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Policy-based abstention in Brazil's 2002 presidential election

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Abstract

This paper implements a unified model of individual abstention and vote choice to analyze policy-based alienation and indifference in Brazil's 2002 presidential election. The results indicate that both alienation and indifference depressed turnout, with indifference contributing slightly more to voter abstention. Also, the determinants of alienation and indifference differed considerably, the former being determined by structural factors such as voters' information and perceived efficacy levels, while the latter was related to short-term aspects such as parties' mobilization efforts. More importantly, evidence shows that while alienation and indifference were strongly influenced by attitudinal and protest variables, they were also affected by citizens' evaluation of candidates' ideological locations. The main conclusion is that abstention in Brazil's 2002 election had a policy-driven component and that spatial considerations played a substantive role in citizens' electoral behavior, a fact that has been overlooked in previous research on the determinants of abstention in Latin America.

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Key words: Abstention, indifference, alienation, unified model

1. Introduction

The effect of candidates' ideological locations on the probability of voting is one of the most appealing and important implications of the spatial voting literature pioneered by Downs (1957). Voters perceive a benefit when their policy preferences are similar to those of the competing candidates and will therefore vote for those candidates who offer policy platforms closer to their own. However, voters might choose not to vote if the perceived benefits from voting for either candidate is very small, or when different candidates offer approximately the same benefit. Consequently, different spatial voting models (Hinich and Ordershook, 1969; Hinich, Ledyard, and Ordershook, 1972; Enelow and Hinich, 1984) have distinguished between indifference-based abstention that occurs when candidates' platforms are too similar to justify the cost of voting, and alienation-based abstention that results when candidates' platforms are too distant from a voter to justify voting costs.

At the empirical level, however, few studies have analyzed the effect of policy-based indifference and alienation. Evidence provided by Zipp (1985), Plane and Gershtenson (2004) and Adams, Dow and Merrill (2006) for the U.S., and Thurner and Eymann (1997) for Germany, indicates that abstention has a substantive policy-based component.[1] Nonetheless, as this review reveals, all empirical studies have been conducted so far in developed democracies with stable and consolidated party

[1] Other studies (e.g., Brody and Page, 1973; Lacey and Burden, 1999) have examined the effect of indifference and/or alienation on voter turnout, but none of them uses spatial measures of these variables.

systems, and most of them have focused on two-candidate elections. Furthermore, empirical tests of hypotheses involving the impact of alienation and indifference on citizens' probabilities of voting have only been conducted for countries with voluntary voting. This paper presents the first analysis of policy-based indifference and alienation abstention in Latin America, using data on Brazil's 2002 presidential election. Brazil has the largest electorate in Latin America, representing 36% of the total electorate in the continent and the largest electorate in the world subject to compulsory voting (International IDEA, 2006). In contrast to the homogeneous European party systems and the U.S. party machines, the party structure and political system in Brazil is highly fragmented and characterized by a low degree of party identification, weak institutionalization and persistent electoral volatility (Moisés, 1993; Mainwaring, 1998; Baker, Ames, and Rennó, 2006). These structural aspects were also present in the 2002 presidential election, marked by high preference volatility among voters and frequent changes in candidates' relative support during the campaign season (Baker et al., 2006).

Hence, this paper offers two important contributions. First, it analyzes the effect of policy-based evaluations of candidates on citizens' probabilities of voting in an emerging democracy whose party system and type of electoral competition differ markedly from those considered in earlier research. This allows for the determination of whether the empirical regularities found in advanced democracies hold for other polities. Second, it examines the impact of policy-based indifference and alienation in an electorate subject to compulsory voting, an institutional arrangement not previously examined. While compulsory voting laws require citizens to show up at the polls, they do not force them to vote for any of the competing candidates: citizens can cast invalid votes, i.e., blank or null ballots, and thus their right not to vote

remains intact (Lijphart, 1997). Also, illegal abstention constitutes a second form of non-voting. Different theories emphasizing the role of socioeconomic, institutional, and protest variables have been proposed to account for invalid voting and electoral absenteeism in Latin America and in compulsory voting systems in general (Power and Roberts, 1995; Lijphart, 1997). However, no work has analyzed the impact of voters' evaluations of competing candidates on these variables. Examining the role of alienation and indifference will help to better understand the relative importance of policy-based abstention in compulsory voting systems and add to the long-standing debate surrounding compulsory voting provisions (Lijhpart, 1997; Franklin, 1999).

In addition, in this paper I develop a new model to analyze alienation and indifference in multi-party electoral races. Among empirical studies on this topic, only Thurner and Eymann (1997) have considered multi-candidate races.[2] However, in their model, only the positions of the two closest candidates affect voters' indifference and alienation thresholds, and they ignore the effect of non-spatial issues on citizens' electoral choices. The model implemented here assumes that both candidates' locations and non-spatial issues affect alienation and indifference, and citizens consider their utility for each of the competing candidates when deciding whether or not to vote.

The remainder of the paper is organized as follows. Section 2 presents the model implemented to analyze policy-based alienation and indifference in Brazil's 2002

[2] While Sanders (1998) analyzes the case of three candidates, he only considers indifference-based abstention, and his definition of indifference and the decision-rule followed by citizens differ from the ones adopted in this paper.

presidential election. Section 3 describes the data and methodology used to estimated the model's parameters. Section 4 presents the most salient results. The main hypothesis of the paper is that abstention in the 2002 election had a policy-driven component and that spatial considerations played a substantive role on citizens' decisions of whether or not to vote. In order to assess the validity of this claim, the parameter estimates are used to address three central questions: a) What were the main determinants of alienation and indifference; b) How did the incidence of alienation and indifference depend on citizens' perceived distance from the candidates; c) What was the relative influence of citizens' policy-based assessments on their electoral choice, compared to socioeconomic, attitudinal and protest variables. Finally, Section 5 concludes.

2. Modeling alienation- and indifference-based abstention

In order to analyze policy-based alienation and indifference in Brazil, I use a "unified model" (Merrill and Grofman, 1999) of abstention and candidate choice in which the decision whether to vote and the decision which candidate to vote for are both included simultaneously. The model specification is grounded in the spatial voting and random utility maximization literature and draws on Adams and Merrill (2003) and Adams et al. (2006), although it is modified and adapted to account for multi-candidate competition characterizing elections in Brazil.

Voters are assumed to have preferences defined over voting for each of the competing candidates and over abstaining. Following spatial theorists, the model assumes that the probability of voting is a function of the perceived distance between citizens' and candidates' ideological locations. Because the information requirements needed to evaluate the candidates on every possible policy dimension are

considerably high, most citizens rely on summary ideological assessments that provide them with "shortcuts" into the opinions and programs of candidates and allow them to cast votes that reflect their ideal issue positions (Downs, 1957; Ordershook, 1970; Hinich and Munger, 1994). Hence, a citizen is more likely to vote for a candidate, the closer the candidate's ideological location is to her own's. In addition, non-spatial elements such as valence issues or partisanship also affect citizens' voting behavior (Enelow and Hinich, 1984; Shepsle, 1991). Therefore, citizen i's utility for candidate j, denoted by $U^i(j)$, is

$$\begin{aligned} U^i(j) &= b_j^i - \beta\left(x_i - c_j\right)^2 + \varepsilon_j^i \qquad j = 1, 2, ...J \\ &= V_j^i + \varepsilon_j^i \qquad\qquad\qquad\qquad j = 1, 2...J \end{aligned} \tag{1}$$

where x_i is voter i's ideological self-placement, c_j is candidate j's ideological placement, β is a parameter indicating the saliency of the ideological dimension, b_j^i is a party identification variable, $V_j^i = b_j^i - \beta\left(x_i - c_j\right)^2$ is the systematic component of i's utility for candidate j and ε_j^i is a random disturbance term.

Abstention in this model may stem from two different sources: a citizen may abstain if she perceives little benefit from either candidate (alienation) or if her utility for the different candidates is approximately the same (indifference). An individual is indifferent if she does not perceive one candidate's position to be significantly closer to her own ideological stance than other candidates' locations (Plane and Gershtenson, 2004), i.e., if she does not perceive substantial differences in utility for the different candidates. Hence, the model assumes that individual i is indifferent if there is no candidate j such that the utility differential between j and all the other

competing candidates is greater than a non-negative indifference threshold $T^i(j)$. That is, i is indifferent if there is no candidate j such that:

$$U^i(j) - U^i(k) > T^i(I) \quad \forall k \neq j \qquad (2)$$

where the indifference threshold is given by

$$\begin{aligned} T^i(I) &= \exp(\beta_I I_i) \\ &= V_I^i \end{aligned} \qquad (3)$$

with I_i a vector of voter attributes expected to influence her turnout decision and β_I a vector of parameters to be estimated.

Also, an individual may abstain if she feels that no candidate will represent her policy preferences; that is, when "even a favorite candidate leaves the voter cold" (Enelow and Hinich, 1984, p. 464). Hence, citizen i is alienated if none of the candidates provides her with a minimum level of utility; i.e., if her utility for all of the competing candidates is less than or equal to an alienation threshold $T^i(A)$:

$$U^i(j) \leq T^i(A) \qquad j = 1, 2, ..J \qquad (4)$$

The alienation threshold is given by

$$\begin{aligned} T^i(A) &= \beta_A A_i + \varepsilon_A^i \\ &= V_A^i + \varepsilon_A^i \end{aligned} \qquad (5)$$

where again A_i is a vector of variables expected to influence voter turnout, β_A are parameters to be estimated, $V_A^i + \beta_A A_i$ is the systematic component of utility and ε_A^i is a random term.[3]

[3] In order to obtain closed form solutions for the choice probabilities of each agent, the number of random error terms in the model cannot exceed $J+1$. Following Sanders (1998),

From (1) - (5), then, citizen i votes for candidate j if

$$V_j^i + \varepsilon_j^i - V_k^i + \varepsilon_k^i > V_I^i \quad \forall k \neq j \quad \text{and} \quad V_j^i + \varepsilon_j^i > V_A^i + \varepsilon_A^i \qquad (6)$$

and abstains if she is indifferent or alienated.

Assuming that the utility errors are distributed type-I extreme value yields closed form solutions for the choice probabilities of citizen i:[4]

$$P^i\left(\text{Vote for candidate } j\right) = \frac{\exp\left(V_j^i\right)}{\exp\left(V_j^i\right) + \exp\left(V_I^i\right)\left[\sum_{k \neq j} \exp\left(V_k^i\right)\right] + \exp\left(V_A^i\right)} \qquad (7)$$

$$P^i\left(\text{Abstain}\right) = 1 - \sum_{j=1}^{J} P^i\left(\text{Vote for candidate } j\right) \qquad (8)$$

$$P^i\left(\text{Indifferent}\right) = 1 - \sum_{j=1}^{J} \frac{\exp\left(V_j^i\right)}{\exp\left(V_j^i\right) + \exp\left(V_I^i\right)\left[\sum_{k \neq j} \exp\left(V_k^i\right)\right]} \qquad (9)$$

$$P^i\left(\text{Alienated}\right) = \frac{\exp\left(V_A^i\right)}{\sum_{j=1}^{J} \exp\left(V_j^i\right) + \exp\left(V_A^i\right)} \qquad (10)$$

Note that, although the error terms for the different candidates and for the alienation threshold are assumed to be independent, the choice probabilities do not

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Adams and Merril (2003) and Merril et al. (2006), I omit the error term in the specification of the indifference threshold.

[4] The derivation of equations (7)-(10) is given in the Appendix.

have the independent of irrelevant alternatives (IIA) property, since the denominators of each choice probability differ.[5]

Estimation is performed through maximum likelihood. The log-likelihood function can be written as:

$$Log-likelihood = \sum_{i=1}^{n}\left[\sum_{j=1}^{J} Y_j^i \log P^i\left(\text{Vote for candidate } j\right) + Y_A^i \log P^i\left(\text{Abstain}\right)\right]$$

where $P^i\left(\text{Vote for candidate } j\right)$ and $P^i\left(\text{Abstain}\right)$ are given by equations (7) and (8) and Y_j^i, Y_A^i equal one for an individual who votes for candidate j and abstains, respectively.

3. Data and methodology

The 2002 presidential election provides an interesting case to examine the relative impact of policy-based indifference and alienation in Brazil. On the one hand, unlike in previous elections, candidates' policy platforms seemed to play a key role on voters' electoral choice, probably at least in part due to an unprecedented media coverage that generated high levels of political interest among the electorate (Canelas, 2002; Carreirão, 2004). On the other hand, popular dissatisfaction with the government and scandals involving some of the candidates reinforced the tendencies towards protest voting and vote switching among the electorate (Carreirão, 2004, Baker et al., 2006).

[5] IIA holds, however, if $\exp\left(V_j^i\right) = \exp\left(V_k^i\right) \quad \forall j,k,\ j \neq k$ (Sanders, 1998).

The data used in the analysis is drawn from the Comparative Study of Electoral Systems (CSES) post-election survey. To the author's knowledge, this is the only publicly available dataset that asks Brazilian respondents to place candidates competing in the 2002 election on an ideological scale. Moreover, the CSES was designed specifically for cross-national application and covers other Latin-American and emerging democracies. Thus the results obtained here can be contrasted with those in other countries.

The dependent variable is based on respondents' self-report of voting, and indicates whether each individual abstained or voted for one of the three main candidates competing in the first-round of the Presidential election: Luiz Inácio Lula da Silva, of the Workers' Party (PT), Jose Serra, of the Brazilian Social Democratic Party (PSDB), and Anthony Garotinho, of the Brazilian Socialist Party (PSB). [6] Candidates whose ideological position was not asked in the survey were not considered in the analysis and respondents who voted for these candidates were deleted from the sample.[7] Since illegal abstention and invalid voting can be thought of as "functional equivalents" of abstention in democracies with voluntary voting (Lavareda, 1991; Power and Roberts, 1995), all respondents admitting they did not vote and those reporting that they cast a blank or null ballot are treated as abstainers.

[6] A second-round run-off between Lula and Serra was conducted 3 weeks after the first round, and Lula became President of the country.

[7] 119 observations were deleted for this reason, corresponding to respondents who voted for Ciro Gomez, the candidate who finished fourth in the electoral contest.

The squared distance between respondents' and candidates' ideological locations in equation (1) is computed using the survey item asking respondents to place themselves and each of the major candidates on a 10-point left-right scale. Candidates' ideological locations are approximated using the mean of respondents' placements of the candidates (Rabinowitz, Macdonald, and Listhaug, 1991; Alvarez, 1998). Party identification is a dummy variable scored 1 if the voter identifies with the candidate's party and 0 otherwise. Table 1 below presents the sample vote share of the different electoral alternatives, including abstention, as well as the candidates' ideological locations and percentage of partisan voters.

[Table 1 here]

The alienation and indifference thresholds in equations (3) and (5) are modeled as functions of socioeconomic, attitudinal, political and protest variables that have been found to affect voter turnout. The socioeconomic variables included in the model are: *Age*; *Gender*, a dichotomous variable coded 1 for male and 0 for female; and *Education*, coded on an eight point-scale ranging from no education to completed university degree. The attitudinal variables are *Political information*, calculated as the number of correct answers provided by the respondent to the three political information items included in the CSES survey; and *Political efficacy*, captured by the respondent's agreement with the statement "Who people vote for makes a difference". I also include *Party contact*, a dummy variable scored at 1 if the respondent was contacted by any of the candidates or parties during the electoral campaign and at 0 otherwise. Based on available empirical evidence (Verba, Nie, and Kim, 1978; Wolfinger and Rosenstone, 1980; Zipp, 1985; Plane and

Gershtenson, 2004), I expect these variables to negatively affect the probability of abstaining.

In addition, previous research (Moisés, 1993; Power and Roberts, 2005) suggests that popular dissatisfaction with the political system and party elites in Brazil tends to increase the percentage of blank and null ballots and illegal abstention. Hence, I include three "protest" variables aimed at capturing respondents' discontentment with the political establishment: *Dissatisfaction with government*, measuring respondents' disapproval of government's performance; *Dissatisfaction with democracy*, capturing respondents' discontent with the democratic process; and *Corruption*, measuring perceived corruption levels among politicians. These variables are obtained from respondents' answers to three four-scale items included in the CSES survey. Since the relevant empirical literature does not distinguish between individual factors affecting indifference from those affecting alienation, I follow Adams et al. (2006) and include all the above mentioned variables in the alienation and indifference thresholds.

The following equations define the specification of respondents' utilities for the different candidates, their indifference thresholds and their alienation thresholds:

$$U^i(j) = \beta_0 + \beta_1(\text{Party identification}) + \beta_2(\text{Ideological distance})^2 + \varepsilon_j^i \qquad j = 1,2,3.$$

$$T^i(I) = \exp\begin{bmatrix} \alpha_0 + \alpha_1(\text{Age}) + \alpha_2(\text{Gender}) + \alpha_3(\text{Education}) + \alpha_4(\text{Information}) + \alpha_5(\text{Efficacy}) + \\ \alpha_6(\text{Party contact}) + \alpha_1(\text{Dissatisfaction with government}) + \\ \alpha_8(\text{Dissatisfaction with democracy}) + \alpha_9(\text{Corruption}) \end{bmatrix}$$

$$T^i(A) = \gamma_1(\text{Age}) + \gamma_2(\text{Gender}) + \gamma_3(\text{Education}) + \gamma_4(\text{Information}) + \gamma_5(\text{Efficacy}) + \gamma_6(\text{Party contact}) + \gamma_7(\text{Dissatisfaction with government}) + \gamma_8(\text{Dissatisfaction with democracy}) + \gamma_9(\text{Corruption}) + \varepsilon_A^i$$

The coefficients for party identification and squared ideological distance, β_1 and β_2, are constrained to be the same across candidates. This corresponds to the assumption that the effect of these factors on citizens' evaluations of the different candidates is the same (Adams et al., 2006).[8] Also, it is necessary to normalize β_0 for one of the candidates (Garotinho).

Estimation was performed in STATA 9. The log-likelihood function was implemented in a STATA ado file and the parameters were estimated using method lf; the likelihood function maximized without difficulty.[9] Based on the point estimates and the variance-covariance matrix of the estimates, the predicted probabilities in (8)–(10) were computed for each respondent using a simulation-based approach (King et al., 2000), and the sample mean of these predicted probabilities was then used to estimate the aggregate rates of alienation, indifference and abstention.

Before presenting the estimation results, it is worth mentioning some of the limitations of the analysis. The main caveat stems from the construction of the dependent variable: as it has been widely recognized, self-reports of voting are

[8] Relaxing this assumption does not significantly change the parameter estimates.

[9] The code is available from the author on request.

affected by perceptions of socially accepted behavior, incorrect recall, and response biases (Silver, Abramson and Anderson, 1986; Belli, Traugott, Young, and McGonagle, 1999). This is reflected in the fact that the percentage of abstainers in the sample (Table 1) is about half of that in the electorate, probably due to effects of social undesirability of non-voting. Although research in the U.S. has shown that substantive conclusions obtained from models estimated using self-reported data do not differ significantly from those using validated data (Katosh and Traugott, 1981; Sigelman, 1982), there is no way to confirm the validity of these findings for the case of Brazil.

Second, the model implemented in this study assumes that voters' electoral choice is mainly driven by their evaluation of the different candidates and their perceptions of how close the candidates' positions are relative to their own. This is in fact the central hypothesis of spatial voting models. However, as noted by Zipp (1985), it might be the case that the causality operates in the inverse direction, i.e., that voters first decided whether or not to vote and which candidate to choose, and then rationalized their choice by placing their chosen candidate closer to their own ideological position. While using the sample mean placement for the candidates as an approximation to their ideological location tends to attenuate the bias introduced by this post-decision rationalization, it is unlikely that this procedure completely eliminates its effect. Nonetheless, this approach has been shown to yield quite accurate estimates of the true position of the candidates (Markus and Converse, 1978; Page, 1978; Aldrich, Sullivan, and Borgida, 1989), and available empirical evidence (e.g., Brody and Page, 1973) suggests that this ex-post rationalization is not important enough to reverse the direction of the causality in the choice process.

4. Empirical results

Table 2 below reports the estimated parameters of the model and their standard errors for the 2002 presidential election in Brazil. Several of the parameters are statistically significant and exhibit signs that are in the expected direction, and a LR test of the joint significance of the variables included in the model indicates that they are significant at the 0.01 level. The goodness-of-fit indices imply a moderately high explanatory power of the variables.

The coefficients for party identification and ideological distance are statistically significant at the 0.01 level. In line with the spatial model of voting, respondents' utilities for a candidate decreased with the (squared) ideological distance and increased when they identified with the candidate's party.[10]

[Table 2 here]

The parameter estimates in Table 2 also show that the determinants of alienation and and indifference differ considerably. Older voters were more likely to be alienated in the 2002 presidential election; however, age had no statistically significant effect on the probability of being indifferent. Among the attitudinal variables, more informed respondents and those with higher perceived efficacy levels were less likely to be alienated; however, these variables had no systematic effect on the probability of being indifferent. The opposite is true for the effect of parties' mobilization campaigns: respondents who were contacted by parties or candidates

[10] The strong and significant effects of ideological distance and party identification hold even if these coefficients are not constrained to be the same across candidates.

during the electoral campaign were less likely to be indifferent, but this variable had no systematic effect on alienation. Hence, while alienation was closely related to structural, long-term factors such as respondents' information levels, perceived efficacy and political experience, indifference was more influenced by short-term aspects such as candidates' mobilization efforts.

Among "protest variables", only the respondents' perceived level of political corruption is statistically significant at the usual confidence levels: higher perceived levels of corruption increased the probability of being both indifferent and alienated. This result is in line with previous evidence regarding the effect of political corruption on citizens' political behavior in Brazil (Moisés, 1993) and indicates that the widespread levels of political corruption perceived by the public opinion might lead some voters to disqualify all electoral alternatives and discredit democratic politics as a whole. This might entail potentially dangerous consequences for the consolidation of representative institutions and a republican political culture in an emerging democracy such Brazil's (Moisés, 1993; Canache and Alison, 2005).

Table 3 reports the rates of alienation, indifference and abstention for the whole sample and discriminated by relevant socioeconomic, attitudinal and protest variables. The results indicate that both alienation and indifference depressed turnout in the 2002 presidential election, with indifference contributing slightly more to voter abstention. Also, the incidence of alienation and indifference varied considerably with the individual characteristics of the respondents. As expected, alienation and indifference were higher for respondents with lower levels of political efficacy and higher perceived levels of corruption, for those not contacted by the parties or candidates and for those who expressed no partisan preference. Two remarkable results that emerge from Table 3 are the high incidence of indifference

among more educated and informed respondents and the high rate of alienation among older respondents. As argued below, these findings are related to the fact that more educated and informed respondents in the sample exhibit moderate ideological positions, while the distribution of older respondents is skewed to the right of the ideological scale.

[Table 3 here]

Next, I analyze the effect of the perceived ideological distance between respondents and candidates on alienation and indifference. Figure 1- (a) plots the abstention rate as a function of respondents' ideological self-placement in the left-right scale, decomposed by type of abstention: alienation-based only, indifference-based only, and both. Figure 1-(b) complements this information, plotting the incidence of alienation and indifference as a function of respondents' ideological self-placement. In both cases, candidates' ideological placements are also plotted.

Some interesting patterns emerge from these figures. First, abstention increases as one moves to the right of the most right-wing candidate (Serra) and to left of the most left-wing candidate (Lula). In fact, respondents located at the right-wing extreme of the ideological scale exhibit the highest propensities to abstain. However, abstention also rises among respondents situated towards the middle of the scale, especially among those whose ideological self-placement locates them between Lula and Garotinho. Figure 1-(b) also shows that the relative incidence of alienation and indifference abstention varies according to respondents' self placement. While the propensity to abstain for respondents situated at the extremes of the ideological scale

was mainly driven by alienation and rose with the distance to the closest candidate, indifference was predominant among more "centrists" voters, and its incidence tended to increase the smaller the difference in the distance between the respondents and the competing candidates. In this sense, the fact that a majority of respondents in the sample hold moderate positions explains the higher incidence of indifference vis-à-vis alienation reported in Table 3.

[Figure 1 here]

These results show that respondents' tendencies to abstain in the 2002 presidential election were clearly related to their perceived distances from the candidates. Figure 2 explores this issue further: Figure 2-(a) plots respondents' probabilities of being alienated as a function of their distance to the closest candidate, while Figure 2-(b) plots the probabilities of being indifferent as a function of the difference in the distance between respondents and the closest and most distant candidates.

Both figures confirm the substantive conclusions regarding the effect of the perceived ideological distance between respondents and candidates on alienation and indifference: respondents' tendencies to abstain due to alienation rose with the distance between them and the closest candidate, while the predisposition to abstain due to indifference increased as the difference in the distance between respondents

and the closest and most distant candidates was reduced.[11] Thus, although the coefficient estimates reported in Section 4.1 indicate that attitudinal, political and "protest" variables were important determinants of alienation and indifference in the Brazilian 2002 presidential election, the empirical evidence presented here suggests that these variables do not account for the whole story, and that respondents' evaluation of candidates' platforms also played a significant role on their decision to abstain.

[Figure 2 here]

In order to analyze the relative impact on abstention of voter's policy-based assessments against alternative factors considered in the literature, I compute the change in the aggregate rate of abstention due to variations in respondents' socioeconomic, attitudinal and protest variables and in their ideological distance from the candidates. For each respondent in the sample, the variable whose effect is analyzed is moved one unit below to one unit above its actual value, holding all other variables at their observed levels. Table 4 reports the resulting changes in the rate of abstention.[12]

[11] Using alternative indicators to measure the impact of ideological distance on indifference (e.g., taking the difference in the distance between the respondent and the two closest candidates) does not substantially alter the results presented in Figure 2-(b).

[12] In the case of the two binary variables, gender and mobilization, the effect is measured as a change from 0 to 1 for each respondent in the sample.

[Table 4 here]

The results of Table 4 indicate that changes in citizens' perceived distance from the candidates had a relatively low effect on the probability of abstaining, compared to the impact of similar changes in socioeconomic, attitudinal and protest variables. Moving the ideological distance from each candidate one percent below to one percent above its actual value for each respondent in the sample leads to an increase of 0.73 percentage points in the rate of abstention. Similar changes in the perceived levels of efficacy and corruption change the aggregate likelihood of abstaining by 6.12 and 8.81 percent, respectively. Hence, although the relatively low influence of policy-based assessments on abstention can in part be explained by the counterbalancing effect of ideological distance on alienation and indifference, evidence indicates that abstention was mainly influenced by citizens' levels of political information and perceived efficacy, by their discontentment with the political elites and by parties' canvassing efforts.

However, spatial issues did play a substantial role in citizens' electoral behavior on the 2002 election. Including the ideological distance variables in the unified model of abstention and candidate choice substantially increases the explanatory power of the model: a LR-test leads to reject the hypothesis that the coefficients of ideological distance are all zero at the 0.01 level and, in fact, both the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) indicate that a specification containing only the ideological distance variables should be preferred to models containing only socioeconomic, attitudinal or protest variables (Table 5).

[Table 5 here]

The role played by ideological considerations on citizens' decisions of whether to vote and for which candidate to vote was in fact reflected in Lula's successful 2002 campaign. One of the most salient features of the campaign was its emphasis on conveying an image of political moderation and the adoption of more "centrist" political stances that contributed to his electoral success (Carreirão, 2004; Samuels, 2004). Although it is not possible to formally test this hypothesis with the available data, a simple exercise of shifting the ideological location of Lula 1 unit to the left while keeping the position of the other candidates constant leads to an increase in the rate of abstention of 2.11 percent and a decline in Lula's vote share of almost 2 percentage points, suggesting that this "move to the center" resulted in non-negligible electoral payoffs for the PT.

5. Concluding remarks

Although the spatial voting literature has long ago distinguished between policy-based alienation and indifference as potential causes for abstention, empirical tests of alienation and indifference have been scarce and have focused exclusively on developed democracies. This paper presents the first empirical study of the determinants of indifference and alienation and their relative incidence on abstention in an emerging democracy, analyzing the 2002 presidential election in Brazil.

The evidence reported in Section 4 indicates that both indifference and alienation contributed to increase abstention in the 2002 election, with indifference accounting for slightly more than 50% of the rate of abstention. The results reveal significant differences between the determinants of alienation and indifference: the former was linked to structural, long-term phenomenon factors, such as citizens' information levels, perceived efficacy and political experience, while the latter was strongly

related to short-term factors such as candidates' mobilization strategies. Among the "protest" variables, only the perceived level of corruption had a positive and statistically significant effect on alienation- and indifference-based abstention. As a result, the incidence of indifference and alienation varied considerably with respondents' individual attributes.

The most important finding of this paper is that although alienation and indifference were strongly influenced by attitudinal and "protest" variables (in particular, the perceived levels of corruption among political elites), they were also affected by citizens' evaluation of candidates' ideological locations. In the words of Plane and Gershtenson (2004), while some abstainers were simply uninformed, apathetic or expressed their discontentment with the political elite, others evaluated the different alternatives and took into account the relative benefits of voting for the competing candidates in their decision-making process. This result coincides with previous empirical evidence for developed democracies and indicates that even in a context of weakly rooted parties and high preference volatility such as the one prevailing in Brazil, abstention had a policy-based component. In fact, ideological and policy considerations played a substantial role in explaining citizens' electoral behavior in the 2002 presidential election in Brazil.

Underscoring the importance of citizens' evaluations of candidates' platforms in their probability of voting constitutes the major contribution of this paper, since previous research on the determinants of abstention in Latin America had only considered the effect of socioeconomic, institutional and protest variables, leaving aside spatial considerations that have been proven central to the understanding of electoral politics in developed democracies. In view of the evidence presented in this

paper, such spatial considerations also play a potentially relevant role in other political and institutional contexts.

6. Tables and graphs

Table 1

Candidates' sample vote share, ideological location and partisanship

Alternative	Voter share	Ideological location	% of partisan voters
Lula (PT)	52.16	3.45	9.16
Serra (PSDB)	20.78	6.65	3.10
Garotinho (PSB)	12.77	5.89	0.29
Abstention	14.29		

Table 2

Parameter estimates and standard error (in parenthesis)

Independent variable	Candidate	Indifference	Alienation
Party identification	1.38*** (0.17)		
Ideological distance	-0.02*** (0.00)		
Age		-0.25 (0.19)	0.54*** (0.22)
Gender		0.20 (0.27)	-0.09 (0.39)
Education		-0.00 (0.07)	0.05 (0.09)
Information		0.15 (0.23)	-0.86*** (0.28)
Efficacy		-0.09 (0.11)	-0.27*** (0.13)
Party contact		-0.73** (0.36)	-0.30 (0.39)
Dissatisfaction with government		-0.01 (0.19)	0.26 (0.17)
Dissatisfaction with democracy		0.05 (0.15)	-0.19 (0.24)
Corruption		0.65*** (0.24)	0.41*(0.21)
Intercept		-0.04 (0.85)	0.54***(0.22)
Log Likelihood: - 1587.56 LR Statistic (χ^2 with 20 d.o.f.): 170.02* Pseudo-R^2=0.32			
% Correctly predicted by alternative[a] (vs. Null Model[b]): da Silva: 53.38 (52.16) ; Serra: 63.33 (0); Garotinho: 100 (0); Abstention: 38.89 (0).			
Number of Observations: 1386			
Significance levels (two tailed): *** $p<0.01$, ** $p<0.05$, * $p<0.10$			

[a] The percentage of correct predictions for each alternative is computed as the number of correct predictions divided by the total number of predictions for that alternative.

[b] The null model predicts that the dependent variable for each observation will take the value of the most common outcome in the sample.

Table 3

Aggregate proportion of alienation, indifference and abstention

		Alienated only	Indifferent only	Alienated and indifferent	Abstention rate
Total		**7.12 (3.96, 11.05)**	**8.36 (5.17, 12.44)**	**1.10 (0.80, 1.45)**	**16.58 (14.43, 19.10)**
Age	18-25	3.59 (0.94, 7.02)	11.64 (7.53, 16.50)	0.83 (0.43, 1.30)	16.05 (13.03, 19.84)
	> 65	17.06 (10.38, 24.59)	5.08 (1.26, 10.76)	1.79 (0.72, 3,38)	23.94 (19.01, 29.58)
Education	None	13.64 (9.00, 18.40)	5.50 (2.11, 10.10)	1.67 (0.75, 2.96)	20.81 (17.30, 24.44)
	University	6.28 (2.71, 10.88)	7.90 (3.95, 12.74)	0.93 (0.50, 1.50)	15.11 (11.38, 19.37)
Information	Lowest	16.04 (10.15, 22.63)	5.89 (1.71, 11.39)	2.10 (1.00, 3.55)	24.03 (19.82, 28.75)
	Highest	2.68 (0.64, 5.44)	10.37 (7.40, 13.76)	0.56 (0.22, 1.01)	13.62 (10.99, 16.53)
Efficacy	Lowest	14.14 (7.14, 21.70)	11.20 (4.82, 19.87)	3.06 (1.86, 4.48)	28.40 (23.01, 34.26)
	Highest	6.37 (3.26, 10.01)	7.69 (4.59, 11.59)	0.82 (0.58, 1.09)	14.88 (12.68, 17.35)
Party contact	No	7.70 (3.77, 12.31)	11.26 (7.02, 16.30)	1.61 (1.16, 2.14)	20.57 (17.87, 23.57)
	Yes	6.48 (3.51, 9.80)	5.64 (2.75, 9.36)	0.60 (0.37, 0.90)	12.72 (10.48, 15.35)
Perceived corruption					
	Lowest	7.38 (3.44, 12.25)	1.71 (0.38, 3.55)	0.16 (0.04, 0.33)	9.26 (5.64, 13.64)
	Highest	8.26 (4.14, 13.17)	11.22 (6.86, 16.48)	1.65 (1.22, 2.15)	21.14 (18.41, 24.43)
Partisanship	Independents	7.61 (4.09, 12.04)	8.62 (5.13, 12.59)	1.15 (0.85, 1.50)	17.38 (15.12, 20.05)
	Partisans	6.03 (3.34, 9.34)	7.32 (4.45, 10.67)	0.84 (0.59,1.11)	14.19 (12.20, 16.58)

Note: The 90 percent confidence intervals are reported in parenthesis.

Figure 1

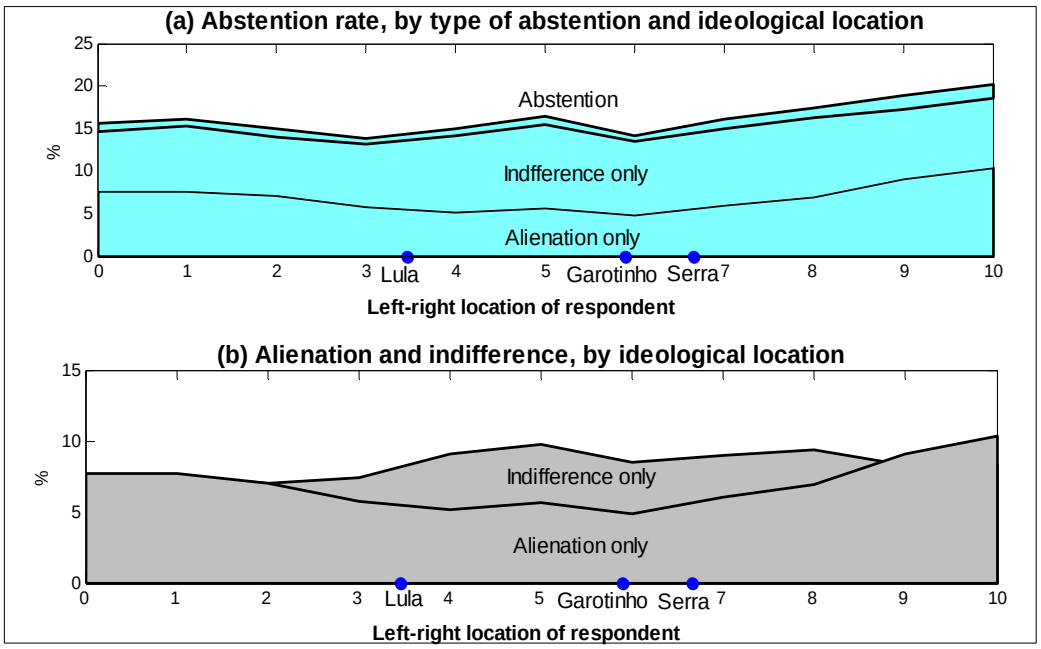
(a) Abstention rate, by type of abstention and ideological location
25
20
15
10
5
0
%
Abstention
Indfference only
Alienation only
0 1 2 3 Lula 4 5 Garotinho Serra 7 8 9 10
Left-right location of respondent
(b) Alienation and indifference, by ideological location
15
10
5
0
%
Indifference only
Alienation only
0 1 2 3 Lula 4 5 Garotinho Serra 7 8 9 10
Left-right location of respondent

Figure 2

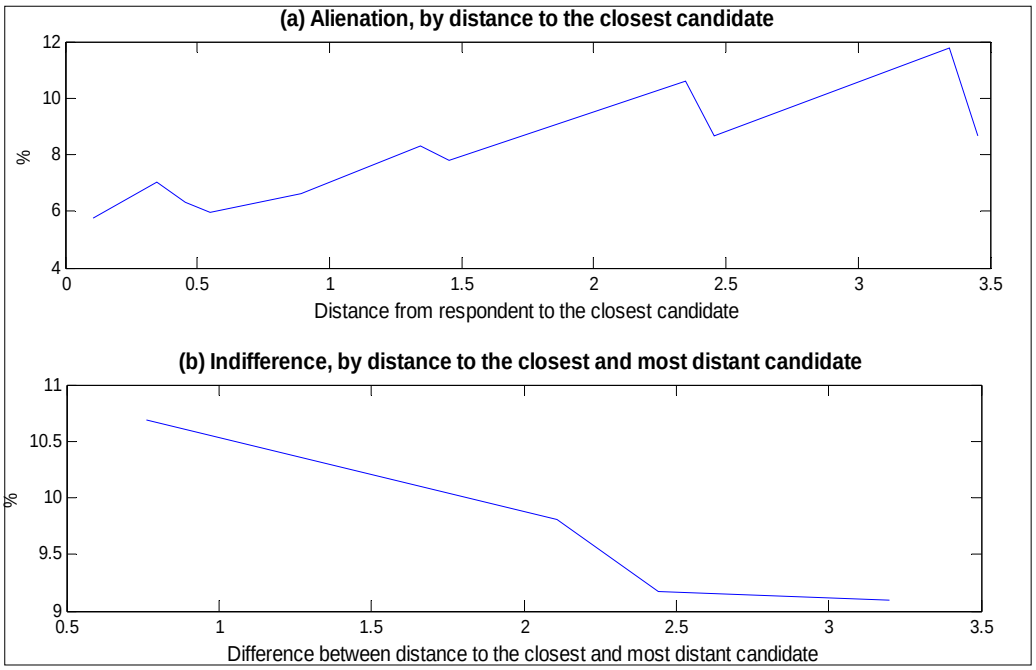
(a) Alienation, by distance to the closest candidate
%
12
10
8
6
4
0
0.5
1
1.5
2
2.5
3
3.5
Distance from respondent to the closest candidate
(b) Indifference, by distance to the closest and most distant candidate
%
11
10.5
10
9.5
9
0.5
1
1.5
2
2.5
3
3.5
Difference between distance to the closest and most distant candidate

Table 4

Effect of changes in different variables on the rate of abstention

Independent variable	**Change in abstention rate (in percentage points)**
Age	2.52
Gender	1.21
Education	0.58
Information	-6.12
Efficacy	-2.75
Party contact	-6.96
Dissatisfaction with government	2.74
Dissatisfaction with democracy	0.24
Corruption	8.81
Ideological distance	0.73

Table 5

Comparison of alternative unified models of abstention and candidate choice

Model	AIC[b]	BIC[b]
Only socioeconomic variables[a]	-1651.75	-1656.89
Only attitudinal variables[a]	-1643.71	-1648.85
Only protest variables[a]	-1636.27	-1641.41
Only ideological distance variables[a]	-1630.56	-1632.84

[a] Each model contains party identification variables.

[b] AIC and BIC are defined as:

$$AIC = LL\left(\hat{\theta}\right) - k\,,\ BIC = LL\left(\hat{\theta}\right) - \frac{1}{2}k \times n \times \log(n)\,,$$

where k = number of regressors, n = number of observations.

7. Appendix: Derivation of choice probabilities

From equation (6), citizen i votes for candidate j if

$$V_j^i + \varepsilon_j^i - V_k^i + \varepsilon_k^i > V_I^i \quad \forall k \neq j \quad \text{and} \quad V_j^i + \varepsilon_j^i > V_A^i + \varepsilon_A^i .$$

Therefore,

$$\begin{aligned} P^i\left(\text{Vote for candidate } j\right) &= P\left(V_j^i + \varepsilon_j^i - V_k^i - \varepsilon_k^i > V_i^I \ \ \forall k \neq j, V_j^i + \varepsilon_j^i > V_A^i + \varepsilon_A^i\right) \\ &= P\left(\varepsilon_k^i < \varepsilon_j^i + V_j^i - V_k^i - V_i^I \ \ \forall k \neq j, \varepsilon_A^i < \varepsilon_j^i + V_j^i - V_A^i\right) \end{aligned} \tag{A.1}$$

Assuming that $\varepsilon_j^i,\ j = 1,....J$ and ε_A^i are random with independent standard extreme value distribution of type I, we have:

$$P^i\left(\text{Vote for candidate } j\right) = \int_R f\left(\varepsilon_j^i\right) \int\int ... \int_{\varepsilon_k^i < \varepsilon_j^i + V_j^i - V_k^i - I_i, k \neq j} \prod_{k \neq j} f\left(\varepsilon_k^i\right) \int_{\varepsilon_A^i < V_j^i + \varepsilon_j^i - A_i} f\left(\varepsilon_A^i\right) \ d\varepsilon_1^i ....d\varepsilon_J^i d\varepsilon_A^i$$

$$= \int_R f\left(\varepsilon_j^i\right) \ \left(\prod_{k \neq j} F\left(\varepsilon_j^i + V_j^i - V_k^i - V_I^i\right)\right) \ F\left(V_j^i + \varepsilon_j^i - V_A^i\right) \ d\varepsilon_j^i$$

and using the expressions for the pdf and cdf of the extreme value distribution:[13]

$$P^i\left(\text{Vote for candidate } j\right)$$

$$= \int_R \exp\left(-\varepsilon_j^i\right) \ \exp\left[-\exp\left(-\varepsilon_j^i\right)\right] \exp\left[-\sum_{k \neq j} \exp\left(-\varepsilon_j^i - V_j^i + V_k^i + V_I^i\right)\right] \exp\left[-\varepsilon_j^i - V_j^i + V_A^i\right] \ d\varepsilon_j^i$$

$$= \int_R \exp\left(-\varepsilon_j^i\right) \ \exp\left[-\exp\left(-\varepsilon_j^i\right)\left(1 + \sum_{k \neq j} \exp\left(-V_j^i + V_k^i + V_A^i\right) + \exp\left(-V_j^i + V_A^i\right)\right)\right] d\varepsilon_j^i$$

[13] $f\left(\varepsilon\right) = \exp\left(-\varepsilon\right) \ \exp\left[-\exp\left(-\varepsilon\right)\right],\ F\left(\varepsilon\right) = \exp\left[-\exp\left(-\varepsilon\right)\right]$

Denoting:

$$\lambda = \log\left(1 + \sum_{k \neq j} \exp\left(-V_j^i + V_k^i + I_i\right) + \exp\left(-V_j^i + A_j^i\right)\right) \qquad \text{(A.2)}$$

we can write the above equation as:

$$\begin{aligned} P^i\left(\text{Vote for candidate } j\right) &= \int_R \exp\left(-\varepsilon_j^i\right)\, \exp\left[-\exp\left(-\varepsilon_j^i\right)\, \exp\left(\lambda\right)\right] d\varepsilon_j^i \\ &= \int_R \exp\left(-\varepsilon_j^i\right)\, \exp\left[-\exp\left(-\varepsilon_j^i + \lambda\right)\,\right] d\varepsilon_j^i \end{aligned} \qquad \text{(A.3)}$$

Using the change of variable:

$$\begin{aligned} x &= \varepsilon_j^i - \lambda, \\ dx &= d\varepsilon_j^i \end{aligned}$$

equation (A.2) becomes:

$$\begin{aligned} P^i\left(\text{Vote for candidate } j\right) &= \int_R \exp\left(-x - \lambda\right)\, \exp\left[-\exp\left(-x\right)\right] dx \\ &= \exp\left(-\lambda\right) \int_R \exp\left(-x\right)\, \exp\left[-\exp\left(-x\right)\right] dx \end{aligned} \qquad \text{(A.4)}$$

and since $\exp\left(-x\right)\, \exp\left[-\exp\left(-x\right)\right]$ is the pdf of a variable x with extreme value (type I) distribution, we have that:

$$P^i\left(\text{Vote for candidate } j\right) = \exp\left(-\lambda\right)$$

and from equation (A.2):

$$\begin{aligned} P^i\left(\text{Vote for candidate } j\right) &= \frac{1}{1 + \sum_{k \neq j} \exp\left(-V_j^i + V_k^i + I_i\right) + \exp\left[-V_j^i + A_j^i\right]} \\ &= \frac{\exp\left(V_j^i\right)}{\exp\left(V_j^i\right) + \exp\left(I_i\right) \sum_{k \neq j} \exp\left(V_k^i\right) + \exp\left(A_j^i\right)} \end{aligned}$$

which is equation (7) in the model. Equation (8) follows immediately.

Analogously, we have that

$$\begin{aligned} P\left(U_j^i - U_k^i > T^i\left(I\right)\ \forall k \neq j\right) &= P\left(V_j^i + \varepsilon_j^i - V_k^i - \varepsilon_j^i > V_I^i\ \forall k \neq j\right) \\ &= P\left(\varepsilon_j^i < \varepsilon_j^i + V_j^i - V_k^i - V_I^i\ \ \forall k \neq j\right) \\ &= \frac{\exp\left(V_j^i\right)}{\exp\left(V_j^i\right) + \exp\left(V_I^i\right)\sum_{k\neq j}\exp\left(V_k^i\right)} \end{aligned}$$

and therefore, from the definition of indifference given in equation (2):

$$P^i\left(\text{Indifferent}\right) = 1 - \sum_{j=1}^{J} \frac{\exp\left(V_j^i\right)}{\exp\left(V_j^i\right) + \exp\left(V_I^i\right)\sum_{k\neq j}\exp\left(V_k^i\right)}$$

which is equation (9) in the model.

Finally, from equation (4), the probability that citizen i is alienated is:

$$\begin{aligned} P^i\left(\textit{Alienated}\right) &= P\left(V_j^i + \varepsilon_j^i \leq V_A^i + \varepsilon_A^i,\quad j = 1, 2....J\right) \\ &= P\left(\varepsilon_j^i \leq \varepsilon_A^i + V_A^i - V_j^i,\ j = 1, 2....J\right) \end{aligned}$$

Therefore

$$\begin{aligned} P^i\left(\text{Alienated}\right) &= \int_{\text{R}} f\left(\varepsilon_A^i\right) \int\int ..... \int_{\varepsilon_j^i < \varepsilon_A^i + V_A^i - V_j^i,\, j=1,....J} \prod_{j=1}^{J} f\left(\varepsilon_j^i\right) d\varepsilon_1^i ... d\varepsilon_J^i d\varepsilon_A^i \\ &= \int_{\text{R}} f\left(\varepsilon_A^i\right)\ \prod_{j=1}^{J} F\left(\varepsilon_A^i + V_A^i - V_j^i\right) d\varepsilon_A^i \end{aligned}$$

and a procedure similar to the one follow to derive equation (7) yields:

$$P^i\left(\text{Alienated}\right) = \frac{\exp\left(V_A^i\right)}{\sum_{j=1}^{J}\exp\left(V_j^i\right) + \exp\left(V_A^i\right)}$$

which is equation (10) in the model.

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