information shows that most key predictions are similar when employing a game-theoretic model in which a citizen's action influences other citizens' beliefs about candidates' probability of electoral victory.

In the analysis, each citizen weighs whether to declare support for one of two candidates (A or B) or to remain undeclared. In the base model, a citizen's payoff depends on five factors: (1) her political preferences with respect to the election winner, (2) any post-election reward she receives for declaring for clientelist candidate A, (3) the cost of declaring, (4) expressive utility from declaring, and (5) any impact of her declaration on the election outcome. We first focus on the case of monopolistic clientelism involving rewards and then examine extensions involving competitive clientelism and punishments.

In the base model, the timing of the game is as follows:

1. Citizen i decides whether to declare for clientelist candidate A at cost $c_A \geq 0$, to declare for candidate B at cost $c_B \geq 0$, or to remain undeclared.
2. Candidate A observes citizens' declarations with probability $\gamma \in (0, 1]$.
3. The election winner is decided (potentially influenced by declarations).
4. If clientelist candidate A wins, she distributes rewards $r_A \geq 0$ to all citizens observed to declare support for her. If B wins, no rewards are distributed.

We make several assumptions based on our fieldwork in Brazil. First, citizens have heterogeneous ideological preferences, ranging from a strong preference for A to a strong preference for B: $x_i \in (-\infty, \infty)$ is citizen i's ideological gain (if positive) or loss (if negative) from A's election victory.[5] Second, clientelist candidate A distributes rewards (r_A) after she is elected, to citizens observed (with probability γ) to declare support for her during the campaign. This assumption builds on evidence from our interviews[6] — as well as observational analyses of survey data by Nichter (2018) — suggesting that many Brazilians obtain preferential access to various post-election benefits by declaring support for victorious candidates during municipal campaigns. Third, we assume declaring involves candidate-specific costs (c_A and c_B). These costs include material costs such as obtaining and placing a banner on one's house, or traveling to demonstrate support at a rally. For example, one interviewee complained about repainting his wall and removing bumper stickers, and another indicated that rallies are too time-intensive. They also include any social costs, such as being ostracized if declaring for A in a neighborhood mostly populated by B's supporters; e.g., a maid explained she did not declare because the other candidate's supporters would "complain a lot ... they fight, they get angry."[7] Fourth, citizens may receive expressive utility from the act itself of declaring in accordance with their preferences, regardless of who wins the election. This assumption builds on some Brazilian interviewees' discussion of enjoyment received from displaying political paraphernalia of their preferred candidates. We employ a dampening factor, $\delta \in [0, 1]$, to capture the degree to which declaring provides such expressive utility. Just as x_i is citizen i's ideological gain or loss from A's election victory, δx_i is her ideological gain or loss from declaring for A. And inversely, $-\delta x_i$ is her ideological gain or loss from declaring for B. Fifth, the model allows for the possibility that a citizen's

[5]This setup normalizes the ideological gain from B winning to 0; x_i is the amount by which citizen i is better off or worse off when A wins relative to when B wins.

[6]The Supplementary Information describes this fieldwork.

[7]Author's interviews in Bahian municipalities with 10,000, 80,000 and 100,000 citizens, respectively (10/22/2008, 11/20/2008 and 12/22/2008).

declaration affects the election outcome. In our analysis, candidate A's *ex ante* probability of winning the election is given by $q \in [0, 1]$. We assume that a declaration increases that candidate's probability of victory by $\alpha \in [0, min\{q, 1-q\}]$. If a citizen declares for A (B), then A's (B's) probability of victory is increased by α, which may equal zero — and given there are two candidates, B's (A's) probability of victory declines by α.[8]

3.2 Expected Utility

Table 1 summarizes citizen i's utility contingent on her declaration action and the election outcome. We now investigate the expected utility from each declaration action. The expected utility of citizen i when declaring support for candidate A is:

$$EU_i(A) = (q + \alpha)(\gamma r_A + x_i) + \delta x_i - c_A \tag{1}$$

By declaring, the citizen receives three components of utility: clientelist, instrumental, and expressive effects. The clientelist effect is the citizen's expected reward from declaring for A, which depends on three factors: the size of each reward A distributes to declared supporters (r_A), the probability A observes declarations (γ), and A's probability of victory given the citizen's declaration ($q + \alpha$). The instrumental effect is the citizen's expected ideological gain or loss from the election outcome, which depends on her preferences with regards to A (x_i) as well as A's probability of victory given her declaration ($q + \alpha$). The expressive effect is the utility gained (lost) from the act of declaring support in accordance (discordance) with one's ideological beliefs (x_i, discounted by δ). In Equation (1), the first term includes both clientelist and instrumental effects. More specifically, it represents the incremental utility accrued from A's victory — for both clientelist (γr_A) and instrumental (x_i) reasons

[8] If *all* partisans derive no expressive utility from declaring (i.e., $\delta = 0$) — an unlikely scenario, based on our interviews — all predictions hold so long as declarations have some impact on electoral outcomes ($\alpha > 0$). Even less likely, if $\delta = \alpha = 0$: (a) all predictions hold for the stochastic model, and (b) the deterministic model's predictions no longer depend on political preferences and the same declaration action is optimal for all citizens.

	i Declared for A	i Declared for B	i Undeclared
Candidate A Wins	$x_i + \delta x_i + \gamma r_A - c_A$	$x_i - \delta x_i - c_B$	x_i
Candidate B Wins	$\delta x_i - c_A$	$-\delta x_i - c_B$	0

Table 1: Citizen i's Utility by Declaration Action and Election Outcome

— weighted by the probability A wins given the citizen's declaration $(q + \alpha)$. The second term (δx_i) captures the expressive effect, and the third term (c_A) captures declaration costs.

Next, the expected utility of citizen i when declaring for candidate B is:

$$EU_i(B) = (q - \alpha)x_i - \delta x_i - c_B \tag{2}$$

Although similar, Equations (1) and (2) exhibit several differences. First, there are instrumental and expressive effects if the citizen declares for B, but no clientelist effect because the base model assumes only A provides rewards. An extension below examines competitive clientelism, in which both candidates provide rewards. Second, α (which may equal 0) is now subtracted, because the citizen reduces A's probability of victory when declaring for B. Third, the sign of the expressive utility term (δx_i) is now negative, because the act of declaring for B provides a utility gain (loss) to supporters of B (A).

Finally, the expected utility of citizen i from remaining undeclared is:

$$EU_i(\emptyset) = qx_i \tag{3}$$

There are no clientelist or expressive effects if the citizen remains undeclared. However, there is an instrumental effect of remaining undeclared, which depends on her preferences about A (x_i) and the *ex ante* probability A wins (q).

3.3 Deterministic Choice

Given these expected utilities, we first predict citizens' declaration decisions deterministically. To make such predictions, we derive which declaration action provides the highest expected utility to citizens according to their political preferences and other parameter values.

We later examine implications if citizens make mistakes during decision making, employing a stochastic choice model.

To simplify exposition, we assume declaration costs are sufficiently large relative to clientelist benefits such that there exist citizens who remain undeclared. This assumption is realistic, given that during real-world campaigns, not every citizen publicly expresses support for a candidate.[9] Citizens with sufficiently intense ideological preferences will always declare support for their preferred candidate. For such citizens, the expressive utility from declaring and/or the increased probability of their favored candidate's victory are worth declaration costs and dominate any clientelistic considerations. On the other hand, clientelist considerations and/or declaration costs weigh more heavily on the decisions of citizens with weaker ideological preferences. Figure 2 shows the ideological space along which citizens can be arranged according to their ideological preferences. Moving along the spectrum of ideological preferences, the incentive to declare support for candidate A increases as x_i rises.

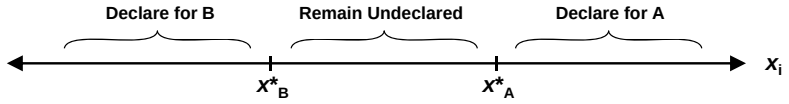


Figure 2: Optimal Behavior as a Function of Ideological Preferences

Citizens on the left, with smaller values of x_i, are supporters of B, whereas citizens on the right, with higher values of x_i, are supporters of A. The right cutpoint ($x_A^\star$) represents a citizen whose ideological preferences make her indifferent between declaring for A and remaining undeclared. The left cutpoint ($x_B^\star$) represents a citizen whose ideological preferences make her indifferent between declaring for B and remaining undeclared. The assumption that non-declarers exist enables us to focus on the case in which $x_B^\star < x_A^\star$. All citizens to the left of $x_B^\star$ (i.e., who prefer B more strongly than $x_B^\star$) declare support for B. By contrast, all citizens to the right of $x_A^\star$ (i.e., who prefer A more strongly than $x_A^\star$) declare support for A. Citizens between $x_A^\star$ and $x_B^\star$ remain undeclared. Depending on contextual characteristics —

[9]A sufficient assumption to ensure non-declarers' existence is $c_A + c_B > \gamma(q + \alpha)r_A$.

that is, on values of model parameters — both cutpoints may represent supporters of the same party (i.e., $x_A^\star > x_B^\star > 0$). When this is the case, clientelist considerations dominate instrumental and expressive considerations for some citizens, who declare for the candidate they dislike.

To derive these two cutpoints, we observe that citizen i prefers declaring for B over remaining undeclared when $EU_i(B) > EU_i(\emptyset)$, and prefers declaring for A over remaining undeclared when $EU_i(A) > EU_i(\emptyset)$. Substituting equations and solving yields:

$$x_B^\star = -\frac{c_B}{\alpha + \delta} \qquad\qquad x_A^\star = \frac{c_A - (q+\alpha)\gamma r_A}{\alpha + \delta} \tag{4}$$

Citizens who remain undeclared are those whose ideology falls in between the two cutpoints. Thus, the fraction of undeclared citizens is proportional to the distance between the two cutpoints $(x_A^\star - x_B^\star)$, where:

$$x_A^\star - x_B^\star = \frac{c_A + c_B - \gamma(q+\alpha)r_A}{\alpha + \delta} \tag{5}$$

Our objective is to derive comparative static results for the effect of increasing each variable on the fraction of citizens who declare for A, declare for B, or remain undeclared. Formal analysis in the Supplementary Information yields the following predictions:

H1 *Reward Size*: As clientelist candidate A provides larger rewards, declarations for A increase $\left(\frac{\partial x_A^\star}{\partial r_A} < 0\right)$, declarations for B are unaffected $\left(\frac{\partial x_B^\star}{\partial r_A} = 0\right)$, and non-declarations decrease $\left(\frac{\partial (x_A^\star - x_B^\star)}{\partial r_A} < 0\right)$.

H2 *Machine Support*: As A's probability of winning increases, declarations for A increase $\left(\frac{\partial x_A^\star}{\partial q} < 0\right)$, declarations for B are unaffected $\left(\frac{\partial x_B^\star}{\partial q} = 0\right)$, and non-declarations decrease $\left(\frac{\partial (x_A^\star - x_B^\star)}{\partial q} < 0\right)$.

H3 *Cost*: As the (material or social) cost of declaring for A increases, declarations for A decrease $\left(\frac{\partial x_A^\star}{\partial c_A} > 0\right)$, declarations for B are unaffected $\left(\frac{\partial x_B^\star}{\partial c_A} = 0\right)$, and non-declarations increase $\left(\frac{\partial (x_A^\star - x_B^\star)}{\partial q} > 0\right)$.

H4 *Monitoring*: As A's ability to monitor how citizens declare increases, declarations for A increase $\left(\frac{\partial x_A^\star}{\partial \gamma} < 0\right)$, declarations for B are unaffected $\left(\frac{\partial x_B^\star}{\partial \gamma} = 0\right)$, and non-declarations decrease $\left(\frac{\partial (x_A^\star - x_B^\star)}{\partial \gamma} < 0\right)$.

H5 *Expressive Utility*: As the utility of declaring in accordance with preferences increases, declarations for B increase $\left(\frac{\partial x_B^\star}{\partial \delta} > 0\right)$, and non-declarations decrease $\left(\frac{\partial (x_A^\star - x_B^\star)}{\partial \delta} < 0\right)$. Declarations for A increase $\left(\frac{\partial x_A^\star}{\partial \delta} < 0\right)$ if $x_A^\star > 0$, decrease $\left(\frac{\partial x_A^\star}{\partial \delta} > 0\right)$ if $x_A^\star < 0$, and are unaffected $\left(\frac{\partial x_A^\star}{\partial \delta} = 0\right)$ if $x_A^\star = 0$.

H6 *Election Influence*: As the election influence of declaring increases, declarations for B increase $\left(\frac{\partial x_B^\star}{\partial \alpha} > 0\right)$, and non-declarations decrease $\left(\frac{\partial (x_A^\star - x_B^\star)}{\partial \alpha} < 0\right)$. Declarations for A increase $\left(\frac{\partial x_A^\star}{\partial \alpha} < 0\right)$ if $x_A^\star > -\gamma r_A$, and decrease $\left(\frac{\partial x_A^\star}{\partial \alpha} > 0\right)$ otherwise.

The conditional predictions derived for A's declarations in Hypotheses 5 and 6 above warrant further discussion. Regarding H5, assume citizen j has ideology $x_A^\star$; recall this threshold indicates indifference between declaring for A and remaining undeclared. If he is a supporter of A (i.e., $x_A^\star > 0$), a marginal increase in δ increases his expressive gain from declaring; and a marginal increase in α strengthens his clientelist and instrumental incentives to declare. Thus, in both cases, j becomes strictly better off declaring for A, meaning that another citizen — who more weakly supports A — lies on the threshold $x_A^\star$. On the other hand, if j is a supporter of B (i.e., $x_A^\star < 0$), a marginal increase in δ increases his expressive loss from declaring. Thus, he becomes strictly worse off declaring for A, meaning that another citizen — who more weakly supports B — lies on the threshold $x_A^\star$. Regarding H6, a marginal increase in α strengthens the clientelist incentive to declare for A, by heightening the probability of a reward. However, it also increases the instrumental incentive to remain undeclared, as declaring is more likely to clinch the victory of his disfavored candidate. If j is a sufficiently strong B supporter, the latter effect dominates, so he is strictly better off remaining undeclared. This means that another citizen — who more weakly supports B — lies on the threshold $x_A^\star$.

3.4 Extension with Competitive Clientelism

Given that competitive clientelism is observed in some contexts (Kitschelt, 2013), a first extension adapts the base model so both candidates can distribute rewards. As before, if

candidate A wins, she distributes rewards $r_A \geq 0$ to all citizens observed to declare support for A. But now, if B wins, he also distributes rewards $r_B \geq 0$ to all citizens observed to declare support for B. In this extension, the expected utilities of citizen i from declaring for A and from remaining undeclared are unchanged from the base model. Thus, $x_A^\star$ remains unchanged. However, the expected utility of citizen i from declaring for B becomes:

$$EU_i(B) = (q - \alpha)x_i + (1 - q + \alpha)\gamma r_B - \delta x_i - c_B \tag{6}$$

Whereas Equation (2) only included instrumental and expressive effects, Equation (6) also includes a clientelist effect (in the new second term). Formal analysis in the Supplementary Information reveals how $x_B^\star$ and $x_A^\star - x_B^\star$ change, yielding the following predictions:

H7 *Competitive Clientelism*: As B provides larger rewards, declarations for A are unaffected $\left(\frac{\partial x_A^\star}{\partial r_B} = 0\right)$, declarations for B increase $\left(\frac{\partial x_B^\star}{\partial r_B} > 0\right)$, and non-declarations decrease $\left(\frac{\partial x_A^\star - x_B^\star}{\partial r_B} < 0\right)$.

H8 *Relative Impact of Rewards Across Candidates*: The more popular candidate has a greater impact on declarations, using rewards of identical magnitude. That is, the marginal effect of A's rewards on increasing A's declarations is greater than that of B's rewards on increasing B's declarations, if and only if A is more popular than B. If candidates enjoy the same support, the relative impact of their rewards is identical $\left(\left|\frac{\partial x_A^\star}{\partial r_A}\right| > \left|\frac{\partial x_B^\star}{\partial r_B}\right| \text{ if and only if } q > 1/2, \text{ and } \left|\frac{\partial x_A^\star}{\partial r_A}\right| = \left|\frac{\partial x_B^\star}{\partial r_B}\right| \text{ if and only if } q = 1/2\right)$.

3.5 Extension with Punishments

When a machine metes out punishments, how does this affect public expressions of political support? Given that politicians in various countries employ negative inducements (Mares and Young, 2016, 2019), the next extension adapts the base model and allows candidate A to punish citizens who declared against her. As in the initial setup, if A wins, she distributes rewards $r_A \geq 0$ to all citizens observed to declare support for her. But now, if A wins, she

also imposes punishments $p_A \geq 0$ on all citizens observed to declare support for B.[10] In this extension, the expected utilities of citizen i from declaring for A and from remaining undeclared are unchanged from the base model. Thus, $x_A^\star$ remains unchanged. However, the expected utility of citizen i from declaring for B becomes:

$$EU_i(B) = (q - \alpha)(x_i - \gamma p_A) - \delta x_i - c_B \tag{7}$$

Equation (7) adds a clientelist effect to Equation (2), but unlike the prior extension involves negative inducements. Formal analysis in the Supplementary Information reveals how $x_B^\star$ and $x_A^\star - x_B^\star$ change, yielding the following predictions:

H9 *Punishments*: As A imposes greater punishments, declarations for A are unaffected $\left(\frac{\partial x_A^\star}{\partial p_A} = 0\right)$, declarations for B decrease $\left(\frac{\partial x_B^\star}{\partial p_A} < 0\right)$, and non-declarations increase $\left(\frac{\partial (x_A^\star - x_B^\star)}{\partial p_A} > 0\right)$.

H10 *Relative Impact of Rewards vs. Punishments*: Rewards affect declarations relatively more than punishments of comparable magnitude. That is, the marginal effect of A's rewards on increasing A's declarations is greater than the marginal effect of A's punishments on decreasing B's declarations $\left(\left|\frac{\partial x_A^\star}{\partial r_A}\right| \geq \left|\frac{\partial x_B^\star}{\partial p_A}\right|\right)$.

3.6 Stochastic Choice

One might be concerned that the deterministic model above is unrealistic, because citizens do not always make optimal choices. For instance, someone nearly indifferent between two actions may make minute errors in judgment about rewards, declaration costs, electoral odds, or other factors, leading to a suboptimal decision. Given such concerns, the Supplementary Information derives predictions employing a probabilistic choice model, following many prominent studies testing theoretical predictions with laboratory experiments (e.g., Harless and Camerer, 1994; Levine and Palfrey, 2007; Feddersen, Gailmard and Sandroni, 2009). In particular, we allow a small degree of bounded rationality and assume that instead of optimizing, citizens make decisions according to a standard Logit stochastic choice rule: they

[10] One interpretation of punishments is terminating benefits that a declarer would have received, had she remained undeclared.

choose with positive probability all available actions, but are more likely to choose "better" alternatives. That is, in their randomization, they place more (less) weight on actions providing higher (lower) payoffs.

As shown below in Table 3, the stochastic model's predictions mostly accord with those of the deterministic model. Two sources of discrepancies arise. First, for Hypotheses 1, 2, 3, 4, 7, and 9, whenever the deterministic model predicts a change, the stochastic model's predictions are unambiguously in the same direction. However, in some cases, the deterministic model predicts no effect of a parameter change, whereas the stochastic choice model does. The reason is that citizens in the deterministic model choose with certainty the action that delivers the *highest* expected utility, while citizens in the stochastic model are more likely to choose actions that deliver a *higher* relative expected utility. Consider the effect of a slight perturbation of any model parameter that changes only the expected utility from declaring for A (B). With the deterministic model, declarations for A (B) are affected, while declarations for B (A) are not.[11] By contrast, perturbing any such parameter affects all of the stochastic model's predictions, because changing any action's expected utility influences the relative expected utility of all actions.

A second source of discrepancies is that the stochastic model predicts heterogeneous treatment effects for Hypotheses 5, 6, 8, and 10. Depending on citizens' political preferences, shocks to these factors have differential effects on the propensity of citizens to take each declaration action. For these hypotheses, the stochastic model makes ambiguous predictions about average treatment effects, which depend crucially on the value of other parameters and the sensitivity of choices to relative payoffs.[12] Given the stochastic model's ambiguity,

[11] Given that non-declarers exist, a marginal shock to model parameters in the deterministic model can lead a declarer to become a non-declarer – or can lead a non-declarer to become a declarer. However, a slight perturbation cannot lead a declarer for A (B) to become a declarer for B (A).

[12] The Supplementary Information derives these predictions.

the experimental section exclusively tests the deterministic model with respect to these four hypotheses.

4 Experimental Design

The theoretical analyses developed above provide intriguing hypotheses, but to what extent do they offer meaningful predictions about human behavior? If citizens are exposed to the model's conditions, their declaration choices might be entirely unaffected by rewards, political competition and other factors — or they may change in unpredicted ways. Such findings would cast serious doubt on our modeling assumptions. By contrast, if citizens tend to respond as predicted, it would heighten confidence in its theoretical insights about how and why clientelism influences political expression beyond the ballot box. To investigate whether the model provides meaningful predictions about human behavior, we developed an experiment to test our pre-registered hypotheses.[13]

Given that external validity is always an important concern with experiments, we focused testing efforts on Brazil, where our fieldwork revealed patterns of declared support. We sought a large subject pool from across the nation, and thus recruited 1,259 participants from 1,061 municipalities. To recruit participants, we broadcast advertisements on Facebook in October-December 2016, following an established strategy employed in Brazil (Samuels and Zucco, 2014; Boas, 2014). Facebook's impressive reach in the nation makes it a particularly useful tool for recruiting subjects. Brazil is Facebook's third-largest market globally, with 123 million registered users during our research period, compared to an overall population of 207 million.[14] Of course, Facebook is by no means perfectly representative of Brazil's population, and certain types of users may be more inclined to click on advertisements. As

[13] As mentioned above, predictions in Section 3 were pre-registered with Evidence in Governance and Politics (EGAP) on 9/20/2016, before the experiment commenced.

[14] *Financial Times*, 5/15/2017; www.statista.com/statistics/268136/top-15-countries-based-on-number-of-facebook-users; IBGE, 2017.

such, we advertised more extensively to specified demographic subgroups, particularly women and the elderly. As shown in the Supplementary Information, our sample mirrors Brazil's overall population fairly closely with respect to gender, age, region and urban/rural mix. Given the paucity of research on clientelism outside of Brazil's largest cities, we displayed advertisements in both urban and rural areas of municipalities with populations up to 250,000 citizens. This inclusion criterion captures 98.3 percent of all municipalities, with 59.7 percent of Brazil's population. Our sample proved to be quite familiar with clientelism: 87.3 percent of participants thought clientelist benefits were distributed "frequently" or "very frequently" by candidates in their municipalities, and 14.4 percent reported receiving such handouts in 2016.

As incentives in the experiment, subjects earned and accumulated lottery tickets, which increased their probability of winning one of four awarded iPhones. This incentive mechanism followed prior studies and facilitated our online experiment, given that many Brazilians do not use electronic payments.[15] Facebook users clicking on our advertisement were redirected to a consent page and then commenced the experiment. Following Berinsky, Margolis and Sances (2014), the survey included two screener questions, enabling us to control for participant attentiveness in multivariate analyses.

The experiment elicited participants' willingness to declare support for fictitious candidates, employing incentives to manipulate clientelist inducements and preferences about candidates. Subjects could expend a small number of lottery tickets to declare support for one of two candidates (A or B) by displaying a corresponding flag on her fictitious home, potentially affecting the election outcome. We induced political preferences using a standard methodology in experimental social sciences: a reward mechanism in which election outcomes

[15]For a review of past literature on using similar lotteries as experimental rewards, as well as a large-scale experiment demonstrating their effectiveness, see Conn, Mo and Sellers (2019). As elaborated by Morton and Williams (2010), if participants are expected utility maximizers, this Binary Lottery Payoff Mechanism eliminates subjects' individual heterogeneity in risk preferences and renders them risk neutral (see also Samuelson, 2005).

generate different monetary values (Induced Value Theory, Smith 1976). In particular, we induced a stronger ideological affiliation with a candidate by increasing the iPhone lottery tickets a citizen received from that candidate's victory (regardless of whether she declared support). Subjects were assigned randomly to one of seven partisan types — each type induced to have distinct preferences, ranging from a strong preference for A to a strong preference for B.[16]

We introduced clientelist rewards by increasing the lottery tickets received if a citizen declared for clientelist candidate A and A won the election; competitive clientelism is also explored below. As shown in the Supplementary Information, before subjects chose whether and for whom to declare, they viewed a simple vignette communicating information associated with each choice. Once a subject submitted her choice, the election winner was determined by the computer using the odds resulting from the citizen's declaration decision. The identity of the election winner and the resulting clientelistic rewards (if any) determined the subject's earnings for each election.

To test model predictions, the experiment employed ten distinct treatments, each involving a fictitious election with different contextual characteristics. Using a within-subject design, each participant was exposed to all ten treatments.[17] This design has important advantages over a between-subject design. First, it enables us to control for unobserved individual characteristics that may affect citizens' choices, such as risk aversion and cognitive abilities, through the use of fixed effects in regression analyses. And second, it increases the statistical power of our analyses because each participant contributes an observation for each of the ten treatments. However, observations are not independent in a within-subject design, and participants could potentially behave differently in later treatments. We address this

[16]The sample includes 186 subjects assigned to be strong A supporters, 193 moderate A supporters, 193 weak A supporters, 175 indifferent citizens, 171 weak B supporters, 162 moderate B supporters, and 179 strong B supporters (with $x_i = 30, 15, 5, 0, -5, -15$, and -30, respectively).

[17]All findings hold if including subjects who terminated the survey early (i.e., those who viewed only some treatments).

concern by randomizing the order in which subjects observe treatments, and by controlling for within-subject error correlation in regression analyses.

In the *Baseline Clientelism* treatment, subjects were presented with a close election between a clientelist candidate who delivers rewards to declared supporters once elected, and a non-clientelist candidate who delivers no rewards. We use behavior in this baseline as a benchmark to evaluate the effect of treatment variables. A fundamental attribute of the experimental setup is that all other treatments (italicized below) modify only one factor at a time, thereby leaving all other elements of the decision environment constant. Such comparisons enable us to draw inferences about the causal link between contextual factors and citizen behavior.

In *No Clientelism*, we remove clientelist rewards for declaration, but maintain all other elements identical to *Baseline Clientelism*. Comparing these two treatments identifies the causal impact of clientelism on the prevalence of declared support, testing Hypothesis 1. Next, *Lopsided Election* tests Hypothesis 2 by increasing the clientelist candidate's probability of victory from 50 to 80 percent, before declarations of support. To examine Hypothesis 3, *Cost* investigates the scenario in which declaring for the clientelist candidate involves greater costs than declaring for the opposition. Testing Hypothesis 4, *Low Monitoring* adapts *Baseline Clientelism* to consider the case in which the clientelist candidate has a lower ability to observe declarations. In *Expressive Utility*, we examine Hypothesis 5 by introducing a benefit from declaring in accordance with one's preferences and a cost from declaring against one's preferences (regardless of the election outcome). In *No Election Influence*, we study the case where declaring for a candidate has no effect on that candidate's probability of winning the election, testing Hypothesis 6. With *Competitive Clientelism*, we examine Hypothesis 7 by considering the scenario in which both candidates distribute rewards to their own declared supporters. To test Hypothesis 8, we compare the treatment effect of adding rewards from B (i.e., the difference in behavior between *Baseline Clientelism* and *Competitive Clientelism*) and the treatment effect of adding rewards from A (i.e., the difference in

Table 2: Parameters for Experimental Design

Treatment	r_A	q	c_A	γ	r_B	p_A	δ	α	c_B
Baseline Clientelism	5	.5	2	1	0	0	0	.1	2
No Clientelism	0	.5	2	1	0	0	0	.1	2
Lopsided Election	5	.8	2	1	0	0	0	.1	2
Cost	5	.5	4	1	0	0	0	.1	2
Low Monitoring	5	.5	2	.2	0	0	0	.1	2
Expressive Utility	5	.5	2	1	0	0	.5	.1	2
No Election Influence	5	.5	2	1	0	0	0	0	2
Competitive Clientelism	5	.5	2	1	5	0	0	.1	2
Punishment Only	0	.5	2	1	0	5	0	.1	2
Clientelism and Punishment	5	.5	2	1	0	5	0	.1	2

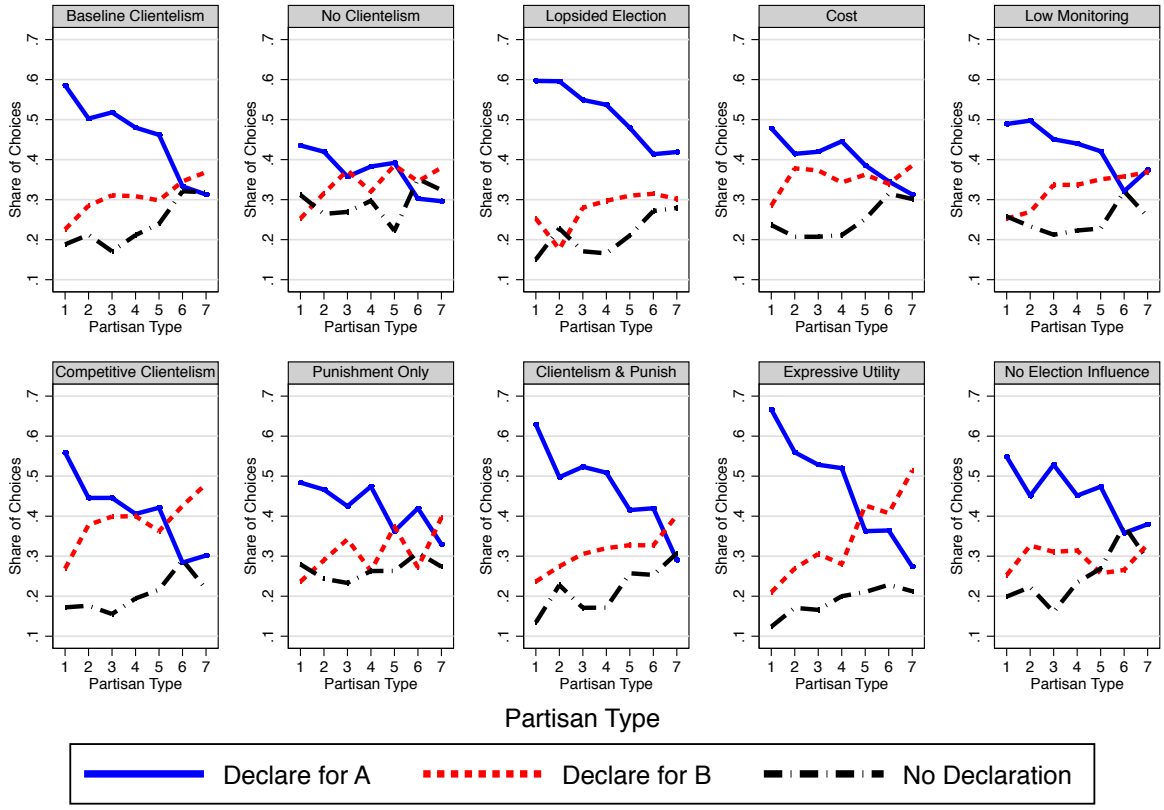
Note: Red text indicates parameters differing from *Baseline Clientelism*.

behavior between *No Clientelism* and *Baseline Clientelism*). Next, we employ *Punishment & Reward* and *Punishment Only* to investigate effects when the clientelist candidate, if elected, punishes citizens who declared for the opposition — testing Hypothesis 9. *Punishment & Reward* leaves in place the baseline's rewards, while *Punishment Only* eliminates them. To test Hypothesis 10, we compare the treatment effect of adding punishments from A (i.e., the difference in behavior between *Punishment Only* and *No Clientelism*) and the treatment effect of adding rewards from A (i.e., the difference in behavior between *No Clientelism* and *Baseline Clientelism*). To summarize the experimental design, Table 2 shows the parameters used in these ten treatments.

5 Experimental Results

Each of 1,259 participants who completed the experiment made ten declaration decisions. Figure 3 presents a descriptive overview of declaration decisions, by partisan type, for the ten experimental treatments. In line with the structure of incentives, participants induced to prefer candidate A were most likely to declare for A (i.e., the solid lines slope downward). In addition, participants induced to prefer candidate B were most likely to declare for B

Figure 3: Declaration Choices of Participants, by Treatment



Note: Figures reflect the share of experimental participants (N = 1,259) who declared for A, declared for B, and did not declare. Shares are shown by partisan type labeled on horizontal axes: (1) strong A supporter, (2) moderate A supporter, (3) weak A supporter, (4) indifferent citizen, (5) weak B supporter, (6) moderate B supporter, and (7) strong B supporter.

(i.e., the dashed lines slope upward). To test predictions, we first examine how the overall proportion of subjects undertaking each declaration action varies across treatments. These proportions are shown in Table 3, with declarations for clientelist candidate A in Panel A, declarations for opposition candidate B in Panel B, and non-declarations in Panel C. We discuss these results below.[18] After employing differences in proportions to assess predictions, we demonstrate findings remain robust when conducting multivariate regressions and examining within-subject variation across treatments.

[18]Tests of Hypotheses 8 and 10 compare two treatment effects; they are thus excluded from Table 3 but discussed below.

While experimental findings conform with many theoretical expectations, primary sources of discrepancies warrant consideration at the outset. With respect to the deterministic model, discrepancies primarily arise because it predicts that treatments changing the expected utility from declaring for A (B) will affect A's (B's) declarations but not B's (A's) declarations. In numerous cases, we observe significant treatment effects on declarations for both candidates, largely because subjects close to $x_A^\star$ and $x_B^\star$ made suboptimal choices which are not random but reflect the shock to relative incentives. By contrast, the stochastic model captures such errors in decision making, so it conforms with more experimental findings. Some discrepancies arise, however, from the stochastic model's sensitivity: it predicts some change to the probability distribution over actions after any parameter change. In several cases, subjects did not alter their declaration choices enough to yield significant effects, even when signs corresponded with predictions. Notwithstanding such discrepancies, the experiment predominantly corroborates predictions about declared support.

No Clientelism (H1)

The first treatment examines how citizens' public expressions of political support change in response to clientelist inducements. Table 3 shows that declarations for A decrease from 46.0 percent in *Baseline Clientelism* to 37.1 percent in *No Clientelism* ($p = .01$), declarations for B increase from 30.5 to 33.8 percent ($p = .04$), and non-declarations increase from 23.5 to 29.1 percent ($p = .01$). These findings confirm that clientelist rewards successfully induced participants to alter their declarations in our experiment, consonant with fieldwork and surveys in Brazil and elsewhere. Two of these three experimental findings are consistent with predictions of the deterministic model; all three findings are consistent with predictions of the stochastic model.

Table 3: Declaration Choices by Treatment

	Panel A: Declaration for Clientelist Candidate A				
Treatment	*Proportion*	*Difference*	*p-value*	*Deterministic Prediction*	*Stochastic Prediction*
Baseline Clientelism	0.460	Baseline	Baseline	Baseline	Baseline
No Clientelism	0.371	-0.089	0.000	Decreases ✓	Decreases ✓
Lopsided Election	0.516	0.056	0.002	Increases ✓	Increases ✓
Cost	0.402	-0.058	0.002	Decreases ✓	Decreases ✓
Low Monitoring	0.431	-0.029	0.069	Decreases ✗	Decreases ✗
Expressive Utility	0.473	0.013	0.739	Decreases ✗	—
No Election Influence	0.458	-0.002	0.468	Decreases ✗	—
Competitive Clientelism	0.412	-0.048	0.008	No Effect ✗	Decreases ✓
Punishment Only	0.424	0.053	0.003	No Effect ✗	Increases ✓
Clientelism and Punishment	0.472	0.048	0.008	Increases ✓	Increases ✓
	Panel B: Declaration for Clientelist Candidate B				
Treatment	*Proportion*	*Difference*	*p-value*	*Deterministic Prediction*	*Stochastic Prediction*
Baseline Clientelism	0.305	Baseline	Baseline	Baseline	Baseline
No Clientelism	0.338	0.033	0.037	No Effect ✗	Increases ✓
Lopsided Election	0.274	-0.031	0.043	No Effect ✗	Decreases ✓
Cost	0.353	0.048	0.006	No Effect ✗	Increases ✓
Low Monitoring	0.323	0.018	0.162	No Effect ✓	Increases ✗
Expressive Utility	0.342	0.037	0.025	Increases ✓	—
No Election Influence	0.295	-0.010	0.714	Increases ✗	—
Competitive Clientelism	0.387	0.082	0.000	Increases ✓	Increases ✓
Punishment Only	0.311	-0.028	0.068	Decreases ✗	Decreases ✗
Clientelism and Punishment	0.312	0.002	0.466	No Effect ✓	Decreases ✗
	Panel C: No Declaration				
Treatment	*Proportion*	*Difference*	*p-value*	*Deterministic Prediction*	*Stochastic Prediction*
Baseline Clientelism	0.235	Baseline	Baseline	Baseline	Baseline
No Clientelism	0.291	0.056	0.001	Increases ✓	Increases ✓
Lopsided Election	0.210	-0.025	0.063	Decreases ✗	Decreases ✗
Cost	0.245	0.010	0.272	Increases ✗	Increases ✗
Low Monitoring	0.246	0.011	0.257	Increases ✗	Increases ✗
Expressive Utility	0.186	-0.049	0.001	Decreases ✓	—
No Election Influence	0.247	0.012	0.758	Decreases ✗	—
Competitive Clientelism	0.201	-0.034	0.019	Decreases ✓	Decreases ✓
Punishment Only	0.265	-0.025	0.077	Increases ✗	Increases ✗
Clientelism and Punishment	0.216	-0.049	0.002	Decreases ✓	Decreases ✓

Notes: 1,259 observations. Predictions aggregate across all partisan types. p-values refer to one-tailed difference in proportions Z tests. Treatments marked ✓if consistent with predictions at the .05 level and ✗ if at the .10 level; ✗ otherwise. All results are robust to using two-tailed tests, with the exception of *No Clientelism* in Panel B (p-value: 0.073) and *Lopsided Election* in Panel B (p-value: 0.087). To ensure analyses isolate the effect of a single parameter change: (1) *Punishment Only* is compared to *No Clientelism*, and (2) *Clientelism and Punishment* is compared to *Punishment Only*.

Lopsided Election (H2)

We next turn to political competition, a contextual characteristic that has important effects on clientelism. Amidst inducements, how might low political competition influence citizens' choices about whether to express political preferences publicly? To explore this question, we test how declarations change if clientelist candidate A is heavily favored to win the election. Table 3 demonstrates that A's declarations increase from 46.0 percent in *Baseline Clientelism* to 51.6 percent in *Lopsided Election* ($p = .01$), B's declarations decrease from 30.5 to 27.4 percent ($p = .04$), and non-declarations decrease from 23.5 to 21.0 percent ($p = .06$). These experimental findings suggest that uncompetitive elections amplify the effect of clientelism on public expressions of political support. Two of these three results conform with predictions of the deterministic model, and all three conform with the stochastic model (though the effect on non-declarations is only significant at the 10 percent level).

Cost (H3)

Even in contexts without clientelism, the social context of a neighborhood can discourage or encourage various forms of political expression (Huckfeldt, 1979), and citizens' decisions to display yard signs and bumper stickers in particular can be influenced by neighbors (Huckfeldt and Sprague, 1992; Makse and Sokhey, 2014). What if citizens who declare for clientelist candidate A suffer social costs imposed by their neighbors? As shown in Table 3, A's declarations decrease from 46.0 percent in *Baseline Clientelism* to 40.2 percent in *Cost* ($p = .01$), B's declarations increase from 30.5 to 35.3 percent ($p = .01$), and non-declarations increase from 23.5 to 24.5 percent ($p = .27$). Participants were thus responsive to this asymmetric increase in declaration costs, suggesting that the well-known challenges that machines face when obtaining votes in opposition territory (Stokes, 2005) may also extend beyond the ballot box. Findings comport with both models' predictions regarding A's declarations, but are less consistent with other expectations. While the stochastic model predicts the observed

increase in B's declarations, the deterministic model expects no effect. With regards to non-declarations, the observed increase is consistent with both models, but is statistically insignificant.

Low Monitoring (H4)

Machines often monitor citizens to minimize opportunistic defection, and the effectiveness of these efforts depends in part on their organizational infrastructure and resources (Stokes, 2005). How does reducing this monitoring capability affect voters' decisions to express political preferences publicly? Table 3 reports results from this experimental treatment: A's declarations decreased from 46.0 percent in *Baseline Clientelism* to 43.1 percent in *Low Monitoring* ($p = .07$), B's declarations increased from 30.5 percent to 32.3 percent ($p = .16$), and non-declarations increased from 23.5 percent to 24.6 percent ($p = .26$). The decrease in A's declarations is consistent with both models and suggests that monitoring has effects on clientelism extending beyond vote choices and turnout (Stokes et al., 2013; Rueda, 2017). By contrast, while signs follow predictions, neither model predicts the observed insignificant effects on A's declarations, B's declarations and non-declarations (with one exception).

Expressive Utility and Election Influence (H5 and H6)

Studies of voting behavior often point to expressive utility as a reason why citizens vote even if they are unlikely to influence the election outcome (e.g., Riker and Ordeshook, 1968). We examine how these two factors — expressive utility and election influence — affect citizens' decisions to express political preferences beyond the ballot box in contexts with clientelism. For these two treatments, unlike for other factors we manipulate, theoretical analyses only provide unambiguous predictions about the aggregate distribution of actions if parameter values are specified.[19] Given the experiment's parameter values, the deterministic model

[19] As discussed in Section 3.6, we focus on the deterministic model for these factors, given its homogeneous predictions across partisan types (unlike the stochastic model).

predicts that as citizens obtain greater expressive utility from declaring in accordance with their preferences, A's declarations decrease, non-declarations decrease, and B's declarations increase. Experimental results comport with two of these predictions: although A's declarations are unchanged (46.0 percent in *Baseline Clientelism* versus 47.3 percent in *Expressive Utility*, $p = 0.52$), non-declarations decrease (23.5 percent versus 18.6 percent, $p = 0.01$), and B's declarations increase (30.5 percent versus 34.2 percent, $p = 0.05$).

While research suggests that many survey respondents in the U.S. believe that lawn signs can influence votes (Makse and Sokhey, 2014), what effects are expected in contexts where such forms of declaration have no influence whatsoever on the election outcome? Given the experiment's parameter values, the deterministic model also predicts that as declarations' electoral impact falls: declarations for A increase, non-declarations increase and declarations for B decrease. Contrary to these predictions, subjects' choices in the experiment were insensitive to the degree to which declarations influence outcomes. No significant change was observed in A's declarations (46.0 percent in *Baseline Clientelism* versus 45.8 percent in *No Election Influence*, $p = 0.94$), non-declarations (23.5 percent versus 24.7 percent, $p = 0.48$), or B's declarations (30.5 percent versus 29.5 percent, $p = 0.57$). While not dispositive, one interpretation of these results is that voters ignore their declarations' potential impact on electoral outcomes, and instead focus on expressive utility and clientelist rewards. This interpretation would further validate our experimental design, which employs a decision-theoretic framework.[20] Moreover, this finding is relevant for future theoretical work on clientelism, as it suggests citizens may concentrate on their actions' direct consequences (e.g., receiving rewards) rather than indirect consequences (e.g., affecting the election).

Competitive Clientelism (H7 and H8)

In numerous countries, clientelism is not a monopolistic phenomenon, but rather involves multiple machines providing rewards in the same localities. For instance, Kitschelt's (2013)

[20]The Supplementary Information also includes a game-theoretic model.

cross-national survey reveals that competitive clientelism exists in nations such as Hungary, Ghana, Indonesia, Nigeria and Taiwan. How would competitive clientelism affect citizens' declaration choices? To investigate this question, Table 3 also shows results for a treatment in which both candidates provide contingent rewards: A's declarations decrease from 46.0 percent in *Baseline Clientelism* to 41.2 percent in *Competitive Clientelism* ($p = .01$), B's declarations increase from 30.5 to 38.7 percent ($p = .01$), and non-declarations decrease from 23.5 to 20.1 percent ($p = .02$). These experimental findings complement the broader literature's discussion of various challenges facing dominant machines amidst the rise of competitive clientelism: their public declarations also fall as alternative providers of benefits emerge. Moreover, these results corroborate two of three predictions of the deterministic model, and all three predictions of the stochastic model.

With regards to Hypothesis 8, we can also test predictions about the relative effectiveness of rewards offered by competing candidates with comparable political support.[21] In particular, the deterministic model predicts the impact of A's rewards on increasing A's declarations is the same as the impact of B's rewards on increasing B's declarations. In the experiment, increasing r_A raises A's declarations by 8.9 percentage points (46.0 percent in *Baseline Clientelism* minus 37.1 percent in *No Clientelism*), while increasing r_B raises B's declarations by 8.2 percentage points (38.7 percent in *Competitive Clientelism* minus 30.5 percent in *Baseline Clientelism*). As expected, the difference between the two treatment effects is statistically insignificant using a chi-square test ($p = 0.75$).

Punishments (H9 and H10)

Although studies of clientelism tend to focus on positive inducements, elites in some contexts employ punishments to influence voter behavior. The role of negative inducements in clientelism is emphasized by Mares and Young (2016), who note that substantially more Afrobarometer respondents report fear of punishments than offers of rewards. When a ma-

[21] In the treatments enabling this test, $q = \frac{1}{2}$.

chine metes out punishments, how does this affect public expressions of political support? We investigate this question experimentally with Punishment Only, in which A exclusively punishes citizens who declared for B. Comparing results to *No Clientelism* isolates the causal effect of introducing punishments; that is, any differences between the two treatments reflects declarations altered by negative inducements.[22] As shown in Table 3, A's declarations increase from 37.1 percent in *No Clientelism* to 42.4 percent in *Punishment Only* ($p = .01$), B's declarations decrease from 33.8 to 31.1 percent ($p = .07$), and non-declarations decrease from 29.1 to 26.5 percent ($p = .08$). Contrary to both models' predictions, punishments thus neither suppress the opposition's declarations nor increase non-declarations. On the other hand, in line with the stochastic model, they boost declarations for the candidate employing punishments.

These findings reveal how punishments can alter declaration patterns, but what if they are employed with rewards? Politicians in many contexts mix positive and negative inducements (Mares and Young, 2016, 2019). To isolate effects of this portfolio approach from that of punishments alone, we compare the aforementioned *Punishment Only* treatment with *Clientelism and Punishment*, in which A rewards its own declared supporters and punishes citizens who declared for B. Table 3 shows that A's declarations increase from 42.4 percent in *Punishment Only* to 47.2 percent in *Clientelism and Punishment* ($p = .01$), B's declarations are virtually unchanged, and non-declarations decrease from 26.5 to 21.6 percent ($p = .01$). These findings comport with all three predictions of the deterministic model, and two of three predictions of the stochastic model; the latter predicted a fall in B's declarations, which was not observed.

The experiment also sheds light on the relative effectiveness of rewards and punishments. In particular, the deterministic model predicts that the effect of r_A on increasing A's declarations is strictly larger than the effect of p_A on decreasing B's declarations. We test this

[22]This comparison isolates the effect because it changes only one parameter value (see Table 2).

prediction comparing the observed effect of adding A's rewards (i.e., the difference in behavior between *Baseline Clientelism* and *No Clientelism*) with the observed effect of adding A's punishments (i.e., the difference in behavior between *Punishment Only* and *No Clientelism*). The reward r_A increases A's declarations by 8.9 percentage points (46.0 percent in *Baseline Clientelism* minus 37.1 percent in *No Clientelism*), while the punishment p_A decreases B's declarations by 2.8 percentage points (31.1 percent in *Punishment Only* minus 33.8 percent in *No Clientelism*). This finding is consistent with our theoretical prediction, and the difference between these two treatment effects is statistically significant ($p = 0.01$ using a chi-square test).

Multivariate Regressions

Thus far, we have estimated treatment effects by comparing differences in proportions; such findings do not rely on parametric assumptions. To show robustness, we next conduct multivariate regressions that control for key variables and examine within-subject variation across treatments. This step involves pooling observations across treatments and adopting a basic parametric structure. More specifically, we employ logistic regressions and assume that declaration decisions are a function of each treatment as well as political preferences, survey round, and screener performance.[23] These covariates were described in Section 4. Recall that political preferences (x_i) about fictitious candidates were induced with payoffs. Survey round is included to control for the possibility that experience within the experiment affects declaration decisions. Screener performance, which refers to how many screener questions the subject answered correctly (0 to 2), controls for respondents' level of attentiveness. Some specifications include subject fixed effects to investigate within-subject variation across treatments. This step controls for any characteristics that do not vary across treatments for a given participant, such as age, education and gender.

[23]Findings are also robust when using multinomial logit.

Table 4: Estimates of Average Treatment Effects, Rewards (Logit)

	Declare for A		**Declare for B**		**No Declaration**	
Treatment	(1)	(2)	(3)	(4)	(5)	(6)
No Clientelism	-0.088**	-0.115**	0.032*	0.044*	0.056**	0.095**
	(0.017)	(0.020)	(0.015)	(0.020)	(0.015)	(0.023)
Lopsided Election	0.058**	0.076**	-0.032*	-0.045*	-0.025	-0.043*
	(0.016)	(0.020)	(0.015)	(0.020)	(0.013)	(0.022)
Cost	-0.058**	-0.077**	0.047**	0.066**	0.010	0.018
	(0.016)	(0.020)	(0.016)	(0.020)	(0.014)	(0.022)
Low Monitoring	-0.027	-0.035	0.016	0.022	0.011	0.019
	(0.017)	(0.020)	(0.015)	(0.020)	(0.014)	(0.022)
Expressive Utility	0.013	0.017	0.037*	0.051*	-0.049**	-0.084**
	(0.016)	(0.020)	(0.015)	(0.021)	(0.013)	(0.021)
No Election Influence	-0.001	-0.001	-0.011	-0.015	0.012	0.020
	(0.016)	(0.020)	(0.015)	(0.020)	(0.013)	(0.022)
Competitive Clientelism	-0.046**	-0.061**	0.080**	0.112**	-0.034**	-0.058**
	(0.016)	(0.020)	(0.016)	(0.021)	(0.013)	(0.021)
Round	0.007**	0.010**	-0.007**	-0.011**	0.000	0.001
	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
Partisan Type	0.004**		-0.002**		-0.002**	
	(0.000)		(0.000)		(0.000)	
Screener	0.013		-0.025**		0.012	
	(0.010)		(0.009)		(0.009)	
Subject Fixed Effects	No	Yes	No	Yes	No	Yes
Observations	10072	7656	10072	7192	10072	5888

Note: *: $p < 0.05$, **: $p < 0.01$. Coefficients report marginal effects from logistic regressions. Each observation corresponds to a decision in the experiment. *Baseline Clientelism* is the excluded treatment category, so that coefficients report differences from that baseline. Robust standard errors are reported, clustered by subject in columns 1, 3, and 5.

Table 5: Estimates of Average Treatment Effects, Punishment Only (Logit)

	Declare for A		**Declare for B**		**No Declaration**	
Treatment	(1)	(2)	(3)	(4)	(5)	(6)
Punishment Only	0.053**	0.152**	-0.027	-0.094**	-0.026	-0.098*
	(0.016)	(0.034)	(0.015)	(0.036)	(0.014)	(0.039)
Round	0.007*	0.013	-0.010**	-0.023**	0.003	0.007
	(0.003)	(0.008)	(0.003)	(0.008)	(0.003)	(0.009)
Partisan Type	0.002**		-0.002**		-0.000	
	(0.001)		(0.001)		(0.001)	
Screener	-0.009		-0.026*		0.034**	
	(0.013)		(0.013)		(0.012)	
Subjects Fixed Effects	No	Yes	No	Yes	No	Yes
Observations	2518	862	2518	746	2518	648

Note: *: $p < 0.05$, **: $p < 0.01$. Coefficients report marginal effects from logistic regressions. Each observation corresponds to a decision in the experiment. To isolate causal effects, the regressions in this table employ *No Clientelism* as the excluded category. Robust standard errors are reported, clustered by subject in columns 1, 3 and 5.

Table 6: Estimates of Average Treatment Effects, Clientelism & Punishment (Logit)

	Declare for A		**Declare for B**		**No Declaration**	
Treatment	(1)	(2)	(3)	(4)	(5)	(6)
Clientelism & Punishment	0.047*	0.133**	0.002	0.006	-0.049**	-0.198**
	(0.020)	(0.033)	(0.018)	(0.035)	(0.017)	(0.039)
Round	0.009**	0.036**	-0.009**	-0.039**	-0.001	-0.005
	(0.003)	(0.007)	(0.003)	(0.008)	(0.003)	(0.010)
Partisan Type	0.004**		-0.002**		-0.001**	
	(0.001)		(0.000)		(0.000)	
Screener	-0.005		-0.025*		0.029**	
	(0.011)		(0.011)		(0.010)	
Subjects Fixed Effects	No	Yes	No	Yes	No	Yes
Observations	2518	896	2518	780	2518	628

Note: *: $p < 0.05$, **: $p < 0.01$. Coefficients report marginal effects from logistic regressions. Each observation corresponds to a decision in the experiment. To isolate causal effects, the regressions in this table employ *Punishment Only* as the excluded category. Robust standard errors are reported, clustered by subject in columns 1, 3 and 5.

Nearly all findings from differences of proportions are robust to using multivariate analyses, both with respect to the accuracy of predictions and statistical significance. Table 4 focuses on rewards; coefficients for each treatment indicate marginal effects and are shown in comparison to *Baseline Clientelism* (the excluded treatment category). The only discrepancy pertains the effect of *Lopsided Election* on non-declarations, which is negative across all tests, but is only statistically significant in a logistic regression with subject fixed effects.[24] Turning to punishments, Tables 5 and 6 employ the identical methodology as Table 4, but compare to different base treatments to ensure that only one aspect of the decision environment is changed at a time. These multivariate regressions confirm all findings discussed above for *Clientelism and Punishment* (Table 6). For *Punishment Only*, multivariate regressions concord with findings above for the effect on A's declarations; effects on B's declarations and on non-declarations are negative across all tests but statistically significant only in logistic regressions with subject fixed effects (Table 5).[25]

6 Discussion

The present study has emphasized the role of citizen choices in clientelism, thereby redirecting the top-down focus adopted by most prominent research on the topic. The phenomenon of declared support not only counters the usual depiction of citizens as passive recipients, but also underscores how their scope of choices in clientelism extends well beyond the ballot box. When voters can obtain post-election benefits by declaring support for victorious candidates, their decisions to display campaign posters, wear political paraphernalia or attend rallies often reflect more than just political preferences. Theoretical analysis elaborates how and

[24] As shown in Table 3, the p-value for a difference in proportions Z test is 0.063.

[25] The p-values for difference in proportions Z tests are 0.068 and 0.077, respectively (see Table 3). Regarding H8 and H10, which compare two treatment effects: (a) for H8, findings are robust to using multivariate analyses with and without subject fixed effects, and (b) for H10, the difference between relevant coefficients has the predicted sign with and without subject fixed effects, but is significant only in the latter case.

why clientelism can influence citizens' choices to express political support publicly during campaigns. And furthermore, it suggests how various factors affect citizens' propensity to declare support in response to inducements. Theoretical predictions are tested with an online experiment involving 1,259 participants across Brazil. Subjects responded as predicted in numerous treatments, involving shifts in factors such as: (a) benefits from declaring for a victorious candidate, (b) the competitiveness of the election, (c) material or social costs of declaring, and (d) whether multiple candidates engage in clientelism. The experiment also reveals empirical patterns not predicted by theory: citizens are insensitive to whether their declarations can be easily monitored or can influence the election, and they increase declarations for clientelist candidates who punish their declared opposers. Overall, these results provide valuable insights about how and why clientelism influences political expression beyond the ballot box.

This study not only elaborates and tests the logic of declared support, but also lays the groundwork for further investigation into the role of citizens in clientelism. On the theoretical side, future work should complement our analysis of citizens' declarations by investigating the endogenous provision of rewards by politicians within a *general equilibrium* theory of clientelism, involving both citizens and politicians who make strategic choices as a mutual best response. Our study provides numerous insights for further exploration in such models. For instance, both theoretically and empirically, we find that rewards affect declared support relatively more than punishments do. This finding has important implications for politicians' clientelistic strategies, and may well provide one reason why rewards are more prevalent than punishments in various countries. Another result warrants investigation in future studies: although theoretically we expect both to inform citizens' choices, experimental subjects were responsive to declarations' direct effects but not to indirect effects on electoral outcomes.

On the empirical side, an important avenue for future research is examining patterns of declared support in various countries. As discussed, our fieldwork and recent observational work suggest a relationship between declarations and clientelism in Brazil, and more limited

evidence from Argentina, Ghana, Lebanon and Mexico reveals similar patterns. In order to test the external validity of the present study's experimental findings, it would be fruitful to collect data about declared support in settings with diverse characteristics. Such data would facilitate rigorous testing of our predictions employing data from actual instead of fictitious elections. This point notwithstanding, we observe a link between participants' preferences and behavior in real-world elections and decisions in our experiment. For example, citizens who reported being partisans or displaying campaign paraphernalia during Brazil's 2016 municipal elections were significantly more likely to declare support for the experiment's fictitious candidates — even though these factors had no impact on their experimental earnings.[26] Another important direction for future research is exploring the various modalities by which citizens can shape clientelist exchanges, and examining the conditions under which citizens are more or less motivated to undertake such actions. After all, declared support is an important phenomenon but is by no means the only action that citizens can take to influence their receipt of contingent benefits. These topics also warrant close attention in contexts where citizens face substantial constraints to autonomous decision making, such as under some authoritarian regimes.

Overall, a broader analytical lens that considers the choices of citizens — and not just those of politicians — holds substantial promise to deepen our understanding of contingent exchanges. Given the various consequences of clientelism for both democracy and development, improving our knowledge about this phenomenon would be a significant contribution.

[26]These findings are significant at the 5 percent level in a regression with various controls and state/partisan type fixed effects.

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Supplementary Information for
“Declared Support and Clientelism”

Contents

A Comparative Statics for Deterministic Model

As discussed in Section 3.3, to determine the marginal effect of each variable on the share of citizens who declare for B (A), we determine the sign of the partial derivative of cutpoint $x_B^\star$ ($x_A^\star$) with respect to that variable. To determine the marginal effect of each variable on the fraction of citizens who remain undeclared, we consider the partial derivatives of ($x_B^\star$ - $x_B^\star$).

$$x_B^\star = -\frac{c_B}{\alpha+\delta} \qquad\qquad x_A^\star = \frac{c_A-(q+\alpha)\gamma r_A}{\alpha+\delta}$$

$$x_A^\star - x_B^\star = \frac{c_A+c_B-\gamma(q+\alpha)r_A}{\alpha+\delta}$$

H1 *Reward Size*: $x_B^\star$ does not depend on r_A. The derivative of $x_A^\star$ with respect to r_A is $\frac{\partial x_A^\star}{\partial r_A} = -\frac{\gamma(\alpha+q)}{\alpha+\delta}$ which is always negative. Regarding non-declarations, increasing r_A decreases the numerator of $(x_A^\star - x_B^\star)$ and does not affect its denominator.

H2 *Machine Support*: $x_B^\star$ does not depend on q. The derivative of $x_A^\star$ with respect to q is $\frac{\partial x_A^\star}{\partial q} = -\frac{\gamma r_A}{\alpha+\delta}$ which is always negative. Regarding non-declarations, increasing q decreases the numerator of $(x_A^\star - x_B^\star)$ and does not affect its denominator.

H3 *Social Cost*: $x_B^\star$ does not depend on c_A. The derivative of $x_A^\star$ with respect to c_A is $\frac{\partial x_A^\star}{\partial c_A} = \frac{1}{\alpha+\delta}$ which is always positive. Regarding non-declarations, increasing c_A increases the numerator of $(x_A^\star - x_B^\star)$ and does not affect its denominator.

H4 *Monitoring*: $x_B^\star$ does not depend on γ. The derivative of $x_A^\star$ with respect to γ is $\frac{\partial x_A^\star}{\partial \gamma} = -\frac{(\alpha+q)r_A}{\alpha+\delta}$ which is always negative. Regarding non-declarations, increasing γ decreases the numerator of $(x_A^\star - x_B^\star)$ and does not affect its denominator.

H5 *Expressive Utility*: The derivative of $x_B^\star$ with respect to δ is $\frac{\partial x_B^\star}{\partial \delta} = \frac{c_B}{(\alpha+\delta)^2}$ which is always positive. The derivative of $x_A^\star$ with respect to δ is $\frac{\partial x_A^\star}{\partial \delta} = -\frac{c_A-(q+\alpha)\gamma r_A}{(\alpha+\delta)^2}$ which is positive if and only if $(q+\alpha)\gamma r_A > c_A$ (i.e., if and only if $x_A^\star < 0$). Regarding non-declarations, increasing δ increases the denominator of $(x_A^\star - x_B^\star)$ and does not affect its numerator, which is always positive since, by assumption, $c_A + c_B > \gamma(q+\alpha)r_A$.

H6 *Election Influence*: The derivative of $x_B^\star$ with respect to α is $\frac{\partial x_B^\star}{\partial \alpha} = \frac{c_B}{(\alpha+\delta)^2}$ which is always positive. The derivative of $x_A^\star$ with respect to α is $\frac{\partial x_A^\star}{\partial \alpha} = -\frac{\gamma r_A}{(\alpha+\delta)} - \frac{c_A-(q+\alpha)\gamma r_A}{(\alpha+\delta)^2} = -\frac{\gamma r_A + x_A^\star}{\alpha+\delta}$ which is positive if and only if $(q-\delta)\gamma r_A > c_A$ (i.e., if and only if $x_A^\star > -\gamma r_A$). Regarding non-declarations, increasing α reduces the numerator of $(x_A^\star - x_B^\star)$ — which remains positive given the assumed existence of non-declarers — and increases its denominator.

In the extension with competitive clientelism, ($x_A^\star$) remains as shown above, but now:

$$x_B^\star = -\frac{c_B-(1-q+\alpha)\gamma r_B}{\alpha+\delta} \qquad x_A^\star - x_B^\star = \frac{c_A+c_B-\gamma[(q+\alpha)r_A+(1-q+\alpha)r_B]}{\alpha+\delta}$$

H7 *Competitive Clientelism*: $x_A^\star$ does not depend on r_B. The derivative of $x_B^\star$ with respect to r_B is $\frac{\partial x_B^\star}{\partial r_B} = \frac{(1-q+\alpha)\gamma}{\alpha+\delta}$ which is always positive. The derivative of $x_A^\star - x_B^\star$ with respect to r_B is $\frac{\partial x_A^\star - x_B^\star}{\partial r_B} = -\frac{(1-q+\alpha)\gamma}{\alpha+\delta}$ which is always negative.

H8 *Relative Impact of Rewards by A vs. Rewards by B*: $\left|\frac{\partial x_A^\star}{\partial r_A}\right| - \left|\frac{\partial x_B^\star}{\partial r_B}\right| = \frac{\gamma(\alpha+q)}{\alpha+\delta} - \frac{\gamma(1-q+\alpha)}{\alpha+\delta} = \frac{\gamma(2q-1)}{\alpha+\delta}$, which is greater than 0 if and only if $q > \frac{1}{2}$ and equal to 0 if and only if $q = \frac{1}{2}$.

In the extension with punishment, $(x_A^\star)$ remains as shown above, but now:

$$x_B^\star = -\frac{c_B + (q-\alpha)\gamma p_A}{\alpha+\delta} \qquad x_A^\star - x_B^\star = \frac{c_A + c_B - \gamma[(q+\alpha)r_A - (q-\alpha)p_A]}{\alpha+\delta}$$

H9 *Punishments*: $x_A^\star$ does not depend on p_A. The derivative of $x_B^\star$ with respect to p_A is $\frac{\partial x_B^\star}{\partial p_A} = \frac{(q-\alpha)\gamma}{\alpha+\delta}$ which is always positive. The derivative of $x_A^\star - x_B^\star$ with respect to p_A is $\frac{\partial x_A^\star - x_B^\star}{\partial p_A} = -\frac{(q-\alpha)\gamma}{\alpha+\delta}$ which is always negative.

H10 *Relative Impact of Rewards vs. Punishments*: $\left|\frac{\partial x_A^\star}{\partial r_A}\right| - \left|\frac{\partial x_B^\star}{\partial p_A}\right| = \frac{\gamma(\alpha+q)}{\alpha+\delta} - \frac{\gamma(q-\alpha)}{\alpha+\delta} = \frac{\gamma(2\alpha)}{\alpha+\delta}$, which is weakly greater than 0 for any $\alpha \geq 0$ (and strictly for any $\alpha > 0$).

B Comparative Statics for Stochastic Choice Model

As described in Section 3.6, we assume that citizens choose according to a Logit stochastic choice rule. The probability that citizen i chooses declaration action $j = \{A, B, \emptyset\}$ is:

$$\pi_j = \frac{exp(\lambda U_j)}{exp(\lambda U_A) + exp(\lambda U_B) + exp(\lambda U_\emptyset)} \tag{1}$$

where, using a compact notation, $U_A = EU_i(A)$ as in equation (1) in the paper, $U_B = EU_i(B)$ as in equation (2) in the paper, $U_\emptyset = EU_i(\emptyset)$ as in equation (3) in the paper and $\lambda \in [0, \infty)$ measures responsiveness to expected payoffs. The partial derivative of π_j with respect to parameter y is:

$$\frac{\partial \pi_j}{\partial y} = \frac{\lambda exp(\lambda U_j)\frac{\partial U_j}{\partial y}\left[\sum_{i \neq j} exp(\lambda U_i)\right] - exp(\lambda U_j)\left[\sum_{i \neq j} \lambda exp(\lambda U_i)\frac{\partial U_i}{\partial y}\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2} \tag{2}$$

The denominator of (2) is always positive. Thus, $\frac{\partial \pi_j}{\partial y}$ is positive if and only if the numerator is positive. The text below refers to "Case 1" as one case in which it is easy to determine the sign of $\frac{\partial \pi_j}{\partial y}$: when parameter y only affects the expected utility from action j—that is, $\frac{\partial U_j}{\partial y} \neq 0$ for action j and $\frac{\partial U_i}{\partial y} = 0$ for both actions $i \neq j$. In this case, $\frac{\partial \pi_j}{\partial y} > 0$ if and only if $\frac{\partial U_j}{\partial y} > 0$ and $\frac{\partial \pi_{i \neq j}}{\partial y} > 0$ if and only if $\frac{\partial U_j}{\partial y} < 0$.

H1 *Reward Size*: As A provides larger rewards, declarations for A increase, declarations for B decrease, and non-declarations decrease.

The derivative of the expected utility from each action with respect to r_A is:

$$\frac{\partial U_A}{\partial r_A} = (q+\alpha)\gamma > 0 \qquad \frac{\partial U_B}{\partial r_A} = 0 \qquad \frac{\partial U_\emptyset}{\partial r_A} = 0$$

Marginally increasing r_A increases U_A for all citizens but does not affect U_B or $U_\emptyset$. Thus, we fall in "Case 1," and we have $\frac{\partial \pi_A}{\partial r_A} > 0$, $\frac{\partial \pi_B}{\partial r_A} < 0$, and $\frac{\partial \pi_\emptyset}{\partial r_A} < 0$.

H2 *Machine Support*: As A's probability of winning increases, declarations for A increase, declarations for B decrease, and non-declarations decrease.

The derivative of the expected utility from each action with respect to q is:

$$\frac{\partial U_A}{\partial q} = x_i + \gamma r_A \qquad \frac{\partial U_B}{\partial q} = x_i \qquad \frac{\partial U_\emptyset}{\partial q} = x_i$$

Marginally increasing q increases U_A by $x_i + \gamma r_A$, U_B by x_i and $EU_\emptyset$ by x_i. We have:

$$\frac{\partial \pi_A}{\partial q} = \frac{\lambda exp(\lambda U_A)(\gamma r_A)\left[\sum_{i \neq A} exp(\lambda U_i)\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2} \qquad \frac{\partial \pi_B}{\partial q} = \frac{-exp(\lambda U_B)\lambda exp(\lambda U_A)\gamma r_A}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2} \qquad \frac{\partial \pi_\emptyset}{\partial q} = 0\frac{-exp(\lambda U_\emptyset)\lambda exp(\lambda U_A)\gamma r_A}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2}$$

$\frac{\partial \pi_A}{\partial q}$ is always positive; $\frac{\partial \pi_B}{\partial q}$ is always negative; and $\frac{\partial \pi_\emptyset}{\partial q}$ is always negative.

H3 *Social Cost*: As the social cost of declaring for clientelist candidate A increases, declarations for A decrease, declarations for B increase, and non-declarations increase.

The derivative of the expected utility from each action with respect to c_A is:

$$\frac{\partial U_A}{\partial c_A} = -1 < 0 \qquad \frac{\partial U_B}{\partial c_A} = 0 \qquad \frac{\partial U_\emptyset}{\partial c_A} = 0$$

Marginally increasing c_A decreases U_A for all citizens but does not affect U_B or $U_\emptyset$. Thus, we fall in "Case 1," and we have $\frac{\partial \pi_A}{\partial c_A} < 0$, $\frac{\partial \pi_B}{\partial c_A} > 0$, and $\frac{\partial \pi_\emptyset}{\partial r_A} > 0$.

H4 *Monitoring*: As A's monitoring ability increases, declarations for A increase, declarations for B decrease, and non-declarations decrease.

The derivative of the expected utility from each action with respect to γ is:

$$\frac{\partial U_A}{\partial \gamma} = (q+\alpha)r_A > 0 \qquad \frac{\partial U_B}{\partial \gamma} = 0 \qquad \frac{\partial U_\emptyset}{\partial \gamma} = 0$$

Marginally increasing γ increases $EU_i(A)$, and does not affect $EU_i(B)$ and $EU_i(\emptyset)$. Thus, we fall in "Case 1," and we have $\frac{\partial \pi_A}{\partial \gamma} > 0$, $\frac{\partial \pi_B}{\partial \gamma} < 0$, and $\frac{\partial \pi_\emptyset}{\partial \gamma} < 0$.

H5 *Expressive Utility*: As the utility of declaring in accordance with preferences increases, declarations for A increase among A's supporters, but decrease among B's supporters. Declarations for B increase among B's supporters, but decrease among A's supporters. Declarations by indifferent citizens are unaffected. The aggregate effect is ambiguous.

The derivative of the expected utility from each action with respect to δ is:

$$\frac{\partial U_A}{\partial \delta} = x_i \qquad \frac{\partial U_B}{\partial \delta} = -x_i \qquad \frac{\partial U_\emptyset}{\partial \delta} = 0$$

Marginally increasing δ increases the expected utility any citizen derives from supporting her favorite candidate, decreases the expected utility she derives from supporting the other candidate, and does not affect the expected utility from remaining undeclared. We have:

$$\frac{\partial \pi_A}{\partial \delta} = \frac{\lambda exp(\lambda U_A) x_i \left[\sum_{i \neq j} exp(\lambda U_i)\right] + exp(\lambda U_A)\left[\lambda exp(\lambda U_B) x_i\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2}$$

which is positive if $x_i > 0$, equal to 0 if $x_i = 0$, and negative if $x_i < 0$.

$$\frac{\partial \pi_B}{\partial \delta} = \frac{-\lambda exp(\lambda U_B) x_i \left[\sum_{i \neq j} exp(\lambda U_i)\right] - exp(\lambda U_B)\left[\lambda exp(\lambda U_A) x_i\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2}$$

which is positive if $x_i < 0$, equal to 0 if $x_i = 0$, and negative if $x_i > 0$.

$$\frac{\partial \pi_\emptyset}{\partial \delta} = \frac{-exp(\lambda U_\emptyset)\lambda x_i \left[exp(\lambda U_A) - exp(\lambda U_B)\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2}$$

Since $f(x) = exp(\lambda x)$ is strictly increasing in x, $exp(\lambda U_A) - exp(\lambda U_B)$ is positive if and only if $U_A - U_B$ is positive. Thus, $\frac{\partial \pi_\emptyset}{\partial \delta}$ is positive if and only if $x_i(U_A - U_B)$ is positive.

H6 *Election Influence*: As the election influence of declaring increases: declarations for A increase and declarations for B decrease among A's supporters and sufficiently weak B's supporters (that is, if $x_i > -\frac{\gamma r_A}{2}$); declarations for A decrease and declarations for B increase among sufficiently strong B's supporters (that is, if $x_i < -\gamma r_A$). The aggregate effect is ambiguous.

The derivative of the expected utility from each action with respect to α is:

$$\frac{\partial U_A}{\partial \alpha} = x_i + \gamma r_A \qquad \frac{\partial U_B}{\partial \alpha} = -x_i \qquad \frac{\partial U_\emptyset}{\partial \alpha} = 0$$

We have:

$$\frac{\partial \pi_A}{\partial \alpha} = \frac{\lambda exp(\lambda U_A) exp(\lambda U_B)(2x_i + \gamma r_A) + \lambda exp(\lambda U_A) exp(\lambda U_\emptyset)(x_i + \gamma r_A)}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2}$$

A sufficient condition for this to be positive is $x_i > -\frac{\gamma r_A}{2}$ and a sufficient condition for this to be negative is $x_i < -\gamma r_A$. For $x_i \in [-\gamma r_A, -\frac{\gamma r_A}{2}]$, the sign depends on other parameters.

$$\frac{\partial \pi_B}{\partial \alpha} = -\frac{\lambda exp(\lambda U_B) exp(\lambda U_A)(2x_i + \gamma r_A) + \lambda exp(\lambda U_B) exp(\lambda U_\emptyset) x_i}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2}$$

A sufficient condition for this to be negative is $x_i > -\frac{\gamma r_A}{2}$ and a sufficient condition for this to be positive is $x_i < -\gamma r_A$. For $x_i \in [-\gamma r_A, -\frac{\gamma r_A}{2}]$, the sign depends on other parameters.

$$\frac{\partial \pi_\emptyset}{\partial \alpha} = \frac{-exp(\lambda U_\emptyset)\left[\lambda exp(\lambda U_A)(x_i + \gamma r_A) - \lambda exp(\lambda U_B) x_i\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2}$$

A sufficient condition for this to be negative is $x_i \in (-\gamma r_A, 0)$. For other values of x_i, the sign depends on other parameters.

H7 *Competitive Clientelism*: As candidate B provides larger rewards, declarations for A decrease, declarations for B increase, and non-declarations decrease.

The partial derivatives of the expected utility from each action with respect to r_B are:

$$\frac{\partial U_A}{\partial r_B} = 0 \qquad \frac{\partial U_B}{\partial r_B} = (1-q+\alpha)\gamma > 0 \qquad \frac{\partial U_\emptyset}{\partial r_B} = 0$$

We fall in "Case 1," and have $\frac{\partial \pi_A}{\partial r_B} < 0$, $\frac{\partial \pi_B}{\partial r_B} > 0$, and $\frac{\partial \pi_\emptyset}{\partial r_B} < 0$.

H8 *Relative Impact of Rewards across Candidates*: Consider $r_A = r_B = r$, $c_A = c_B = c$, $\delta = 0$, $q \geq 1/2$. Among A's supporters, neutral citizens and weak B's supporters (that is, for $x_i > -\gamma r$), the marginal effect of r_A on increasing declarations for A is strictly larger than the marginal effect of r_B on increasing declarations for B.

$$\frac{\partial \pi_A}{\partial r_A} = \frac{\lambda exp(\lambda U_A)(q+\alpha)\gamma\left[\sum_{i\neq A} exp(\lambda U_i)\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2} \quad > \quad \frac{\partial \pi_B}{\partial r_B} = \frac{\lambda exp(\lambda U_B)(1-q+\alpha)\gamma\left[\sum_{i\neq j} exp(\lambda U_i)\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2}$$

Rearranging we get:

$$\frac{exp[\lambda(2q\gamma r + 2qx_i - 2c)] + exp[\lambda(q\gamma r + 2qx_i - c + \alpha(\gamma r + x_i)]}{exp[\lambda(2q\gamma r + 2qx_i - 2c)] + exp[\lambda(q\gamma r + 2qx_i - c - \alpha(\gamma r + x_i)]} \quad > \quad \frac{1-q+\alpha}{q+\alpha}$$

Since $q \geq 1/2$, the RHS is smaller than or equal to 1. If $\alpha = 0$, the LHS is equal to 1 and the inequality holds for any x_i. If $\alpha > 0$ and $x_i > -\gamma r$, the LHS is strictly greater than 1.

H9 *Punishments*: As the clientelist candidate A imposes greater punishments, declarations for A increase, declarations for B decrease, and non-declarations increase.

The partial derivatives of the expected utility from each action with respect to p_A are:

$$\frac{\partial U_A}{\partial p_A} = 0 \qquad \frac{\partial U_B}{\partial p_A} = -(q-\alpha)\gamma < 0 \qquad \frac{\partial U_\emptyset}{\partial p_A} = 0$$

Thus, we fall in "Case 1," and have $\frac{\partial \pi_A}{\partial p_A} > 0$, $\frac{\partial \pi_B}{\partial r_B} < 0$, and $\frac{\partial \pi_\emptyset}{\partial r_B} > 0$.

H10 *Relative Impact of Rewards vs. Punishments*: Consider $r_A = p_A = r$, $c_A = c_B = c$, $\delta = 0$, $q \geq 1/2$. Among A's supporters, neutral citizens and weak B's supporters (that is, for $x_i > -\frac{q\gamma r}{\alpha}$), the marginal effect of r_A on increasing declarations for A is strictly larger than the marginal effect of p_A on decreasing declarations for B.

$$\left|\frac{\partial \pi_A}{\partial r_A}\right| = \frac{\lambda exp(\lambda U_A)(q+\alpha)\gamma\left[\sum_{i\neq A} exp(\lambda U_i)\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2} > \left|\frac{\partial \pi_B}{\partial p_A}\right| = \frac{\lambda exp(\lambda U_B)(q-\alpha)\gamma\left[\sum_{i\neq j} exp(\lambda U_i)\right]}{\left[\sum_{i=\{A,B,\emptyset\}} exp(\lambda U_i)\right]^2}$$

Rearranging we get:

$$\frac{exp[\lambda(2\alpha\gamma r + 2qx_i - 2c)] + exp[\lambda((\gamma r + x_i)\alpha + \gamma qr + 2qx_i - c)]}{exp[\lambda(2\alpha\gamma r + 2qx_i - 2c)] + exp[\lambda((\gamma r - x_i)\alpha - \gamma qr + 2qx_i - c)]} \quad > \quad \frac{q-\alpha}{q+\alpha}$$

Since $q \geq 1/2$, the RHS is smaller than or equal to 1. If $\alpha = 0$, the LHS is greater than 1 and the inequality holds for any x_i. If $\alpha > 0$ and $x_i > -\frac{\gamma qr}{\alpha}$, the LHS is > 1.

C Strategic Model of Declared Support

To clarify the logic by which declarations can affect other citizens' vote intentions and, thus, electoral outcomes, we analyze the stylized case in which there are two voters, V_1, V_2. Ideological preferences are a voter's private information but their distribution is common knowledge: x_1, x_2 are IID draws from $f \sim U[-k,k]$.[1] Voters derive "joy of winning" if they vote for the election winner, $R > 0$. This is the timing of the game:

1. V_1 decides whether to declare support for A (at cost $c_A > 0$), declare support for B (at cost $c_B > 0$) or remain undeclared.

2. V_2 observes V_1's decision.

3. On election day, V_2 decides whether to vote for A, vote for B, or to abstain. If he votes, V_2 incurs cost $c_2 > 0$. V_1 votes according to his declaration.

4. The election winner is determined as a function of the citizens' votes. We assume that the probability a candidate wins is increasing in the absolute amount of votes received by V_1 and V_2. This is meant to capture the fact that, while we model the strategic interaction between a subset of voters (e.g., two neighbors who can monitor each other's declarations), the electorate is potentially larger. In particular, we make the following assumptions:

   - If A receives 2 votes more than B, A wins with probability 1.
   - If A receives 1 vote more than B, A wins with probability $q \in (1/2, 3/4)$.
   - If A and B receive the same number of votes, A wins with probability $1/2$.
   - If A receives 1 vote less than B, A wins with probability $(1-q) \in (1/4, 1/2)$.
   - If A receives 2 votes less than B, A wins with probability 0.

5. If A wins and V_1 is observed to declare support for A, A distributes rewards r_A to V_1; if A wins and V_1 is observed to declare support for B, A doles out punishment p_A to V_1; if B wins and V_1 is observed to declare support for B, B distributes rewards r_B to V_1.

Since this is a sequential game, we solve it with backward induction.

Stage 2: V_2's Voting Decision

CASE 1: V_1 did not declare support for either candidate in Stage 1

The expected utility that V_2 derives from the three actions are:

$$EU_2(A) = q(x_2 + R) - c_2 \qquad EU_2(B) = qR + (1-q)x_2 - c_2 \qquad EU_2(\emptyset) = 0.5x_2$$

V_2 prefers to vote for A rather than abstaining if and only if $x_2 > x^1_{2A} = \frac{c_2 - qR}{q - 0.5}$.

V_2 prefers to vote for B rather than abstaining if and only if $x_2 < x^1_{2B} = -\frac{c_2 - qR}{q - 0.5}$.

We assume $c_2 > qR$ so that have $x^1_{2A} > x^1_{2B}$ and, thus, some abstention: V_2 votes for A if $x_2 \geq x^1_{2A}$, votes for B if $x_2 \leq x^1_{2B}$ and abstains if $x_2 \in (x^1_{2A}, x^1_{2B})$.

From the perspective of V_1 — after he decides to remain undeclared but before the election — the probability that V_2 votes for A is equal to the probability that x_2 is greater than x^1_{2A};

[1] As long as k is sufficiently large, all probabilities presented below are between 0 and 1.

the probability that V_2 votes for B is equal to the probability that x_2 is lower than x_{2B}^1; and the probability that V_2 abstains is equal to the probability that x_2 is between x_{2B}^1 and x_{2A}^1. Since x_2 is distributed uniformly between $-k$ and k, we have:

$$\begin{aligned} Pr[V_2 \text{ votes for A}|V_1 \text{ abstains}] &= 1-F(x_{2A}^1) = \frac{k(2q-1)+2qR-2c_2}{(4q-2)k} \\ Pr[V_2 \text{ votes for B}|V_1 \text{ abstains}] &= F(x_{2B}^1) = \frac{k(2q-1)+2qR-2c_2}{(4q-2)k} \\ Pr[V_2 \text{ abstains}|V_1 \text{ abstains}] &= F(x_{2A}^1)-F(x_{2B}^1) = \frac{-2Rq+2c_2}{(2q-1)k} \end{aligned}$$

CASE 2: V_1 declared support for A in Stage 1

The expected utility that V_2 derives from the three actions are:

$$EU2(A) = (x_2+R)-c_2 \qquad EU2(B) = \frac{R}{2}+\frac{x_2}{2}-c_2 \qquad EU2(\emptyset) = qx_2$$

V_2 prefers to vote for A rather than abstaining if and only if $x_2 > x_{2A}^2 = \frac{c_2-R}{1-q}$.
V_2 prefers to vote for B rather than abstaining if and only if $x_2 < x_{2B}^2 = -\frac{c_2-R}{1-q}$.
We compute the distribution of V_2's actions from V_1's perspective as above and we get:

$$\begin{aligned} Pr[V_2 \text{ votes for A}|V_1 \text{ declares for } A] &= 1-F(x_{2A}^2) = \frac{k(q-1)-R+c_2}{2(q-1)k} \\ Pr[V_2 \text{ votes for B}|V_1 \text{ declares for } A] &= F(x_{2B}^2) = \frac{-2c_2+R+k(2q-1)}{(4q-2)k} \\ Pr[V_2 \text{ abstains}|V_1 \text{ declares for } A] &= F(x_{2A}^2)-F(x_{2B}^2) = \frac{Rq-c_2}{4kq^2-6kq+2k} \end{aligned}$$

CASE 3: V_1 declared support for B in Stage 1

The expected utility that V_2 derives from the three actions are:

$$EU2(A) = \frac{x_2+R}{2}-c_2 \qquad EU2(B) = R-c_2 \qquad EU2(\emptyset) = (1-q)x_2$$

V_2 prefers to vote for A rather than abstaining if and only if $x_2 > x_{2A}^3 = \frac{c_2-0.5R}{q-0.5}$.
V_2 prefers to vote for B rather than abstaining if and only if $x_2 < x_{2B}^3 = -\frac{c_2-R}{1-q}$.
We compute the distribution of V_2's actions from V_1's perspective as above and we get:

$$\begin{aligned} Pr[V_2 \text{ votes for A}|V_1 \text{ declares for } B] &= 1-F(x_{2A}^3) = \frac{-2c_2+R+k(2q-1)}{(4q-2)k} \\ Pr[V_2 \text{ votes for B}|V_1 \text{ declares for } B] &= F(x_{2B}^3) = \frac{k(q-1)-R+c_2}{2(q-1)k} \\ Pr[V_2 \text{ abstains}|V_1 \text{ declares for } B] &= F(x_{2A}^3)-F(x_{2B}^3) = \frac{Rq-c_2}{4kq^2-6kq+2k} \end{aligned}$$

Summing up the results from Stage 2, we have:

$$\begin{aligned}
Pr[V_2 \text{ votes for A}|V_1 \text{ undeclared}] = Pr[V_2 \text{ votes for B}|V_1 \text{ undeclared}] &= \frac{k(2q-1)+2qR-2c_2}{(4q-2)k} \\
Pr[V_2 \text{ abstains}|V_1 \text{ undeclared}] &= \frac{-2Rq+2c_2}{(2q-1)k} \\
Pr[V_2 \text{ votes for A}|V_1 \text{ declared for A}] = Pr[V_2 \text{ votes for B}|V_1 \text{ declared for } B] &= \frac{k(q-1)-R+c_2}{2(q-1)k} \\
Pr[V_2 \text{ votes for B}|V_1 \text{ declared for A}] = Pr[V_2 \text{ votes for A}|V_1 \text{ declared for B}] &= \frac{-2c_2+R+k(2q-1)}{(4q-2)k} \\
Pr[V_2 \text{ abstains}|V_1 \text{ declared for A or B}] &= \frac{Rq-c_2}{4kq^2-6kq+2k}
\end{aligned}$$

It is evident that $Pr[V_2 \text{ votes for A}|V_1 \text{ declared for A}] > Pr[V_2 \text{ votes for A}|V_1 \text{ undeclared}]$ and that $Pr[V_2 \text{ votes for A}|V_1 \text{ undeclared}] > Pr[V_2 \text{ votes for A}|V_1 \text{ declared for B}]$.

Stage 1: V_1's Declaration Decision

From the perspective of V_1: the probability that A wins the election if he does not declare support for either candidate is $\frac{1}{2}$; the probability that A wins the election if he declares support for A is $\frac{R+3k}{4k}$; the probability that A wins the election if he declares support for B is $\frac{-R+k}{4k}$. Since $R > 0 > -k$, we have that Pr[A wins if V_1 declares for A] > Pr [A wins if V_1 undeclared] $= \frac{1}{2}$ > Pr [A wins if V_1 declares for B].[2] Consider now V_1's decision.

V_1 prefers to declare support for A rather than remaining undeclared if and only if:

$$\begin{aligned}
EU(A) &> EU(\emptyset) \\
x_1 &> x_{1A}^\star = \frac{k(-3\gamma r_A - 3R + 4c_A) - R\gamma r_A - R^2}{(4\delta+1)k+R}
\end{aligned}$$

V_1 prefers to declare support for A rather than remaining undeclared if and only if:

$$\begin{aligned}
EU(B) &> EU(\emptyset) \\
x_1 &< x_{1B}^\star = \frac{k(3R+(-p_A+3r_B)\gamma-4c_B)+(R+\gamma(p_A+r_B))R}{(4\delta+1)k+R}
\end{aligned}$$

If we assume $r_B = p_A = 0$ as in the baseline model from Section 3, the cutoff becomes:

$$x_1 < x_{1B}^\star = \frac{k(3R-4c_B)+R^2}{(4\delta+1)k+R}$$

We obtain comparative statics by taking the partial derivatives of each cutoff. Hypotheses below are enumerated to facilitate comparison with main paper's hypotheses; since the probability A wins is endogenous in the present model, there are no counterparts of H2 and H6:

- H1: As r_A increases, declarations for A increase $\left(\frac{\partial x_{1A}^\star}{\partial r_A} < 0\right)$; declarations for B are unaffected $\left(\frac{\partial x_{1B}^\star}{\partial r_A} = 0\right)$; non-declarations decrease $\left(\frac{\partial (x_{1A}^\star - x_{1B}^\star)}{\partial r_A} < 0\right)$.

[2]Note that this model endogenizes the probability that A wins as a function of declarations and shows one channel that can lead to $\alpha > 0$ in a strategic environment with multiple voters.

- H3: As c_A increases, declarations for A decrease $\left(\frac{\partial x_{1A}^{\star}}{\partial c_A} > 0\right)$; declarations for B are unaffected $\left(\frac{\partial x_{1B}^{\star}}{\partial c_A} = 0\right)$; non-declarations increase $\left(\frac{\partial (x_{1A}^{\star} - x_{1B}^{\star})}{\partial c_A} > 0\right)$.

- H4: As γ increases, declarations for A increase $\left(\frac{\partial x_{1A}^{\star}}{\partial \gamma} < 0\right)$; declarations for B are unaffected $\left(\frac{\partial x_{1B}^{\star}}{\partial \gamma} = 0\right)$; and non-declarations decrease ($\left(\frac{\partial (x_{1A}^{\star} - x_{1B}^{\star})}{\partial \gamma} < 0\right)$

- H5: As δ increases, declarations for A increase if and only if $x_{1A}^{\star} > 0$ $\left(\frac{\partial x_{1A}^{\star}}{\partial \gamma} < 0 \text{ if and only if } x_{1A}^{\star} > 0\right)$; declarations for B increase if and only if $x_{1B}^{\star} < 0$ $\left(\frac{\partial x_{1B}^{\star}}{\partial \gamma} > 0 \text{ if and only if } x_{1B}^{\star} < 0\right)$. The effect on non-declarations depend on the parameters.

- H7: As r_B increases, declarations for A are unaffected $\left(\frac{\partial x_{1A}^{\star}}{\partial r_B} = 0\right)$; declarations for B increase $\left(\frac{\partial x_{1B}^{\star}}{\partial r_B} > 0\right)$; and non declarations decrease $\left(\frac{\partial (x_{1A}^{\star} - x_{1B}^{\star})}{\partial r_B} < 0\right)$.

- H8: Assume $k > R$. As p_A increases, declarations for A are unaffected $\left(\frac{\partial x_{1A}^{\star}}{\partial p_A} = 0\right)$, declarations for B decrease $\left(\frac{\partial x_{1B}^{\star}}{\partial p_A} < 0\right)$, and non-declarations increase $\left(\frac{\partial (x_{1A}^{\star} - x_{1B}^{\star})}{\partial p_A} > 0\right)$.

D Characteristics of Online Sample vs. Brazil Overall

Table 1: Characteristics of Online Sample vs. Brazil Overall

	Online Sample	**Brazil Overall**
Gender		
Female	46.2%	49.0%
Male	53.8%	51.0%
Age		
18-29	34.7%	31.0%
30-39	15.6%	22.3%
40-49	18.3%	18.5%
50-59	21.8%	13.6%
60-69	6.7%	8.1%
70+	1.8%	6.4%
Region		
Center-West	6.2%	7.4%
North	4.9%	8.3%
Northeast	30.6%	27.8%
South	20.0%	14.4%
Southeast	38.4%	42.1%
Urban		
Rural	19.2%	15.6%
Urban	80.8%	84.4%

Notes: Characteristics of online sample are self-reported by participants in the declared support experiment. These participants were recruited through Facebook advertisements, as described in Section 4 of the paper. Characteristics of Brazil overall reflect 2010 data from Brazil's census bureau (*Instituto Brasileiro de Geografia e Estatística*).

E Screenshot Examples

Instructions (Page 1 of 2)

Obrigado por participar! Você já tem 50 FICHAS para o sorteio do iPhone 5S. Você agora vai jogar 10 jogos para ganhar mais fichas. Quanto mais fichas você tiver, mais chances você vai ter de ganhar o iPhone.

Cada jogo tem uma eleição. Dois candidatos concorrem para a prefeitura – o candidato amarelo e o candidato verde.

Em cada jogo, você vai ter a opção de colocar uma bandeira amarela ou verde na sua casa. Se você colocar uma bandeira, você aumenta as chances do seu candidato ganhar a eleição. Você pode escolher não colocar nenhuma bandeira.

>>

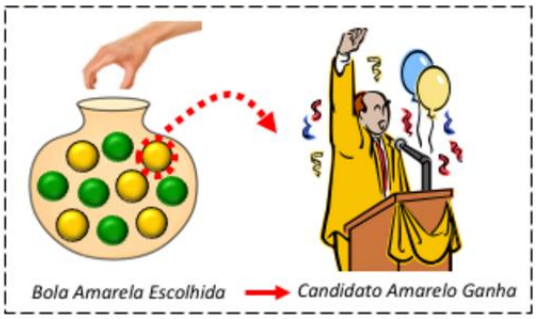
TRANSLATION: "Thank you for participating! You already have 50 TICKETS for the IPhone 5S lottery. You will now play 10 games to earn more tickets. The more tickets you have, the more chances you will have to win an Iphone. Every game has an election. Two candidates run for mayor — the yellow candidate and the green candidate. In each game, you will have the option to place a yellow or green flag on your house. If you put up a flag, you increase the chances of that candidate winning the election. You can also choose to place no flag on your house."

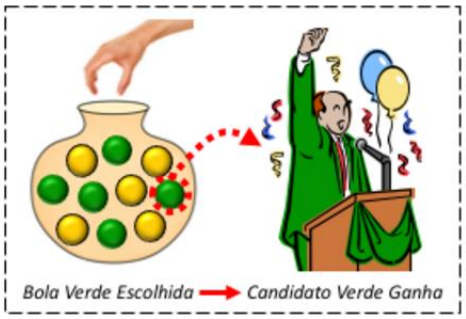
Instructions (Page 2 of 2)

Leia as instruções com cuidado. As fichas que você ganha para cada escolha podem mudar de uma questão para outra.

Em alguns jogos, o candidato que ganha pode te recompensar se você colocou a bandeira dele na sua casa, ou pode te prejudicar se você colocou a bandeira do rival.

Depois de cada jogo, o computador escolhe o vencedor.





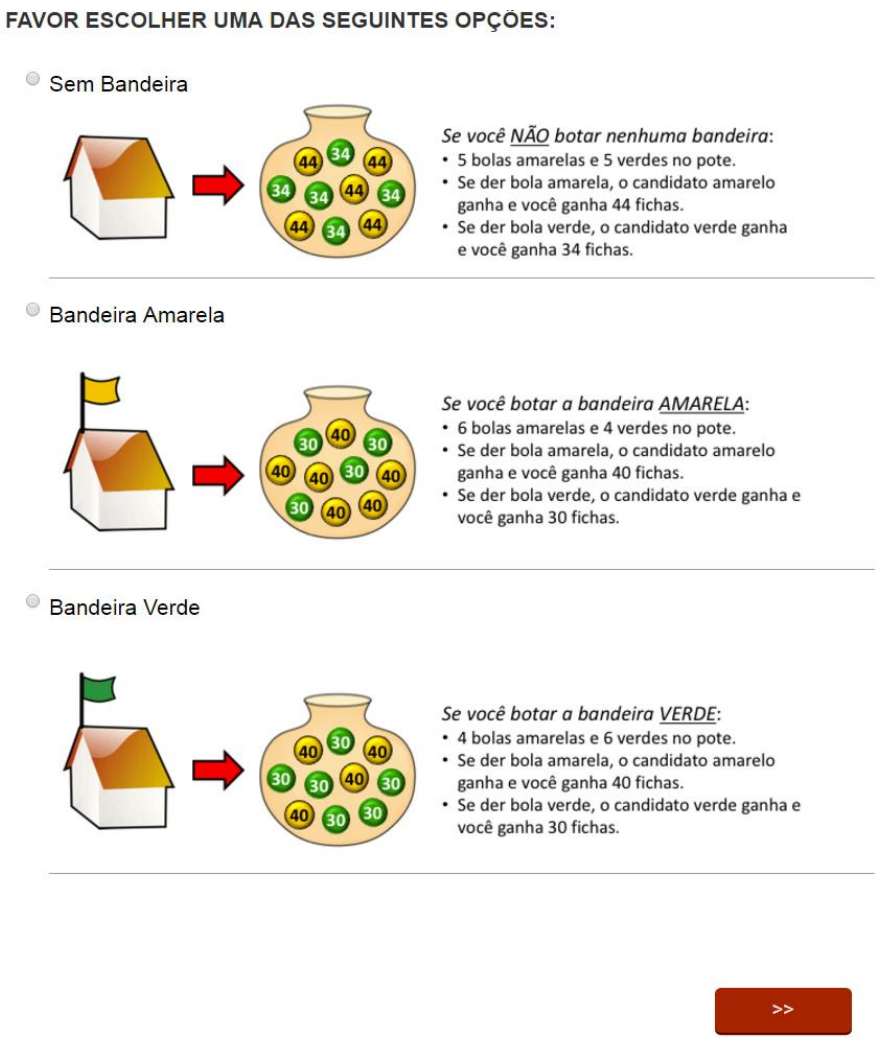
O número de fichas iPhone que você vai ganhar depende de quem ganhar a eleição e da sua decisão sobre a bandeira.

Lembre-se que os candidatos e a bandeira não são reais! Clique quando você estiver preparado para jogar.

>>

TRANSLATION: "Read the instructions carefully. The tickets you earn for each choice can change from one question to another. In some games, the candidate who wins may reward you if you placed his flag on your house, or he may penalize you if you placed his opponent's flag. After each game, the computer chooses the winner. [IMAGE: Yellow Ball Chosen → Yellow Candidate Wins. Green Ball Chosen → Green Candidate Wins.] The number of IPhone tickets you will earn depends on who wins the election and your decision about the flag. Remember that the candidates and the flags are not real! Click when you are ready to play."

Weak Supporter of Candidate A (Partisan Type 3)
No Clientelism Treatment, Options Page

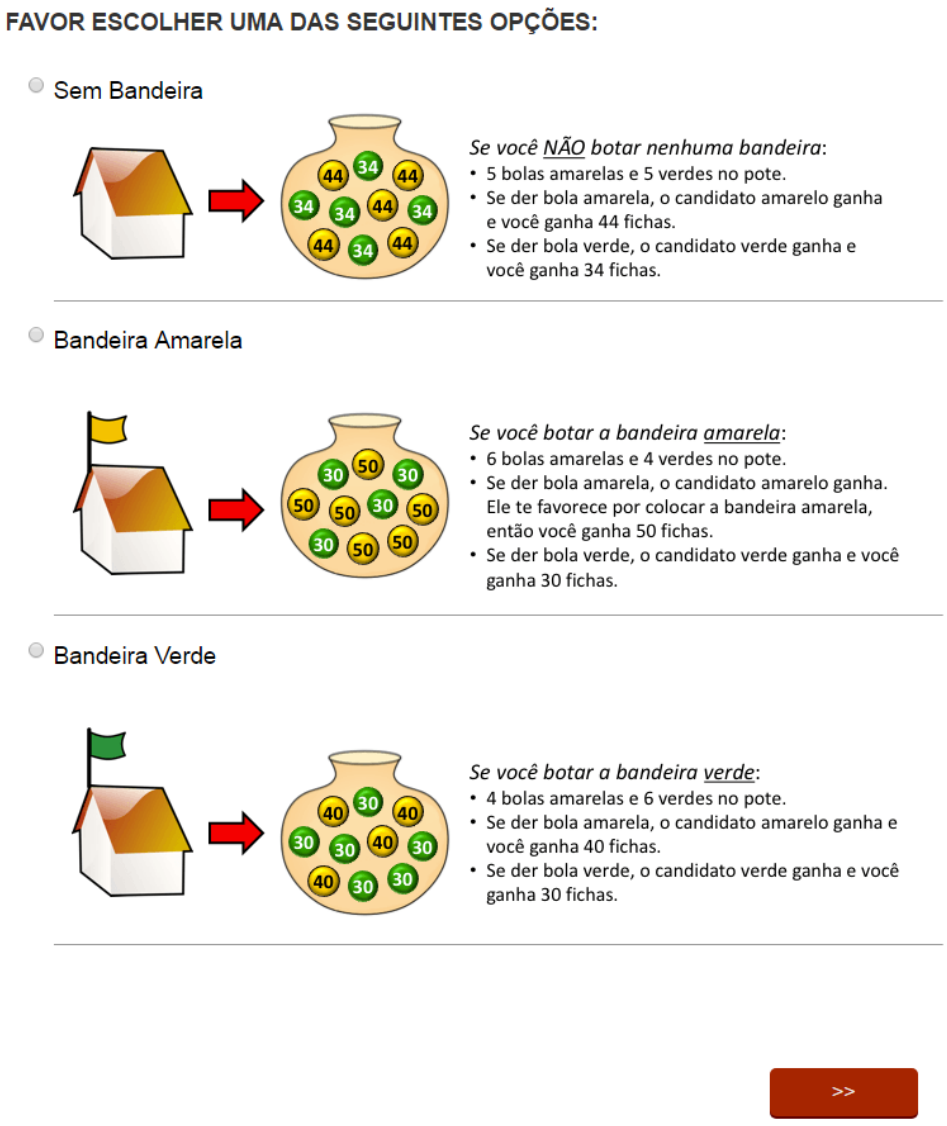


TRANSLATION: "PLEASE CHOOSE ONE OF THE FOLLOWING OPTIONS: [NO FLAG] If you place NO flag: 5 yellow balls and 5 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 44 tickets; If the green ball is chosen, the green candidate wins and you earn 34 tickets. [YELLOW FLAG] If you place a YELLOW flag: 6 yellow balls and 4 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 40 tickets; If the green ball is chosen, the green candidate wins and you earn 30 tickets. [GREEN FLAG] If you place a GREEN flag: 4 yellow balls and 6 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 40 tickets; If the green ball is chosen, the green candidate wins and you earn 30 tickets."

Weak Supporter of Candidate A (Partisan Type 3)
***No Clientelism* Treatment, Outcome Page**
Yellow Flag Chosen, Yellow Candidate Wins

TRANSLATION: "YOU EARNED 40 TICKETS FOR THE IPHONE LOTTERY! [IMAGE: Yellow flag selected, Yellow ball chosen.] You earned 40 tickets! You placed a yellow flag. The computer chose a yellow ball, so the yellow candidate won. [BUTTON: CLICK TO EARN MORE TICKETS!]."

Weak Supporter of Candidate A (Partisan Type 3)
Baseline Clientelism Treatment, Options Page

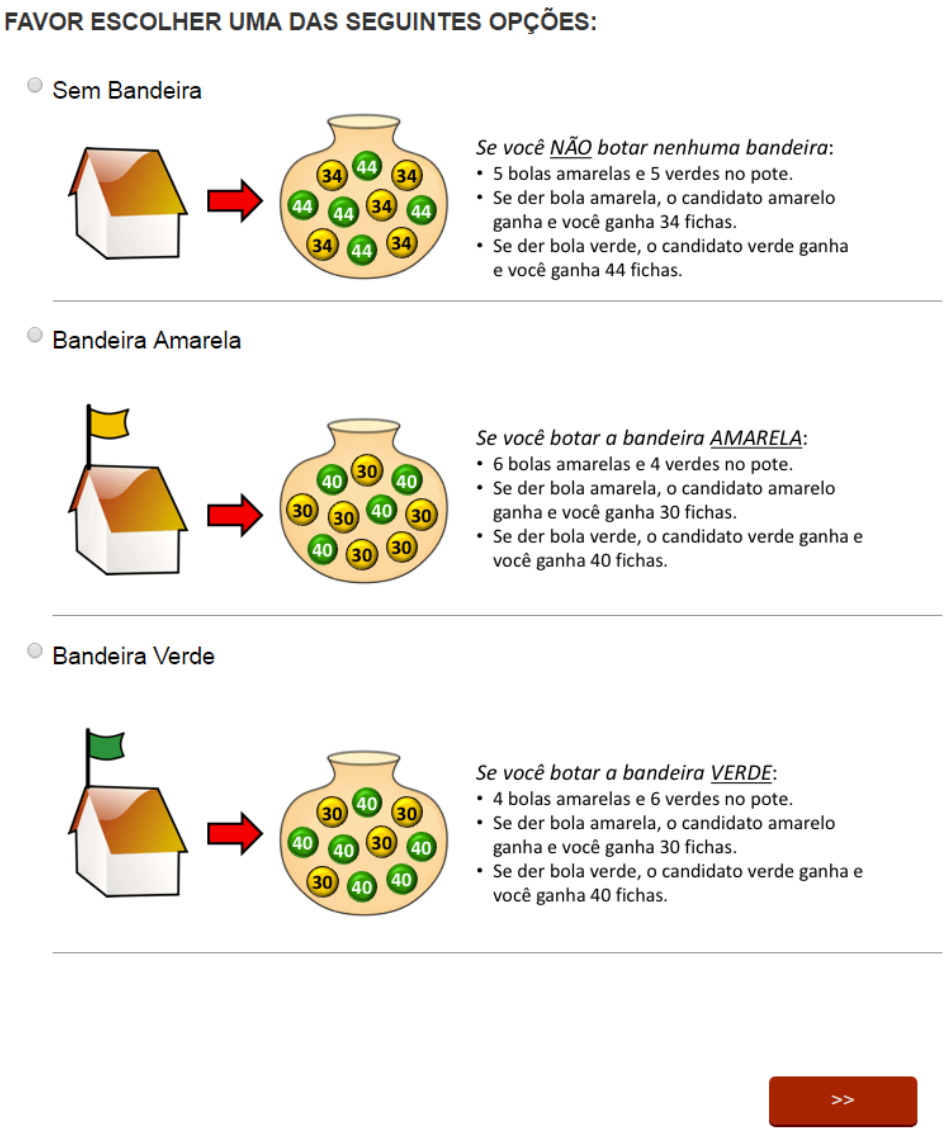


TRANSLATION: "PLEASE CHOOSE ONE OF THE FOLLOWING OPTIONS: [NO FLAG] If you place NO flag: 5 yellow balls and 5 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 44 tickets; If the green ball is chosen, the green candidate wins and you earn 34 tickets. [YELLOW FLAG] If you place a YELLOW flag: 6 yellow balls and 4 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins. He rewards you for placing a yellow flag, so you earn 50 tickets; If the green ball is chosen, the green candidate wins and you earn 30 tickets. [GREEN FLAG] If you place a GREEN flag: 4 yellow balls and 6 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 40 tickets; If the green ball is chosen, the green candidate wins and you earn 30 tickets."

Weak Supporter of Candidate A (Partisan Type 3)
***Baseline Clientelism* Treatment, Outcome Page**
No Flag Chosen, Green Candidate Wins

TRANSLATION: "YOU EARNED 34 TICKETS FOR THE IPHONE LOTTERY! [IMAGE: No flag selected, Green ball chosen.] You earned 34 tickets! You did not place a flag. The computer chose a green ball, so the green candidate won. [BUTTON: CLICK TO EARN MORE TICKETS!]."

Weak Supporter of Candidate B (Partisan Type 5)
No Clientelism Treatment, Options Page

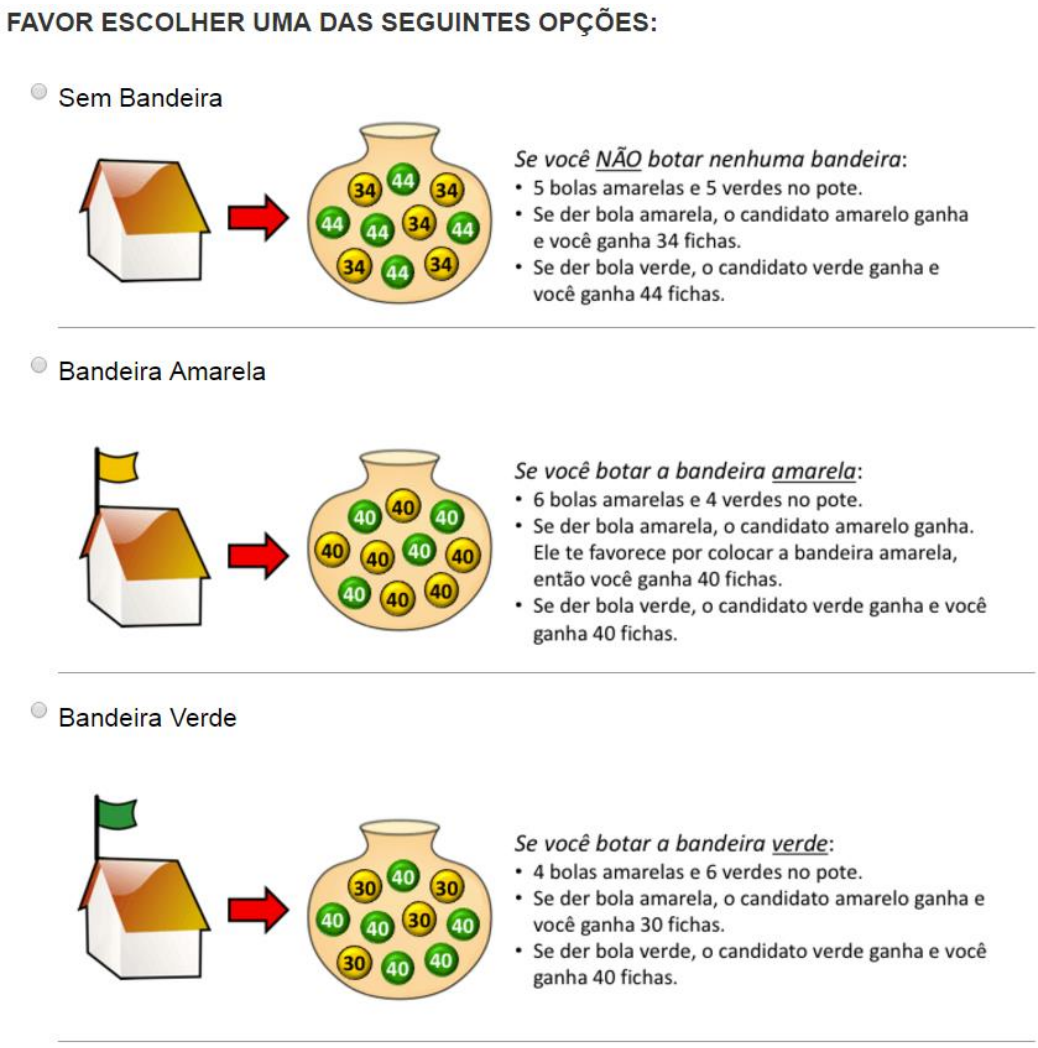


TRANSLATION: "PLEASE CHOOSE ONE OF THE FOLLOWING OPTIONS: [NO FLAG] If you place NO flag: 5 yellow balls and 5 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 34 tickets; If the green ball is chosen, the green candidate wins and you earn 44 tickets. [YELLOW FLAG] If you place a YELLOW flag: 6 yellow balls and 4 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 30 tickets; If the green ball is chosen, the green candidate wins and you earn 40 tickets. [GREEN FLAG] If you place a GREEN flag: 4 yellow balls and 6 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 30 tickets; If the green ball is chosen, the green candidate wins and you earn 40 tickets."

Weak Supporter of Candidate B (Partisan Type 5)
***No Clientelism* Treatment, Outcome Page**
Green Flag Chosen, Yellow Candidate Wins

TRANSLATION: "YOU EARNED 30 TICKETS FOR THE IPHONE LOTTERY! [IMAGE: Green flag selected, Yellow ball chosen.] You earned 30 tickets! You placed a green flag. The computer chose a yellow ball, so the yellow candidate won. [BUTTON: CLICK TO EARN MORE TICKETS!]."

Weak Supporter of Candidate B (Partisan Type 5)
***Baseline Clientelism* Treatment, Options Page**



TRANSLATION: "PLEASE CHOOSE ONE OF THE FOLLOWING OPTIONS: [NO FLAG] If you place NO flag: 5 yellow balls and 5 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 34 tickets; If the green ball is chosen, the green candidate wins and you earn 44 tickets. [YELLOW FLAG] If you place a YELLOW flag: 6 yellow balls and 4 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins. He rewards you for placing a yellow flag, so you earn 40 tickets; If the green ball is chosen, the green candidate wins and you earn 40 tickets. [GREEN FLAG] If you place a GREEN flag: 4 yellow balls and 6 green balls in the jar; If the yellow ball is chosen, the yellow candidate wins and you earn 30 tickets; If the green ball is chosen, the green candidate wins and you earn 40 tickets."

Weak Supporter of Candidate B (Partisan Type 5)
***Baseline Clientelism* Treatment, Outcome Page**
Yellow Flag Chosen, Yellow Candidate Wins

TRANSLATION: "YOU EARNED 40 TICKETS FOR THE IPHONE LOTTERY! [IMAGE: Green flag selected, Yellow ball chosen.] You earned 40 tickets! You placed a yellow flag. The computer chose a yellow ball, so the yellow candidate won. He rewards you for placing a yellow flag, so you earn 40 tickets. [BUTTON: CLICK TO EARN MORE TICKETS!]."

F Description of Fieldwork

Fieldwork on clientelism in Brazil was conducted by the author for over 18 months. Prior to and after the October 2008 municipal elections, a total of 110 formal interviews on clientelism were conducted in the state of Bahia. These formal interviews included 55 interviews of community members and 55 interviews of elites. Each of these interviews was conducted in Portuguese, and lasted an average of 70 minutes. Each interview was taped and transcribed, totaling over 4,500 pages of typed transcripts. In addition, informal interviews were conducted of another 350 citizens and elites, as well as three focus groups of citizens. In addition, this fieldwork was supplemented in Pernambuco in mid-2012 with additional interviews of 16 elites and 6 rural citizens.

All interviews were conducted in small municipalities, as defined by those with 100,000 citizens or fewer. In Brazil, 45 percent of the population lives in municipalities with 100,000 citizens or fewer. In addition, 95 percent of Brazilian municipalities are this size (IBGE 2010). The primary field site, Bahia, is the most populous state in the Northeast region of Brazil with 14.0 million citizens (IBGE 2010). Pernambuco is also in the Northeast region with 8.8 million citizens. The Northeast is the poorest region of Brazil and one of the most unequal regions in the world.

In order to identify potential themes, develop interview questions, and field test the citizen and elite interview protocols, the author began qualitative research in a municipality of 10,000 citizens in central Bahia, where he lived for approximately five months. During this time, a stratified random sample of six additional municipalities was selected to conduct further interviews. Overall, the municipalities spanned each of Bahia's seven "mesoregions," which are defined by Brazil's national census bureau (IBGE) as areas that share common geographic characteristics. The sample was stratified to include municipalities with both first-term and second-term mayors. The population sizes of the seven municipalities selected were approximately: 10,000; 15,000; 30,000; 45,000; 60,000; 80,000, and nearly 100,000.

Within each selected municipality, individuals for community member interviews were selected randomly using stratified sampling. Inclusion / exclusion criteria for individuals included the following: (1) at least sixteen years of age (the voting age in Brazil), (2) had lived in the municipality since the previous mayoral election in 2004, and (3) not a member of the same household as any other interviewee. The sample was stratified to ensure balanced representation across gender, age, and urban/rural mix.

Interview protocols consisted of both open-ended and closed-ended questions. An iterative research design was employed; pertinent themes emerging during thematic analysis were investigated during ongoing interviews. While the original, core questions in the interview protocols were asked of all respondents, probes about emerging themes were included in later interviews.

Including both Bahia and Pernambuco, total interviews included 71 elites (primarily mayors and councilors) and 61 citizens (both urban and rural residents). Total interviewed elites included 14 mayors and former mayors, 34 city councilors, three vice-mayors, six party heads, five heads of social services, and several other elites. Interviews were balanced to include a combination of elites both allied and opposed to the current administration.