

# Too Much Choice? Abstention Rates, Representation and the Number of Candidates

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March 27, 2012

## **Abstract**

Increasing district magnitude expands voters' choice sets and increases the probability that one of the candidates in a voter's district will be a good match for him or her. As the number of parties and candidates increases, a wider range of issue positions are represented and ethnic and political minorities are more likely to find representation. On the other hand, increasing the number of candidates in a district can make choice-making more difficult for voters and may deter some voters from voting. Using data from a survey experiment conducted in São Paulo, Brazil, I find that votes are significantly more likely to abstain when they are presented with more candidates and that parties do little to mitigate this effect. This finding provides evidence of the cognitive costs for voters that are inherent to many electoral systems and highlights a trade-off between representation and the ability of voters to make choices.

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\*The author thanks Eduardo Sato, Jaqueline Zulini, Marina Marçola, and Juliana Bueno for many hours of hard work implementing the survey. Funding was provided by the Tinker Foundation and the Center for Iberian & Latin American Studies (CILAS) at UC San Diego.

# Introduction

A common observation about elections in two party systems is that they often force voters to choose between two or three candidates, none of whom is a good fit for their preferences. In U.S. presidential elections, for example, many voters find themselves selecting the “least bad” of the candidates fielded by the two major parties. Thomas Friedman, a Pulitzer prize-winning journalist, recently wrote that the U.S. political system, “leaves you wishing that we had more options today than our two-party system is putting forward” (Friedman, 2011). The limitations of two party systems were even portrayed in an episode of *The Simpsons* which parodied the 1996 presidential election. When it is revealed in the episode that the bodies of Bill Clinton and Bob Dole have been taken over by aliens, one of the aliens proclaims, “It’s true, we are aliens. But what are you going to do about it? It’s a two-party system; you have to vote for one of us” (Anderson, 1996).

The obvious remedy for this problem is to adopt electoral rules that increase the number of parties and candidates. Increasing district magnitude ( $M$ ), for example, can provide voters with a more representative pool of candidates. As  $M$  increases, candidates and parties will become more ideologically dispersed and occupy narrower ideological spaces, thereby reducing the average distance between any given voter and the candidate to which they are most ideologically proximate (Cox, 1997; Persson and Tabellini, 2005). Increasing  $M$  can also lead to greater inclusion of ethnic and political minorities who are more likely to be represented as the number of parties and candidates seeking election increases (Taagepera, 2007). Providing voters with more choices in elections can thus increase the likelihood that they will find candidates and parties who can provide them with better substantive and descriptive representation.

Although this logic is compelling, and the thought of more candidates appealing to voters and political scientists, for many voters, less choice may be more. In this paper, I identify an overlooked cost associated with providing voters with more choice. As the number of parties and candidates competing in elections increases, some voters will abstain rather than

selecting representatives. Voters may find themselves overwhelmed by choice and unable or unwilling to identify quality representatives when presented with many options. For many voters then, the enhanced representation which more parties and candidates can provide may be lost if they chose not to vote. This cost of providing more choice is fairly well-established in consumer choice and psychology but has heretofore received little attention in political science.

In this paper, I present the first test of the impact of choice set size on voter participation. I use data from a survey experiment conducted in São Paulo, Brazil to test for a relationship between the number of choices available to voters and voter turnout. I find that increases in the number of candidates lead to a substantial increase in abstention rates. Moreover, I find that even a very modest increase in the number of candidates has a significant impact on participation. Even at levels well within the “electoral sweet spot” that others have argued maximizes representation and accountability, many voters are led to abstain rather than select candidates (Carey and Hix, 2011). I also find that party labels do little to mitigate this effect or facilitate choice as the number of candidates increases.

The paper proceeds as follows. First I discuss the theoretical motivation for the project and discuss my primary hypotheses. Then I provide some background on legislative elections in Brazil and describe my experimental design. The next section presents results and the final section discusses those results and concludes.

## **The Electoral Choice Set Problem**

Scholarly work is fairly clear on the benefits of providing voters with more choice. Higher district magnitudes will lead more candidates and parties to enter competition and those parties will be more ideologically dispersed, and will occupy narrower ideological spaces, thereby reducing the average distance between any given voter and the candidate to which they are most ideologically proximate (Cox, 1997; Persson and Tabellini, 2005). Proportional

representation (PR) and higher magnitude districts are also more likely to yield multiparty legislatures that represent a wider range of prefer

This paper focuses on a heretofore under-explored trade-off inherent to electoral systems. The existent literature assumes that voters will be able to identify the representatives who will best represent their preferences, regardless of the number of candidates competing in a district. I argue that many of the benefits to representation from increasing district magnitude may be lost on voters who are unable (or unwilling) to make satisfactory choices when they are presented with many candidates. In fact, voters may be unable to make choices when faced with an abundance of parties or candidates and may in fact be better off less fewer choices which, despite being less representative, may allow for an easier choice-making process. In this paper, I show evidence of one manifestation of this problem: voters are more likely to abstain when they are presented with more candidates.

The effect of choice set size on decision-making has receive more empirical testing in psychology and consumer choice. This work shows that as the size of the choice sets with which they are presented become larger, people become more likely to avoid making choices all together as they seek to avoid regret over suboptimal choices or are “demotivated” by an abundance of options (Schwartz et al., 2002; Iyengar and Lepper, 2000). This abstention effect can be quite substantial, in one experiment increasing abstention rates by 1000% when the choice set was increased from 6 to 24 (Iyengar and Lepper, 2000). Larger assortment sizes have also been shown to lead choosers to perform poorly or make suboptimal choices, in some cases leading them to selecting simpler options and avoid risk (Iyengar and Lepper, 2000; Iyengar and Kamenica, 2010). This finding holds even when performance is only tangentially related to the size of the choice set. Many of the challenges facing consumers dealing with large choice sets should also affect voters. As the size of their choice sets (the number of parties or candidates competing in their districts) increases, voters should be more likely to abstain or make suboptimal choices.

Despite the benefits of higher magnitude districts for proportionality and representation,

few scholars of electoral institutions advocate for nationwide districts. High  $M$  can lead to a proliferation of small parties and party system fragmentation (Taagepera, 2007). Beyond some threshold, there are also decreasing marginal returns to proportionality from increasing  $M$  (Carey and Hix, 2011). As a result, most scholars of electoral institutions advocate for districts of more “moderate” magnitudes or two-tiered systems (Carey and Hix, 2011; Elklit and Roberts, 1996). However, in addition to high magnitude systems, even systems with more “moderate” district magnitude may present voters with choice sets that are large enough to hinder decision-making. For example, even in the “electoral sweet spot” of  $M$  between four and eight identified by Carey and Hix (2011), voters’ choice sets may be large enough to deter voters from making choices. This is especially likely because the number of parties or candidates competing in a district will exceed  $M$ , in some cases by a great deal, particularly in systems where there are low costs to candidate entry and little strategic coordination by candidates and parties.<sup>1</sup>

The electoral choice set problem and the cognitive costs associated with large choice sets has received only very limited treatment in political science. In fact, in a recent paper, Carey and Hix (2011) observe that, “To our knowledge, cognitive capacity has attracted no serious attention in research on electoral systems design” (Carey and Hix, 2011, 6). Scholars have theorized that strategic voting is unlikely in very high magnitude districts, that high  $M$  leads to high information costs for voters, and that voting processes in some electoral systems can become unwieldy as  $M$  increases (Carey and Hix, 2011; Cox, 1997; Shugart, Valdini and Suominen, 2005; Taagepera and Shugart, 1989). By one measure, the entry of a third candidate in U.S. presidential elections was associated with a 23% decrease in the likelihood that voters would vote correctly (Lau and Redlawsk, 2001). Little empirical testing has been done, however, on the effect of choice set size on the ability of voters to make choices. This paper is the first to use an experimental design to test this relationship.

Despite being the subject of a good deal of scholarly work, there is little consensus on

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<sup>1</sup>For example, in some Brazilian statewide districts at the high end of the “sweet spot” ( $M=8$ ), over a hundred candidates regularly run for office.

institutional determinants of turnout and abstention across political systems, beyond compulsory voting rules (Blais, 2006). Much attention has been devoted to replicating Jackman's (1987) seminal work on voter turnout in industrial democracies in other democratic systems. However, this work has often found that determinants of turnout in one political system do not apply in another. Moreover, although much of this work has looked at the effective number of parties as a determinant of turnout, scholars have not yet tested how the number of candidates affects turnout.

Following Jackman (1987), scholars have theorized that where more parties field candidates, turnout should be depressed. Unlike the cognitive mechanism identified in this paper, the mechanism cited in most previous work is that reduced clarity for voters in who will form coalition governments will deter participation (Jackman, 1987; McAllister and Makkai, 1993; Fornos, Power and Garand, 2004). Power and Roberts (1995) identify a different mechanism by arguing that the high number of candidacies in systems like Brazil's should reduce voters' efficacy and thus increase rates abstention and null voting. However, their analysis is limited to the effective number of parties as a proxy for the supply of candidates and thus does not fully capture the range of options available to voters in that system.<sup>2</sup> This study will be the first to test for a relationship between the number of candidates and abstention rates. In doing so, I hope to more directly address the relationship between choice set size, voters' cognitive limitations, and the voting decisions. This work is also the first to employ an experimental design to test for a relationship between institutions and turnout and by doing so aims to avoid some of the limitations of using observational data to examine the effects of political institutions. Finally, the mechanism identified in this study should be robust to different political contexts because it is rooted in voters' fundamental cognitive limitations rather than potentially context-specific consequences of institutions.

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<sup>2</sup>As is explained in more detail below, Brazilian voters can cast votes for party lists or individual candidates. The overwhelming majority of voters do not cast votes for party lists and the number of legal options for Brazilian voters in legislative elections, even in the smallest electoral districts, is far greater than the effective number of parties.

## Party Labels and Abstention

The experimental design presented in this paper also tests for the ability of political parties to help voters ameliorate some of the difficulties associated with selecting candidates in high magnitude districts. Even where parties are insufficient for making choices because there is intraparty competition, they represent an additional piece of information about candidates that voters can use to filter candidates and effectively reduce large choice sets to more manageable sizes. The value of party cues to voters is well established in work on voting behavior in the United States (Campbell et al., 1960). Party endorsements are influential cues for voters even in non-partisan elections and can increase the likelihood of “correct voting” (Squire and Smith, 1988; Lau and Redlawsk, 1997; Lau, Andersen and Redlawsk, 2008). However, even in very weak or single party systems, party labels can facilitate issue taking and convey some information to voters (Brader and Tucker, 2009; Snyder and Ting, 2002). As such, even where partisanship is less entrenched than in stronger party systems, voters should be able to use party cues as a filter or “first-cut” when selecting candidates.

Work in consumer choice is also informative as to the role of cues and categories in facilitating choice-making, even when the information content of those categories is fairly low. The mere presence of categories can lead consumers to infer differences between products and thus increases their self-determination, satisfaction, and the likelihood that they will make choices. Mogilner, Rudnick and Iyengar (2008) refer to this as the “mere categorization effect” and show that even non-informative categories can help facilitate choice-making. Similarly, Carpenter, Glazer and Nakamoto (1994) find that consumers will differentiate between products using any distinguishing attributes, even those that are meaningless. This work suggests that even where parties are weak, they may help facilitate vote choice and mitigate some of the difficulties facing voters in multimember systems.

This literature has many implications for electoral systems and voting behavior. Perhaps most important is the potential role that parties can play in mitigating the effects of large choice sets on participation. In electoral systems that enhance the roles of parties, the elec-

toral choice set problem may be less pronounced. For example, where voters cast votes for party lists rather than individual candidates, voters may find it easier to reduce their effective choice sets by excluding parties whose positions are from their own. In other words, where party labels are meaningful, voters face an easier task when acquiring information about and evaluating their options than when they are forced to cast votes for individual candidates.<sup>3</sup> Furthermore, in systems where party identification in the electorate is strong, many voters may be “preference matchers” who seek out their preferred party label when voting and are thus not affected by increases in the size of the choice set (Mogilner, Rudnick and Iyengar, 2008). In sum, other characteristics of electoral systems may mitigate or exacerbate challenges facing voters in multimember districts depending both on specific institutional configurations and the strength of political parties.

## Legislative Elections in Brazil

In this paper I describe results from a survey experiment conducted in São Paulo, Brazil. Brazil is an ideal case to test for a relationship between choice set size and abstention rates. Its unusual combination of open list PR with high magnitude statewide districts leads to an abundance of candidates in federal, state, and municipal legislative elections. The Brazilian constitution requires that all legislative districts in the Chamber of Deputies have a minimum of eight seats. The most populous and highest magnitude district, São Paulo has 70 seats in the federal Chamber of Deputies and 94 seats in its state assembly. Even if only one candidate competed for each seat, these high magnitude districts would present voters with very large choice sets. In practice, however, the number of legal options facing Brazilian voters is far larger. Parties are allowed by law to field  $1\frac{1}{2}$  candidates for each seat in a district and many elect to do so. In most states, more than twenty parties field candidates in federal elections. As a result, most Brazilians cast votes in legislative districts with hundreds of candidates. In

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<sup>3</sup>Systems in which voters have the option to cast preference votes or vote for party lists would lie somewhere between closed list systems and systems with no party vote option.

2010, 1,029 candidates ran for 70 seats in São Paulo while 62 candidates ran for eight seats in Brazil's least populous state, Roraima.

Brazilian voters can also opt to cast votes for party lists instead of individual candidates. This allows voters to reduce the size of their electoral choice sets by considering only party labels rather than individual candidates. However, with more than twenty political parties competing in each state, the number of party labels for voters to consider is still quite large. Moreover, relatively few voters cast votes for party lists in federal elections, instead choosing to cast preference votes for individual candidates.

Television advertising during political campaigns also inundates Brazilian voters with choices. In 2004 in Rio de Janeiro, 27 parties fielded a total of 1,110 candidates for 50 seats in the city council. Of those candidates, 976 appeared in ads during the campaign. 890 of the candidates who appeared were given ads of less than five seconds while only nine candidates were allotted slots longer than 20 seconds by their parties (Albuquerque, Steibel and Carneiro, 2008). In sum, Brazilian voters are accustomed to navigating large electoral choice sets in legislative elections. The plethora of political parties fielding candidates in those elections prevents voters from avoiding large choice sets when casting a vote and television advertising does little to reduce the size of voters' choice sets.

Brazil has the world's largest electorate that is subject to compulsory voting and comparatively high numbers of voters there cast null and blank ballots (Power and Roberts, 1995). Voters are required by law to turn out on election day but are provided with the option of casting blank ballots instead of casting a vote. Figure 1 shows the electronic voting machine used in all Brazilian elections since 2002. The white *Branco* button allows voters to cast a blank vote rather than entering a number for a party or candidate. Together with compulsory voting, the option to cast a blank vote leads many Brazilians to turn out on election day but to abstain from selecting candidates. In the most recent legislative election in 2010, more than 7.5 million (6.76%) Brazilian voters turned out on election day but cast blank votes for federal deputy (Tribunal Superior Eleitoral, 2010a). Evaluating voting behavior in

Brazil thus provides us with the opportunity to evaluate the determinants of abstention for voters who have the option of casting blank ballots, for whom the costs of turning out do not necessarily drive abstention decisions.<sup>4</sup>

## Experimental Design

In order to test for a relationship between the size of voters' choice sets and voting behavior, I employ data from a survey experiment conducted in São Paulo, Brazil from June to August, 2011. 2,400 adults were surveyed by the author and a small team of Brazilian university students. Only adults over 18, for whom voting is compulsory, were surveyed.

Survey respondents were presented with profiles of hypothetical candidates who they were told were considering running for federal deputy in the next elections and were asked who they would vote for or if they would prefer to abstain. Subjects who indicated that they would abstain were asked which candidate they would select if they needed to select a candidate from the survey choice set. Some voters chose to abstain even when prompted a second time. All respondents, including those who abstained were asked to complete the entire survey such that, once they evaluated the candidate profiles, respondents' marginal time savings from not selecting a candidate was minimal. As a result, respondents' abstention decisions were not driven by a desire to save time.

Candidate profiles included candidates' names, photos, brief biographies, and policy positions on three of six issues. Survey respondents were randomly assigned to treatment conditions with 2, 3, 6, or 12 candidates. Experimental conditions with fewer candidates were subsets of conditions with more candidates such that all candidates in the 2 candidate condition were present in the 3, 6, and 12 candidate conditions, all candidates in the 3 candidate condition were present in the 6 and 12 candidate conditions, etc. Some subjects

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<sup>4</sup>The prevalence of blank voting is also a good analog to the experimental design presented in this paper as voters who chose to respond to the survey but opted not to select candidates more closely resemble voters who have turned out and cast a blank ballot than voters who did not turn out. As with voters who cast blank ballots, for survey respondents, the marginal cost of selecting a candidate once they have agreed to participate in the survey is small relative to the cost of participating.

were also randomly assigned to experimental conditions with party labels for Brazil’s three largest political parties (PT, PSDB, PMDB). Subjects who saw party labels in experimental conditions with 6 and 12 candidates were thus exposed to intraparty competition with more than one candidate from each political party. Table 1 shows the experimental conditions employed in the survey.

Figure 2 shows an English translation of the candidate profiles from the two candidate condition. Each candidate was educated at a well-known university, had some relevant professional experience, and presented reasonable policy positions on three of six issues. Candidates were also assigned party labels that were consistent with their policy positions. In this way, candidate quality and the perceived viability of the candidates did not vary across treatment conditions. Figures 3 shows candidate profiles from the treatment conditions with information about party affiliations and 3, 6, and 12 candidates, respectively. All candidate profiles used the same sized fonts and photographs, regardless of the treatment condition.<sup>5</sup>

The experimental design presented in this paper seeks to isolate the impact of choice set size on abstention rates. Note, however, that several other factors naturally could vary with choice set size – the number of viable and non-viable candidates, the probability that any party or candidate would be pivotal, etc. My design could have varied only the number of candidates by repeating the same candidates across conditions. However, this approach would have been extremely artificial and repetition would very likely have been detected by survey respondents. Most importantly, such an approach would have missed the essence of making more choice available to voters – voters presented with more candidates were provided with a wider variety of policies and issue positions. Furthermore, if not for the cognitive costs of larger choice sets, voters in my experiment should have been *less* likely to abstain when presented with more candidates as it became increasingly likely that one of the candidates

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<sup>5</sup>As part of a separate project, experimental conditions also varied the ethnicity and gender of some of the candidates. These manipulations proved to be orthogonal to abstention rates and have therefore been included in some of the analysis in order to increase the sample size and statistical power. These additional manipulations were concentrated in the experimental conditions with three candidates and, as a result, the sample size in the three conditions is larger than in conditions with two, six, or twelve candidates.

was a good fit for them . In this sense then, if anything, the experimental design is biased against my hypothesis.

## Results

All results from this experiment indicate a significant and substantively large positive effect of choice set size on abstention. Voters who were asked to select representatives from larger sets of candidates were significantly more likely to abstain than voters who were presented with smaller choice sets. These findings are robust to the addition of demographic variables and other covariates and apply both to respondents who deliberated carefully before making choices and those who made quick decisions with little deliberation. Contrary to my expectations, however, the presence of information about candidates' party affiliations seemed to have little effect on the probability that voters would abstain.

Before presenting results, I begin by assessing the random assignment of subjects to treatment conditions. Figure 4 presents sample means for self-reported covariates across treatment conditions. There are no significant differences in any of the measured covariates across the treatment conditions, indicating that the randomization was successful.

Figure 5 presents the “raw” results of the experiments, sample means with 95% confidence intervals for abstention rates in the experimental conditions with and without party labels. These plots show a clear positive relationship between choice set size and abstention rates when voters were presented with more than three candidates. Abstention rates increased by nearly 50% as the number of candidates increased from three to twelve and were minimized somewhere between two and six candidates. The substantive size of this electoral choice set effect is therefore quite large, even as choice set size is increased to levels far lower than what is observed in many electoral systems, including Brazil's.<sup>6</sup> Figure 5 also shows that party seems to have little to no mitigating effect on the relationship between choice set size and abstention

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<sup>6</sup>The smaller confidence intervals for the three candidate condition with no party labels is a result of the over-sampling in that condition discussed above.

except in the two candidate condition.<sup>7</sup> Interestingly, the abstention rate for voters in the two candidate condition without party labels is quite high (almost 35%). This may indicate that the relationship between choice set size and abstention is in fact curvilinear and that at low levels, the presence of additional options may make voters *more* likely to make choices. In the Brazilian case, this result may also be a consequence of presenting voters accustomed to a multitude of options in legislative elections with an extremely restricted choice set.

In order to confirm the robustness of the relationship between choice set size and abstention rates, I employ a series of logistic regression models. In these models, the dependent variable is a “dummy” variable indicating if a respondent abstained. The key independent variable is the size of the respondent’s choice set. These models also include a variable indicating if respondents saw information about candidates’ party affiliations. I control for respondents’ levels of education, income, and political interest, all of which respondents reported on a four-point scale with 1 indicating the least and 4 representing the most of the characteristic in question. I also include controls for age and gender as well as an indicator variable that takes a value of 1 if respondents reported identifying with a political party. One final control (*Deliberation*) is included to account for the time respondents spent evaluating the candidates before selecting a candidate or choosing to abstain. Voters who spent more than thirty seconds before making their choice were considered to have deliberated.<sup>8</sup> Summary statistics for these variables are presented in Table 2.

Table 3 presents results of the logistic regression models. These models show a significant, positive effect of the number of candidates on the probability of abstention. This relationship

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<sup>7</sup>Lower abstention rates in the two candidate condition with party labels may be the result of the candidates in that condition representing the PSDB and PT, the two parties whose candidates have won the presidency or finished second in the last five presidential elections. Voters in that experimental condition were thus presented with a choice based on a high salience cleavage between those two parties, about which many voters have well-defined preferences that they may have been inclined to express rather than abstaining. As such, the results from that particular condition should be interpreted with some caution as they may be an artifact of the particular party labels involved and may not apply more broadly.

<sup>8</sup>Although this cutoff may seem somewhat arbitrary, in practice coding respondents’ deliberation time was fairly non-controversial. Respondents who spent less than thirty seconds before choosing generally made choices in only a few seconds while those who deliberated for more than thirty seconds generally spent considerably more time considering their options. As such, this seemingly crude measure of deliberation time fairly well captures whether respondents made choices quickly or after some careful thought.

is robust to the addition of controls for respondents' levels of education, income, and political interest, as well as their age, gender, party identification, and deliberation time. Again, contrary to expectations, party labels seem to have only a marginally significant effect on abstention rates, although this effect is in the expected negative direction.<sup>9</sup> With respect to the control variables, deliberation time is negatively associated with the probability of abstention. This is not surprising given that many respondents who chose to abstain chose to do so without carefully considering their options. Respondents who indicated that they identified with some political party were less likely to abstain, a finding that fits well with work on turnout in Africa that shows that party identification is associated with higher rates of turnout (Kuenzi and Lambright, 2011). Interestingly, however, there appears to be no significant relationship between political interest and abstention. Finally, older respondents were more likely to abstain. In sum, the results from these models provide further support for a robust and positive effect of choice set size on abstention.

In order to capture any possible non-linearity in the relationship between choice set size and abstention, I employ a set of logistic regression models with indicator variables for each size choice set. The results from these models are presented in Table 4. In these models, the independent variables of interest are indicator variables for the 2, 6, and 12 candidate conditions, with the 3 candidate conditions representing the omitted category. These models provide further support for the positive effect of choice set size on abstention with choice set sizes larger than three. Presenting voters with choice sets of 6 or 12 candidates led them to be significantly more likely to abstain. This relationship is also robust to the addition of controls for respondents' characteristics and deliberation time. The controls behave similarly to the control variables in Table 3. Interestingly, in these models with indicator variables, education is positively associated with abstention rates. This finding fits well with some literature on turnout in developing democracies in Africa (Kuenzi and Lambright, 2011).

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<sup>9</sup>This result is probably inflated by the effect of party labels in the two candidate conditions. As is explained above, this effect is likely an artifact of the high salience party cleavage being presented in the two candidate condition with party labels.

These models also provide some further clarity about the relationship between choice set size and abstention with small choice sets. These models indicate that there is little to no effect of increasing choice set size between two and three candidates. The indicator for the two candidate condition is not significant in two models and is only marginally significant in the third. In sum, these models provide further evidence of a significant positive relationship between choice set size and abstention and indicate that this relationship applies to choice sets larger than three candidates.

As is discussed above, without an experimental design, testing for any causal relationship between the size of voters' choice sets and voting behavior is extremely challenging. The number of candidates competing in a district is a function of electoral institutions and other covariates that are correlated with rates of abstention. Using observational data, finding sufficient variation in the number of candidates while avoiding this substantial endogeneity problem is quite difficult. An experimental design allows for a stronger test of the causal relationship between choice set size and abstention by randomly varying respondents' choice set sizes while holding constant all other confounds.

However, experimental data also has its shortcomings. In particular, voters' responses to hypothetical candidates may be very different from their responses to real candidates. Voters in our survey spent at most a few minutes being exposed to the candidates instead of making voting decisions after months of campaigning. Finally, social networks that have been shown to influence vote choice were largely absent from our experiment (despite the fact that often times, friends and co-workers of respondents accompanied their survey responses).

In light of these concerns, the final survey question asked voters if the profiles of the candidates which they had seen were similar to the profiles of the candidates in the last election. Figure 6 shows responses to this question. Nearly 83% of respondents reported that the experimental candidates were the same or only a little different from the candidates in the last election. Only 8.3% reported that they were very different. Furthermore, of the few respondents who thought that the candidates were somewhat or very different from the

candidates in the last election, many could not identify any differences when asked. Most respondents who could identify some difference between the survey candidates and those from the last election reported that the policy positions of the hypothetical candidates were too-well defined or that the candidates were too well educated.<sup>10</sup> Many respondents also reported being familiar with or knowing the candidates or having at heard of at least one of the candidates in the survey despite the candidates being hypothetical. These figures provide some confidence that the candidate profiles in the survey were sufficiently realistic to be evaluated in a similar fashion as candidates in a real election.

An additional concern is that voters not familiar with the hypothetical candidates would be more likely to abstain than if they were presented with actual candidates with whom they were familiar. The nature of legislative elections in Brazil, the demands on voters in such contests, and the design of the experiment provide some assurance that this was not the case. Given the large number of candidates competing in legislative elections there, Brazilian voters are unfamiliar with the overwhelming majority of candidates competing in their districts. In many cases, given the very limited media coverage of legislative campaigns, their knowledge of and attachment to the candidates with whom they are familiar is also often limited. The respondents in the survey who reported knowing at least one of the hypothetical candidates, for example, demonstrate that for many voters, familiarity with candidates can at times be extremely superficial. However, this unfamiliarity does not seem to prevent most voters from selecting candidates in Brazil's legislative elections. Finally, given that hypothetical candidates were used in all experimental conditions, any effect of unfamiliarity should be constant across experimental conditions. Brazilian voters are accustomed to navigating electoral environments with many more than twelve unfamiliar candidates and, as a result, it is unlikely that the use of hypothetical candidates rather than real candidates led voters to abstain at differential rates as the number of candidates increased.

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<sup>10</sup>One reponse the author heard from some respondents was that “there were no Tiririca’s in the survey” - a reference to the allegedly illiterate television clown who was the leading vote-getter in the 2010 legislative elections, winning over 1.3 million votes and electing numerous others on his coattails.

Finally, the overwhelming majority of legislative candidates in Brazil receive little to no media coverage and, as is illustrated above, have very scarce television advertising time. As such, the brief time survey respondents spent evaluating the hypothetical candidates may in fact be a reasonable approximation of how much time they are exposed to many legislative candidates. In fact, as some responses indicated, the candidate profiles may have in some cases provided **more** exposure to candidates' policy positions and personal backgrounds than in a typical legislative election! In sum, although some shortcomings of employing hypothetical candidates in an experimental design are unavoidable, the candidates in our survey seemed to respondents to be quite realistic and were evaluated in a fashion that was not radically different from the way in which many Brazilian voters typically evaluate legislative candidates.

The number of issues and unique issue positions will generally increase with the number of candidates competing in an election. Similarly, in this experimental design, subjects in treatment conditions with more candidates were exposed to a wider range of issues as well as issue positions in the candidate profiles. As a result, one potential confound to this design is that the presence of some new issue or issue position in experimental conditions with more candidates could be driving results. Given that the dependent variable is abstention rather than vote choice, this seems unlikely. No respondents indicated that the presence of a particular issue or issue position led them to abstain and it seems unlikely that seeing one candidate adopt a particular issue position would lead voters to abstain from voting altogether. In fact, finding a particular issue position non-desirable should make vote choice easier for voters by reducing the number of acceptable candidates.

## Discussion

The conventional wisdom for most voters and many political scientists is that providing voters with more choice (at least up to a certain point) will improve the fit between voters

and candidates. Voters from minority political and ethnic groups in particular benefit from greater choice; as more candidates and parties enter competition it becomes increasingly likely that minority groups will achieve some representation. In this paper, I have presented the first test of the costs of choice set size in electoral environments and have shown that voters are not immune to the challenges of making decisions when facing large choice sets. Even when presented with six candidates, voters in our experiment were significantly more likely to abstain than when choosing from only three candidates. The magnitude of this effect is quite large, increasing the probability of abstention by nearly 50% between the three and twelve candidate conditions. These results indicate that many voters may be unable to reap the benefits of more choice in elections. Moreover, hundreds of millions of voters select representatives in systems with even more parties and candidates than were presented in this experiment. For those voters, identifying the best or even a good quality representative can be even more challenging.

Political systems with only a handful of candidates and parties may be excessively limiting for many voters for whom the best candidate is a fairly poor match for their preferences. On the other hand, providing voters with more choice can be self-defeating if voters are unable to identify and vote for quality representatives. As is shown in this paper, increasing the number of candidates can deter participation by leading overwhelmed voters to avoid choice-making. Beyond suppressing turnout, increasing the size of voters' choice sets very likely also affects the *quality* of voters' choices. Voters who chose to navigate large choice sets face considerable information demands. As the number of candidates increases, most voters will acquire less information about each candidate and may acquire little to no information about some of their options. In these systems, voters may also rely more on information shortcuts that can be noisy or even misleading signals of candidate quality. It is clear that the probability of selecting the best candidate decreases in the number of candidates. However, the probability of selecting even a satisfactory representative also decreases as information costs increase. As a result, even for voters for whom participation is not deterred by large electoral choice sets,

the probability of selecting a low quality representative increases as the size of their choice set increases. For many voters, then, less choice may be more.

For political scientists and designers of electoral institutions, more attention should be paid to the cognitive costs of multimember systems. Like other trade-offs associated with increasing the number of candidates and representatives, the ability of voters to make the most of the choices with which they are presented should be considered when studying and designing electoral systems. How does the “electoral sweet spot” identified by Carey and Hix (2011) shift once voters’ cognitive capacities are taken into account? What district magnitudes are optimal for maximizing not just proportionality and accountability but also the ability of voters to make choices? Future scholarly work could examine how the quality of voting decisions varies with the number of candidates. Are voters able to make satisfactory choices when half a dozen, a dozen, or a hundred candidates seek office in their districts? How do the information and the shortcuts voters seek change as the size of their choice sets increases? Campaigns can also be conducted and covered with voters’ cognitive limitations in mind. Candidate coordination can reduce the size of voters’ effective choice sets as parties and candidates target only select subsets of voters. Campaign coverage can also be designed to make information more accessible and manageable for voters.

Electoral systems are designed to provide representation, accountability, and governability. However, the extent to which they facilitate or complicate voters’ choices is an equally important feature of their design. If voters are unwilling or unable to select quality representatives, elections cannot effectively translate votes into representative elected bodies and policy outcomes. In this sense, facilitating voting decisions should be considered a primary objective of electoral systems and is a necessary precondition for their proper functioning.

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## Appendix

Figure 1: Electronic Voting Screen and Keyboard





Source: Tribunal Superior Eleitoral (2010b)

Table 1: Experimental Conditions




	Control	Treatment
# of candidates	No Party	Party Cues
2	2, No Party	2, Party
3	3, No Party	3, Party
6	6, No Party	6, Party
12	12, No Party	12, Party

Figure 2: English Translation of Two Candidate Condition







	<p><b>Sérgio Augusto Ribeiro - PT</b></p> <p>Sérgio is a lawyer with a degree from the University of São Paulo. After finishing school he worked in a law firm before deciding to dedicate his life to politics. Since then he worked in the state court of São Paulo, where he worked as a legislative liaison between state legislators and judges. He has also worked as a lawyer for the Federal Ministry of Justice. He is married to Juliana and has two children: Thiago, who is 12, and Renata, who is 9 years old.</p> <p><b>Taxes:</b> Sérgio will raise taxes on the wealthy in order to increase government spending on social services targeted to the poor.</p> <p><b>Health Care:</b> To ensure that people have access to quality public health care, Sérgio will build new hospitals and health centers and hire more doctors.</p> <p><b>Environment:</b> Sérgio plans to protect the Amazon while, at the same time, developing a sustainable program to allow small farmers to benefit from part of the rainforest.</p>
	<p><b>Fernando Lopes Damazio - PSDB</b></p> <p>Fernando graduated with a degree in economics from the University of Campinas. Since he decided to pursue a career in politics he has worked as an advisor in the state assembly of São Paulo, helping to create the state's budgets. He has also worked at the Ministry of Finance as a fiscal consultant. He has also taught classes at the University of Brasília. He and his wife Viviane have two children: João, 10 and Gabriel, 6.</p> <p><b>Taxes:</b> In order to increase public spending, Fernando will raise taxes equally for all citizens.</p> <p><b>Health Care:</b> Fernando will create job training programs for doctors and nurses to improve the quality of care.</p> <p><b>Environment:</b> Fernando proposes to protect the Amazon while allowing private companies to make use of its resources so long as they present a government-approved plan for reforestation.</p>

# Figure 3: Candidate Profiles

## (a) Three Candidates

 <p><b>Sérgio Augusto Ribeiro - PT</b></p> <p>Sérgio é advogado graduado pela Universidade de São Paulo. Após concluir a universidade, trabalhou em um escritório de advocacia, antes de decidir dedicar a sua vida à política. Desde então, trabalhou no Tribunal de Justiça do Estado de São Paulo, onde serviu como uma figura entre os legisladores estaduais e no júri. Sérgio também tem trabalhado como agente do Ministério Federal de Justiça. Ele é casado com Juliana e tem dois filhos: Thiago, 12 anos, e Renata, 9 anos.</p> <p><b>Impostos:</b> Sérgio vai aumentar os impostos sobre os ricos, a fim de aumentar os gastos governamentais em serviços sociais voltados para os pobres.</p> <p><b>Saúde:</b> Para assegurar que as pessoas tenham acesso à saúde pública de qualidade, Sérgio vai construir novas hospitais e centros de saúde e contratar mais médicos.</p> <p><b>Meio Ambiente:</b> Sérgio pretende proteger a Amazônia, e, ao mesmo tempo, desenvolver um programa sustentável para permitir que os pequenos agricultores se beneficiem de uma parte da floresta tropical.</p>
 <p><b>Fernando Lopes Damazio - PSDB</b></p> <p>Fernando se formou em economia pela Universidade de Campinas. Desde que decidiu seguir uma vida na política, ele trabalhou como assessor na Assembleia Legislativa do Estado de São Paulo, ajudando a planejar o orçamento do estado. Ele também trabalhou para o Ministério da Fazenda como consultor fiscal. Fernando deu aulas na Universidade de Brasília. Ele e sua esposa, Viviane têm dois filhos: João, 10 anos, e Gabriel, 9 anos.</p> <p><b>Impostos:</b> A fim de aumentar os gastos públicos, Fernando pretende aumentar os impostos igualmente para todos os cidadãos.</p> <p><b>Saúde:</b> Fernando criou programas de treinamento para médicos e enfermeiros para melhorar a qualidade do atendimento.</p> <p><b>Meio Ambiente:</b> Fernando propõe proteger a Amazônia e planeja que empresas privadas aproveitem os seus recursos, desde que apresentem um plano de reflorestamento aprovado pelo governo.</p>
 <p><b>Leonardo Coelho da Silva - PMDB</b></p> <p>Leonardo se formou na Universidade de São Paulo, onde estudou contabilidade. Depois de completar seus estudos Leonardo trabalhou como contador privado. Após decidir se dedicar à vida pública, ele trabalhou como chefe de gabinete e como gerente de campanha de um deputado estadual em São Paulo. Leonardo também trabalhou como consultor de orçamento para o Ministério de Minas e Energia. Ele é casado com Ana Carolina e tem dois filhos: David, 11 anos, e Isabela, 7 anos.</p> <p><b>Impostos:</b> Leonardo vai reduzir os impostos a fim de onerar menos as pessoas e estimular a economia, mesmo que isso signifique cortar gastos públicos.</p> <p><b>Saúde:</b> Leonardo vai fornecer mais incentivos para os prestadores privados de saúde através novas hospitais e clínicas, permitindo que as pessoas tenham acesso a serviços privados de qualidade.</p> <p><b>Meio Ambiente:</b> A fim de criar mais empregos e estimular a economia do país, Leonardo propõe dar acesso à Amazônia a empresas privadas e estrangeiras.</p>

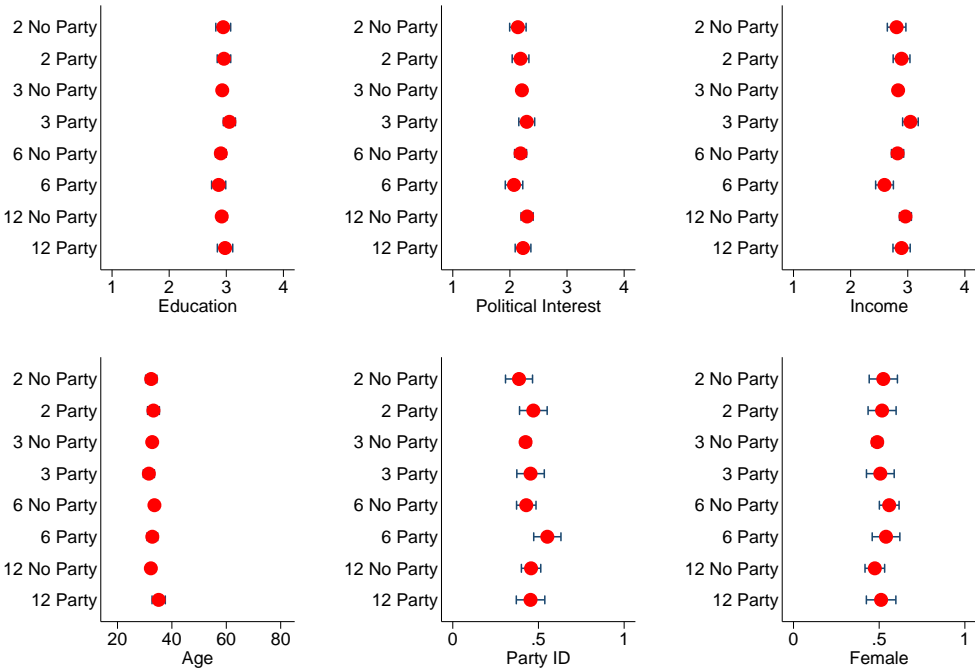
## (b) Six Candidates

 <p><b>Sérgio Augusto Ribeiro - PT</b></p> <p>Sérgio é advogado graduado pela Universidade de São Paulo. Após concluir a universidade, trabalhou em um escritório de advocacia, antes de decidir dedicar a sua vida à política. Desde então, trabalhou no Tribunal de Justiça do Estado de São Paulo, onde serviu como uma figura entre os legisladores estaduais e no júri. Sérgio também tem trabalhado como agente do Ministério Federal de Justiça. Ele é casado com Juliana e tem dois filhos: Thiago, 12 anos, e Renata, 9 anos.</p> <p><b>Impostos:</b> Sérgio vai aumentar os impostos sobre os ricos, a fim de aumentar os gastos governamentais em serviços sociais voltados para os pobres.</p> <p><b>Saúde:</b> Para assegurar que as pessoas tenham acesso à saúde pública de qualidade, Sérgio vai construir novos hospitais e centros de saúde e contratar mais médicos.</p> <p><b>Meio Ambiente:</b> Sérgio pretende proteger a Amazônia, e, ao mesmo tempo, desenvolver um programa sustentável para permitir que os pequenos agricultores se beneficiem de uma parte da floresta tropical.</p>	 <p><b>Fernando Lopes Damazio - PSDB</b></p> <p>Fernando se formou em economia pela Universidade de Campinas. Desde que decidiu seguir uma vida na política, ele trabalhou como assessor na Assembleia Legislativa do Estado de São Paulo, ajudando a planejar o orçamento do estado. Ele também trabalhou para o Ministério da Fazenda como consultor fiscal. Fernando deu aulas na Universidade de Brasília. Ele e sua esposa, Viviane têm dois filhos: João, 10 anos, e Gabriel, 9 anos.</p> <p><b>Impostos:</b> A fim de aumentar os gastos públicos, Fernando pretende aumentar os impostos igualmente para todos os cidadãos.</p> <p><b>Saúde:</b> Fernando criou programas de treinamento para médicos e enfermeiros para melhorar a qualidade do atendimento.</p> <p><b>Meio Ambiente:</b> Fernando propõe proteger a Amazônia e planeja que empresas privadas aproveitem os seus recursos, desde que apresentem um plano de reflorestamento aprovado pelo governo.</p>	 <p><b>Leonardo Coelho da Silva - PMDB</b></p> <p>Leonardo se formou na Universidade de São Paulo, onde estudou contabilidade. Depois de completar seus estudos Leonardo trabalhou como contador privado. Após decidir se dedicar à vida pública, ele trabalhou como chefe de gabinete e como gerente de campanha de um deputado estadual em São Paulo. Leonardo também trabalhou como consultor de orçamento para o Ministério de Minas e Energia. Ele é casado com Ana Carolina e tem dois filhos: David, 11 anos, e Isabela, 7 anos.</p> <p><b>Impostos:</b> Leonardo vai reduzir os impostos a fim de onerar menos as pessoas e estimular a economia, mesmo que isso signifique cortar gastos públicos.</p> <p><b>Saúde:</b> Leonardo vai fornecer mais incentivos para os prestadores privados de saúde através novas hospitais e clínicas, permitindo que as pessoas tenham acesso a serviços privados de qualidade.</p> <p><b>Meio Ambiente:</b> A fim de criar mais empregos e estimular a economia do país, Leonardo propõe dar acesso à Amazônia a empresas privadas e estrangeiras.</p>
 <p><b>João Pedro de Oliveira - PT</b></p> <p>Depois de se graduar em história na Universidade de Campinas, João Pedro de Oliveira trabalhou na Secretaria da Educação em um projeto de reformulação dos currículos de educação básica e na avaliação das escolas públicas e privadas. Desde então, João Pedro é professor de História Política Brasileira na Universidade de São Paulo. Ele e sua esposa, Maria Helena, têm três filhos: Carla, de 10 anos, Bruno de 7 anos, e Juliana, de 3 anos de idade.</p> <p><b>Comércio Internacional:</b> João Pedro quer renegociar os acordos internacionais com outros países, como a China, que não sejam benéficos às empresas nacionais e aos trabalhadores através da regulação de mais benefícios.</p> <p><b>Saúde:</b> João Pedro vai aumentar a produção de medicamentos genéricos para tornar mais acessível uma saúde de qualidade.</p> <p><b>Transporte:</b> João Pedro vai baixar as tarifas de ônibus e metrô para que as pessoas possam mais transporte público e o trânsito seja reduzido.</p>	 <p><b>Marcos Miranda Pedrosa - PSDB</b></p> <p>Depois de se formar em jornalismo pela FUC-SP, Marcos Miranda Pedrosa começou a trabalhar na Imprensa Oficial como editor nos publicações do Estado de São Paulo. Quando deixou este trabalho, Marcos começou a trabalhar como jornalista do rádio O Globo, recorrendo sobre política e economia. Ele e sua esposa, Juana, têm três filhos: Vanessa, Verônica e Carlos, de 11, 9 e 6 anos, respectivamente.</p> <p><b>Privatização:</b> Marcos vai permitir maior participação privada na Petrobrás para assegurar que os recursos energéticos brasileiros sejam tratados utilizados e para ampliar o fluxo de recursos financeiros para o governo.</p> <p><b>Impostos:</b> Marcos propõe reduzir os impostos para impulsionar economia e cortar alguns gastos sociais sem afetar os recursos gastos com políticas de combate à criminalidade.</p> <p><b>Meio Ambiente:</b> Marcos vai permitir acesso a empresas privadas que estejam comprometidas com o desenvolvimento responsável da Amazônia para poder criar empregos e promover crescimento econômico.</p>	 <p><b>Márcio Antônio Vasconcelos - PMDB</b></p> <p>Márcio Antônio Vasconcelos trabalhou durante anos para uma empresa internacional de consultoria, se especializando em assuntos energéticos e aumento de eficiência. Também trabalhou no governo estadual ajudando a implementar sistemas de contratação e avaliação de servidores públicos. Márcio Antônio é graduado em administração de empresas pela Fundação Getúlio Vargas. Tem um filho de 9 anos, Pedro. É casado com Maria Fernanda.</p> <p><b>Privatização:</b> Márcio vai transferir para o setor privado muitos dos serviços prestados pelo Estado para aumentar a eficiência e assegurar que os recursos públicos sejam bem utilizados.</p> <p><b>Meio Ambiente:</b> Márcio quer ampliar a participação da economia brasileira no mundo incluindo mais acordos comerciais que posicionem ao ator econômico internacional importante.</p> <p><b>Comércio Internacional:</b> Márcio vai propor que empresas privadas fiscalizem o trânsito das ruas e das rodovias estaduais para que os congestionamentos e outros problemas de transporte sejam reduzidos.</p>

## (c) Twelve Candidates

 <p><b>Sérgio Augusto Ribeiro - PT</b></p> <p>Sérgio é advogado graduado pela Universidade de São Paulo. Após concluir a universidade, trabalhou em um escritório de advocacia, antes de decidir dedicar a sua vida à política. Desde então, trabalhou no Tribunal de Justiça do Estado de São Paulo, onde serviu como uma figura entre os legisladores estaduais e no júri. Sérgio também tem trabalhado como agente do Ministério Federal de Justiça. Ele é casado com Juliana e tem dois filhos: Thiago, 12 anos, e Renata, 9 anos.</p> <p><b>Impostos:</b> Sérgio vai aumentar os impostos sobre os ricos, a fim de aumentar os gastos governamentais em serviços sociais voltados para os pobres.</p> <p><b>Saúde:</b> Para assegurar que as pessoas tenham acesso à saúde pública de qualidade, Sérgio vai construir novas hospitais e centros de saúde e contratar mais médicos.</p> <p><b>Meio Ambiente:</b> Sérgio pretende proteger a Amazônia, e, ao mesmo tempo, desenvolver um programa sustentável para permitir que os pequenos agricultores se beneficiem de uma parte da floresta tropical.</p>	 <p><b>Fernando Lopes Damazio - PSDB</b></p> <p>Fernando se formou em economia pela Universidade de Campinas. Desde que decidiu seguir uma vida na política, ele trabalhou como assessor na Assembleia Legislativa do Estado de São Paulo, ajudando a planejar o orçamento do estado. Ele também trabalhou para o Ministério da Fazenda como consultor fiscal. Fernando deu aulas na Universidade de Brasília. Ele e sua esposa, Viviane têm dois filhos: João, 10 anos, e Gabriel, 9 anos.</p> <p><b>Impostos:</b> A fim de aumentar os gastos públicos, Fernando pretende aumentar os impostos igualmente para todos os cidadãos.</p> <p><b>Saúde:</b> Fernando criou programas de treinamento para médicos e enfermeiros para melhorar a qualidade do atendimento.</p> <p><b>Meio Ambiente:</b> Fernando propõe proteger a Amazônia e planeja que empresas privadas aproveitem os seus recursos, desde que apresentem um plano de reflorestamento aprovado pelo governo.</p>	 <p><b>Leonardo Coelho da Silva - PMDB</b></p> <p>Leonardo se formou na Universidade de São Paulo, onde estudou contabilidade. Depois de completar seus estudos Leonardo trabalhou como contador privado. Após decidir se dedicar à vida pública, ele trabalhou como chefe de gabinete e como gerente de campanha de um deputado estadual em São Paulo. Leonardo também trabalhou como consultor de orçamento para o Ministério de Minas e Energia. Ele é casado com Ana Carolina e tem dois filhos: David, 11 anos, e Isabela, 7 anos.</p> <p><b>Impostos:</b> Leonardo vai reduzir os impostos a fim de onerar menos as pessoas e estimular a economia, mesmo que isso signifique cortar gastos públicos.</p> <p><b>Saúde:</b> Leonardo vai fornecer mais incentivos para os prestadores privados de saúde através novas hospitais e clínicas, permitindo que as pessoas tenham acesso a serviços privados de qualidade.</p> <p><b>Meio Ambiente:</b> A fim de criar mais empregos e estimular a economia do país, Leonardo propõe dar acesso à Amazônia a empresas privadas e estrangeiras.</p>
 <p><b>João Pedro de Oliveira - PT</b></p> <p>Depois de se graduar em história na Universidade de Campinas, João Pedro de Oliveira trabalhou na Secretaria da Educação em um projeto de reformulação dos currículos de educação básica e na avaliação das escolas públicas e privadas. Desde então, João Pedro é professor de História Política Brasileira na Universidade de São Paulo. Ele e sua esposa, Maria Helena, têm três filhos: Carla, de 10 anos, Bruno de 7 anos, e Juliana, de 3 anos de idade.</p> <p><b>Comércio Internacional:</b> João Pedro quer renegociar os acordos internacionais com outros países, como a China, que não sejam benéficos às empresas nacionais e aos trabalhadores através da regulação de mais benefícios.</p> <p><b>Saúde:</b> João Pedro vai aumentar a produção de medicamentos genéricos para tornar mais acessível uma saúde de qualidade.</p> <p><b>Transporte:</b> João Pedro vai baixar as tarifas de ônibus e metrô para que as pessoas possam mais transporte público e o trânsito seja reduzido.</p>	 <p><b>Marcos Miranda Pedrosa - PSDB</b></p> <p>Depois de se formar em jornalismo pela FUC-SP, Marcos Miranda Pedrosa começou a trabalhar na Imprensa Oficial como editor nos publicações do Estado de São Paulo. Quando deixou este trabalho, Marcos começou a trabalhar como jornalista do rádio O Globo, recorrendo sobre política e economia. Ele e sua esposa, Juana, têm três filhos: Vanessa, Verônica e Carlos, de 11, 9 e 6 anos, respectivamente.</p> <p><b>Privatização:</b> Marcos vai permitir maior participação privada na Petrobrás para assegurar que os recursos energéticos brasileiros sejam tratados utilizados e para ampliar o fluxo de recursos financeiros para o governo.</p> <p><b>Impostos:</b> Marcos propõe reduzir os impostos para impulsionar economia e cortar alguns gastos sociais sem afetar os recursos gastos com políticas de combate à criminalidade.</p> <p><b>Meio Ambiente:</b> Marcos vai permitir acesso a empresas privadas que estejam comprometidas com o desenvolvimento responsável da Amazônia para poder criar empregos e promover crescimento econômico.</p>	 <p><b>Márcio Antônio Vasconcelos - PMDB</b></p> <p>Márcio Antônio Vasconcelos trabalhou durante anos para uma empresa internacional de consultoria, se especializando em assuntos energéticos e aumento de eficiência. Também trabalhou no governo estadual ajudando a implementar sistemas de contratação e avaliação de servidores públicos. Márcio Antônio é graduado em administração de empresas pela Fundação Getúlio Vargas. Tem um filho de 9 anos, Pedro. É casado com Maria Fernanda.</p> <p><b>Privatização:</b> Márcio vai transferir para o setor privado muitos dos serviços prestados pelo Estado para aumentar a eficiência e assegurar que os recursos públicos sejam bem utilizados.</p> <p><b>Meio Ambiente:</b> Márcio quer ampliar a participação da economia brasileira no mundo incluindo mais acordos comerciais que posicionem ao ator econômico internacional importante.</p> <p><b>Transporte:</b> Márcio vai propor que empresas privadas fiscalizem o trânsito das ruas e das rodovias estaduais para que os congestionamentos e outros problemas de transporte sejam reduzidos.</p>
 <p><b>Gláucio de Souza Mattos - PT</b></p> <p>Gláucio de Souza Mattos trabalhou como diretor de projetos de uma ONG voltada para a assistência de famílias pobres da Região Metropolitana de São Paulo. Gláucio é formado em Serviço Social pela FUC. Depois de se formar e antes de dirigir a ONG, Gláucio já teve trabalhado como assistente do Ministro do Desenvolvimento Social e Combate à Fome. É casado com Letícia, com quem tem dois filhos: Eliza, de 7 anos, e Mariana de 5 anos.</p> <p><b>Impostos:</b> Gláucio quer aumentar os impostos para toda a população de acordo com a renda de cada cidadão com o objetivo de ampliar os gastos sociais.</p> <p><b>Transporte:</b> Gláucio vai comprar mais ônibus e criar novas linhas exclusivas para que mais pessoas possam utilizar mais ônibus e o trânsito seja reduzido.</p> <p><b>Meio Ambiente:</b> Gláucio vai permitir acesso aos recursos naturais da Amazônia somente ao Governo Federal, que os utilizará para criar empregos e promover crescimento econômico.</p>	 <p><b>Alexandre Batista Cabreira - PSDB</b></p> <p>Alexandre quer que empresas e trabalhadores cooperem e abram mão de parte de seu benefícios para que o Brasil assista mais acordos comerciais que terão impacto positivo na economia no longo prazo.</p> <p><b>Comércio Internacional:</b> Alexandre quer privatizar parte da Petrobrás para que ela seja mais competitiva internacionalmente.</p> <p><b>Meio Ambiente:</b> Alexandre quer criar um mercado de reflorestamento que permita assegurar que os recursos da Amazônia sejam aproveitados da forma mais eficiente possível.</p>	 <p><b>Nelson Borges Carvalho - PMDB</b></p> <p>Nelson Borges Carvalho trabalhou como economista do Banco Itaú, produzindo relatórios de previsões econômicas. Ele é formado em economia pela UNESP. Nelson também trabalhou no Ministério de Previdência Social ajudando a promover mudanças no orçamento em virtude de mudanças econômicas de longo prazo. Ele tem três filhos: Guilherme, Vinícius e André, com 4, 1 e 3 anos, respectivamente, e é casado com Cristina.</p> <p><b>Saúde:</b> Nelson vai limitar a produção de medicamentos genéricos para incentivar as empresas farmacêuticas brasileiras e estrangeiras a desenvolverem e produzirem novos medicamentos.</p> <p><b>Comércio Internacional:</b> Nelson pensa que acordos comerciais com outros países deveriam ficar como estão se eles não forem para a economia, pois depois de um período de ajuste todos serão beneficiados pelos acordos.</p> <p><b>Impostos:</b> Nelson propõe a redução de impostos para impulsionar a economia, cortando ao mesmo tempo gastos do governo e desistindo espaço para empresas privadas atenderem às necessidades dos cidadãos.</p>
 <p><b>Rogério Alves Napolitano - PT</b></p> <p>Rogério Alves Napolitano é graduado em ciências sociais pela Fundação Escola de Sociologia e Política de São Paulo. Depois de se formar ele trabalhou para a prefeitura de São Paulo, ajudando a construir um programa municipal de combate à pobreza. Rogério também trabalhou como professor de sociologia na UNESP, especialista em causas e consequências da pobreza. Ele é casado com Ana Maria e tem uma filha de 10 anos, Viviane.</p> <p><b>Comércio Internacional:</b> Rogério acredita que todos os acordos internacionais deveriam ser renegociados para atender aos interesses das empresas brasileiras, que deveriam evitar vender seus produtos em outros países sem impostos.</p> <p><b>Saúde:</b> Rogério vai criar equipes de saúde que vão de casa em casa e atenderão às pessoas com qualidade em suas próprias casas.</p> <p><b>Transporte:</b> Rogério vai propor a criação da Secretaria Federal de Transporte Urbano para controlar as empresas de transporte público e melhorar o trânsito nas cidades.</p>	 <p><b>Armando Jordão Silveira - PSDB</b></p> <p>Armando pensa que pode ser benéfico para os trabalhadores aceitar a flexibilização das leis trabalhistas para comprar acordos internacionais, pois isso aumentaria as exportações brasileiras.</p> <p><b>Comércio Internacional:</b> Armando vai concordar a empresas privadas e controlar sobre eventos para assegurar que as relações das leis de trânsito sejam justas e o trânsito reduzido.</p> <p><b>Transporte:</b> Armando vai lutar contra os desperdícios nos gastos com saúde para assegurar que o dinheiro seja bem gasto nos serviços de saúde de qualidade.</p>	 <p><b>Carlos Augusto Ferreira - PMDB</b></p> <p>Carlos Augusto Ferreira é graduado em Jornalismo pela Faculdade Ciepac Livreiro. Depois de se formar, trabalhou na Ouvidoria da Polícia Civil do Estado de São Paulo, produzindo relatórios sobre as atividades das polícias e relatando os eventos através comissões periciais. Carlos Augusto também trabalhou como correspondente brasileiro da BBC, produzindo reportagens sobre assuntos brasileiros e regionais. É casado com Marcia e eles têm uma filha Bianca, de 5 anos.</p> <p><b>Privatização:</b> Carlos Augusto vai fazer de volta para o governo controle de empresas privadas para fazer com que funcionem melhor para todos e gerem recursos para o governo.</p> <p><b>Meio Ambiente:</b> Carlos Augusto propõe proteger novamente a Amazônia proibindo empresas e agricultores de extraírem madeira e caçar a área de floresta.</p> <p><b>Transporte:</b> Carlos Augusto vai estreitar os laços de metrô e construir mais estações para aliviar o trânsito para todos.</p>

Figure 4: Covariate Balance across Treatment Conditions



Sample Means with 95% Confidence Intervals

Figure 5: Choice Set Size and Abstention Rates

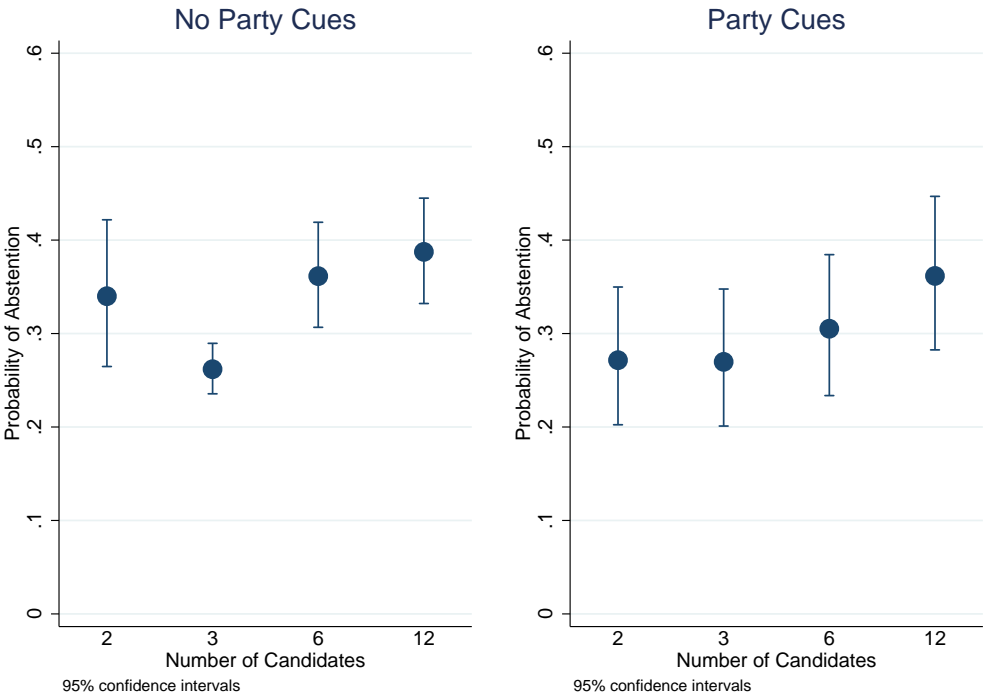


Table 2: Summary Statistics

	count	mean	sd	min	max
Abstain	2262	0.301	0.459	0	1
Party Labels	2262	0.248	0.432	0	1
Education	2262	2.940	0.785	1	4
Income	2262	2.855	0.938	1	4
Political Interest	2262	2.219	0.897	1	4
Female	2262	0.502	0.500	0	1
Party ID	2262	0.448	0.497	0	1
Age	2262	32.843	12.622	18	81
Number of Candidates	2262	5.122	3.531	2	12
2 Candidates	2262	0.126	0.331	0	1
3 Candidates	2262	0.499	0.500	0	1
6 Candidates	2262	0.188	0.391	0	1
12 Candidates	2262	0.187	0.390	0	1
Observations	2262				

Table 3: Logistic Regression of Abstention on Choice Set Size

	(1)	(2)	(3)
	Abstain	Abstain	Abstain
Number of Candidates	0.0534*** (0.0122)	0.0554*** (0.0131)	0.0564*** (0.0132)
Party Labels			-0.111 (0.112)
Education		0.158** (0.0696)	0.161** (0.0696)
Income		0.0910 (0.0596)	0.0900 (0.0596)
Political Interest		-0.0394 (0.0563)	-0.0405 (0.0564)
Deliberation		-0.686*** (0.104)	-0.693*** (0.104)
Age		0.0316*** (0.00378)	0.0317*** (0.00378)
Female		-0.314*** (0.0979)	-0.313*** (0.0979)
Party ID		-0.405*** (0.0991)	-0.400*** (0.0992)
Constant	-1.105*** (0.0789)	-2.048*** (0.278)	-2.030*** (0.278)
Observations	2400	2262	2262

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 4: Abstention and Choice Set Size with Indicator Variables

	(1)	(2)	(3)
	Abstain	Abstain	Abstain
2 Candidates	0.211 (0.141)	0.227 (0.151)	0.299* (0.157)
6 Candidates	0.378*** (0.119)	0.376*** (0.128)	0.413*** (0.130)
12 Candidates	0.538*** (0.118)	0.564*** (0.126)	0.598*** (0.128)
Party Labels			-0.194* (0.117)
Education		0.155** (0.0697)	0.160** (0.0697)
Income		0.0937 (0.0597)	0.0921 (0.0597)
Political Interest		-0.0364 (0.0564)	-0.0378 (0.0564)
Deliberation		-0.669*** (0.104)	-0.678*** (0.104)
Age		0.0317*** (0.00378)	0.0317*** (0.00378)
Female		-0.320*** (0.0981)	-0.320*** (0.0981)
Party ID		-0.407*** (0.0992)	-0.398*** (0.0994)
Constant	-1.031*** (0.0654)	-1.986*** (0.275)	-1.970*** (0.275)
Observations	2400	2262	2262

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Figure 6: How Different are Survey Candidates and Candidates in Last Election?

