

# **Lack of Preferences, Political Trust and Education Levels: Alternative Explanations for Invalid Votes in Brazilian Elections**

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*The authors' names are listed in alphabetical order, equal authorship is implied. All data and information necessary to replicate our work are available at <https://github.com/danilofreire/replication-files/tree/master/2015/invalid-votes>.*

## **Abstract**

*This paper explores the causes of invalid voting in Brazilian elections. Given that invalid ballot rates tend to be higher where voting is compulsory, the correlates of invalid votes in those countries deserve attention. In this regard, Brazil provides an ideal case for analysing the issue. Brazil not only has the largest electorate of all democracies with compulsory voting laws, but it has also introduced electronic ballots, what has been responsible for a considerable decline in the invalid vote rates. Using data from ESEB, a public opinion survey on elections, we perform a series of logistic regressions to analyse the 2010 presidential, gubernatorial and parliamentary elections, and evaluate the impact of political disaffection and educational level on invalid voting behaviour. We also test a third explanation that so far has not received much*

*attention of scholars: the sheer lack of preference over the running candidates, regardless of distrust levels. Our analyses find that lack of preference has a significant impact on invalid voting at all government levels. Education is negatively correlated with invalid voting, but it is significant only for the presidential elections, a result that confirms the role of the complexity of Brazilian parliamentary elections on invalid voting. Low evaluation of institutions has an impact only over certain types of elections.*

**Key words:** Brazil, Elections, Invalid Votes, Opinion Survey, Political Behaviour.

## 1. Introduction

Brazil has experienced the longest democratic period in its history (Lamounier 2005; Luna and Klein 2014). Since 1989, Brazilian citizens have directly chosen their representatives in elections that have been widely recognised as free and fair by international standards (Hagopian 2005; Moisés 2005). At present, the country is the third largest democratic regime in the world and the largest polity with compulsory voting laws (Power 2009; Reid 2014).

Compulsory voting dramatically changes the utility function of the vote. Citizens who are indifferent to the outcomes of the elections still go to the polls to maintain a regular situation before the electoral laws. Therefore, some people might vote with no concern about electing the representatives that better reflect their preferences (Jackman 2001; McAllister and Makkai 1993).

Brazilian elections have seen a high rate of spoiled ballots, even when compared only with other compulsory voting countries. Nevertheless, there are important differences in the rates of invalid votes across election types in Brazil<sup>25</sup>. Elections that are marked by a high degree of complexity, such as those for the lower chamber (with a very high number of candidates and a system of proportional, open-list representation (Figueiredo and Limongi 1999)), always yield more invalid votes than other sorts of selection methods<sup>26</sup> (Power and Roberts 1995). Complex elections might drive citizens into apathy, since the

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<sup>25</sup> In this article we employ the terms “invalid” and “spoiled” votes interchangeably. In Brazil, we have two types of invalid votes: *votos nulos* (“spoiled votes”) and *votos brancos* (“blank votes”). The consequences of both types of votes for the elections outcomes are the same, although the blank votes might be an expression of abstention or lack of preferences, while *votos nulos* suggest disaffection with the regime. However, here we follow previous studies (as well as the lack of disaggregated data to study the two types separately) while considering *brancos* and *nulos* as the same thing.

<sup>26</sup> On the complexity of elections and invalid votes in other countries, see, inter alia, McAllister and Makkai (1993).

immediate benefits of voting cannot be intuitively understood, nor the final result fully comprehensible (Everson 1981). Thus, frustration may lead to invalid ballots.

One can also observe that the rate of invalid votes has changed considerably over time: in 1998, when the country introduced electronic ballots in the national elections, there was a substantial decrease in the invalid voting<sup>27</sup>. This variation is also of interest for researchers, and it adds to the importance of Brazil as a case study.

Thus far, most studies on invalid votes are conducted at the aggregated level. Borba (2008), on the other hand, addresses this question at the individual level, but the author does not evaluate the role of the lack of preferences (which could be related to electoral competition, a macro-level variable) on invalid voting<sup>28</sup>.

The present article aims to investigate the following questions: 1) what are the reasons for casting invalid votes?; and 2) are there differences in the invalid vote behaviour among different types of elections? More specifically, we intend to test three hypotheses:

H<sub>1</sub>: political disaffection leads to invalid voting, since the voters do not want to support any of the candidates due to disbelief in the political system;

H<sub>2</sub>: low educational level raises the probability of invalid voting, either because of mistakes in the ballot casting or because of the difficulty of choosing candidates due to lack of information and knowledge;

H<sub>3</sub>: the sheer lack of preferences about candidates, regardless of individual political distrust and low political information, raises the probability of invalid voting. Even after controlling for political distrust and educational level, people who declare not to see significant differences among the available candidates are more prone to spoil their ballots – instead of simply abstaining, as it would happen if voting was not an obligation.

Before proceeding to the empirical analysis, we must expose the main theoretical debates regarding invalid votes around the world and in Brazil.

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<sup>27</sup> The electronic balloting system was first tested in some locations at the 1996 municipal elections, while in 1998 it became the norm for the entire country, with only some rare exceptions where logistic issues have made it unfeasible (Tribunal Superior Eleitoral 2013).

<sup>28</sup> This study also does not employ any sort of statistical analyses to simultaneously assess the impact of many different variables on invalid voting. For that reason, Da Silva (2013) clearly affirms that more sophisticated analyses, such as logistic regressions, are needed to confirm his findings.

## 2. Theoretical Background

The majority of scholar explanations for invalid ballots revolve around two dimensions. There is the “protest vote”, fostered by political disaffection and low educational levels. The former is related to feelings of distrust and *low evaluation* of political institutions, causing voters to express that disaffection by spoiling their votes. The latter is mainly caused by “accidental invalid votes”, when people *involuntarily* spoil their votes due to mistakes while filling-up the ballots. However, educational levels can also be related to voluntary spoiled votes, when people lack the ability to decide who to vote for (Damore et al. 2012; Driscoll and Nelson 2014; Hill and Young 2007; McAllister and Makkai 1993).

Other authors have suggested *institutional features* as a third explanatory dimension for invalid voting: institutional. Power and Roberts (1995) posit that the “[...] the unusual system of open-list proportional representation” is a major reason for spoiled votes in Brazil. Such institutional factors might interact with other explanatory dimension above-mentioned: Hill and Young (2007) state that an *interaction* of the complexity of legislative elections with a lack of information and educational background is the main source for invalid votes in Australia.

Ugla (2008), in turn, finds out that *low election closeness* combined with a *high number of parties* increases invalid balloting<sup>29</sup>. Although this author, as well as Zulfikarpasic (2001), refer to the *lack of choices* as a behaviour of politically sophisticated individuals, as opposed to the “incompetent” voters that are suggested in our H2, they seem to equal such lack of choices to the protest voting behaviour. We suggest here, conversely, that *lack of choices* can exist not only in people with high levels of education and low levels of political trust (the “critical citizen” described by Norris (1998)) but also in people with high levels of both political trust and education.

Besides that, the hypothesis of *lack of preferences* as a source for invalid balloting seem not to be properly tested, especially when it comes to *individual-level studies*, where the building (or lack thereof) of preferences ultimately happens. Thus, we aim to fill this gap by

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<sup>29</sup> By closeness of elections, we mean the distance between the elected and the second most-voted candidate in a given run-off. Ugla’s analysis featured approximately 200 elections in Europe, the Americas, Australia and New Zealand. Aldashev and Mastrobuoni (2010) also find an effect of *closeness* on invalid balloting, in their study of Italian elections.

testing the role of *lack of preferences* on invalid votes at the *individual level*, and as a separate thing from low educational skills and political distrust<sup>30</sup>.

We could think of other explanations for invalid votes if we come back to the political participation literature. In fact, casting an invalid ballot in a country with compulsory voting laws (hereafter CVL) might be due to similar reasons to non-voting in countries without CVL<sup>31</sup>.

In that sense, we could apply Downs (1957) famous theory to invalid votes. Low levels of political knowledge could also cause voters to deliberately spoil their ballots for the same reasons that less-informed votes abstain (in Downs's explanation): they *prefer* to leave the decision to more informed citizens. If someone needs to attend the elections to maintain itself lawful under the electoral rules but do not feel informed about the political conjuncture in order to make a voting decision, she would cast an invalid vote. In that case, we would find support for H2 above.

We could also suggest a role for political efficacy and political interest on invalid votes. In effect, Borba (2008) finds a negative correlation between the subjective feeling of the efficacy of vote and invalid ballots in Brazil. If one is forced to vote by law but she believes that her vote does not change anything, she will spoil the ballot. Following the same logic, if one does not care at all about politics and the elections (*low political interest*), she will just cast a blank or null vote. For such reasons, we include *political interest* and *political efficacy* as control variables in the models below.

In Latin America, despite the high levels of spoiled ballots in some countries due to CVL, few scholars have addressed invalid votes. Epstein (2001) points to the waning on party identification as an important explanation for invalid ballots in Chilean elections, giving support for the “disaffection” hypothesis. Power and Garand (2007) expands Power

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<sup>30</sup> This hypothesized *lack of choices* with relatively high levels of trust and education could be related to the *macro-level* variables proposed by studies as Uggle's (2008) itself. In an environment with low numbers of parties, such as a bipartisan, majoritarian –type election, the candidates might move to the center, as suggested by Downs (1957). In opposition, a high number of parties can make things complex and make it difficult for *voters* to make a decision, as suggested by McAllister and Makkai (1993), particularly in “personal vote” electoral systems, such as Brazilian *lower chamber* (Power and Garand, 2007). That discussion, however, goes beyond the goals of the present article, not only because they are at the *macro-level*, but also because we aim to investigate here the reasons for *invalid votes*, not the reasons for *lack of preferences*.

<sup>31</sup> Dos Santos (1987) even proposes that invalid votes and abstentions should be studied together, under the umbrella concept of “electoral alienation.” However, we follow Nicolau (2002), who affirms that those two forms of electoral behaviour are inherently different and should be analysed as such. Spoiled ballots and abstentions may have the same consequences for the elections results, but they surely have different causes.

and Roberts's (1995) analysis in Brazil to 80 legislative elections in Latin America, confirming most of their findings and adding an *interactive term* for electoral system and number of parties, as above mentioned.

### **2.1. Invalid Votes in Brazil**

In spite of the country's absence of a long democratic history, elections have been virtually uninterrupted in Brazil since the country proclaimed its independence from Portugal in 1822. The coexistence of elections with non-democratic regimes turns Brazil into a paradoxical case (Nicolau 2002). Therefore, electoral habits developed in authoritarian periods might still affect the country's political culture.

One feature that has accompanied Brazilian elections even before the current democratic regime is a high rate of invalid votes. During the authoritarian regime that ruled the country from 1964 to 1985, the rate of invalid ballots for the lower house of the National Congress (*Câmara dos Deputados*) reached 30%.

As already mentioned, the complexity of the electoral system together with low levels of cognitive capacity and information causes some people to spoil their votes by accident (Moisés 2010). However, "protest voting" seems to play a role here as well (Skidmore, 1988). For Moisés (1990), in turn, there was a "plebiscitary voting" culture: those who supported the regime voted for ARENA (the party that represented the military), while those who were opposed to it voted either for the MDB (the opposition party) or spoiled their vote. The institution of compulsory voting itself was also seen as a source of protest voting (Moisés 2010).

This trend has remained and even sharpened in the wake of the democratic regime: in 1990 and 1994, the rates of spoiled ballots reached 40% and 44%, respectively. Nevertheless, such figures have plummeted after the introduction of electronic ballots. The impact was stronger exactly in the elections with higher complexity and higher historical levels of invalid ballots: the legislative elections in the national (Nicolau 2004) and municipal levels (Fleischer 2002).

In that way, it is highly conceivable that after 1998 the invalid votes could be better explained by other factors than the unintentional spoiling, mainly the political culture. If the spoiled ballots by accident have diminished (the only plausible explanation for the impact of the *urna eletrônica*<sup>32</sup>, since many ballots were spoiled before because the voter had

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<sup>32</sup> Portuguese for "electronic ballot box".

not filled them correctly), the bulk of the remaining invalid votes are most probably a vote of protest; lack of political interest and/or lack of preferences over the candidates. However, as previously mentioned, people with lower educational levels might *intentionally* leave the electoral decisions for the ones with higher cognitive skills. Therefore, even after the changes introduced by the *electronic ballots* (fewer *accidental* spoilings), we might still find support for H2 above.

### 3. Research Design

#### 3.1. Methods and Data

We employ data from ESEB (Brazilian Electoral Studies), a public opinion poll taken with 2000 people right after the major elections held in 2010, to perform a series of Bayesian logistic regressions in order to assess, at the individual level, the impact of education, political efficacy, political knowledge and lack of preferences on invalid voting behaviour.

Bayesian inference has several advantages over its more famous counterpart, frequentist inference. Bayesian inference has an uncontested axiomatic foundation (Cox 1946; Savage 1954), an intuitive interpretation of probabilities (Eberly and Casella 2003), and provide more information than classical statistics (Kruschke 2010). The Bayesian approach to data analysis starts with *a priori* beliefs of the world – probability distributions that either reflect previous knowledge or show ignorance about the parameters (Koop et al. 2007: 79–91) – then updates those beliefs with information contained in the data using Bayes' Theorem. The result is an *a posteriori* distribution for each parameter of interest.

Therefore, the posterior distribution represents a sort of compromise between our prior understanding of the world and the data we have at hand. A great advantage of using posterior distributions instead of point estimates is that “[...] anything we want to know about a random variable  $\theta$  can be learned by sampling many times from  $f(\theta)$ , the density of  $\theta$ ” (Jackman 2009: 134). That is, according to the law of large numbers, any quantity of interest can be easily approximated by drawing more random samples from our simulation based estimate of the parameter we want to know (Jackman 2009: 138). Such procedure is usually carried out with Markov Chain Monte Carlo (MCMC) methods (Robert and Casella 2004).

This has profound implications to the understanding of the model parameters. For instance, if we are sampling from a probability distribution, the parameters' intervals have

an intuitive interpretation: given the prior and the model, there is indeed a 95% chance of the true value being within that area of the posterior distribution (Chen and Shao 1999). This is much more useful for scholars than the frequentist confidence interval, which is the 0 or 1 probability that the true value  $\theta$  is included in the interval, given that the sample is repeated many times. Frequentists know, on the one hand, that 95 out of 100 confidence intervals have the true value within them, but they *cannot know*, on the other hand, if the specific sample they have at hand contains the true value or not (Greenberg 2012: 31). As noted by Bolstad (2007, xxi) “Bayesian methods often outperform frequentist methods, even when judged by frequentist criteria” such as the interpretation and accuracy of confidence intervals.

We have decided to take a more sceptic stance in this paper and our choice of priors reflect our lack of certainty about the true values of the dependent variables employed in the models below. We have opted for weakly informative multivariate normal distributions for all the estimated parameters. The priors have mean zero and a precision parameter (1/variance) of 0.001. This choice of priors reflects our ignorance of the parameters’ true values and should have very limited influence on the posterior distributions.

The statistical analyses were performed with the R statistical language version 3.1.2 (R Core Team 2014). We have employed the MCMCpack package (version 1.3-3) to estimate the models presented in this paper (Martin, Quinn and Park 2015). MCMCpack is fast, uses a very intuitive syntax, fits several models, and enables one to easily incorporate any choice of priors to the estimations.

The ESEB dataset is sampled with a high concern for regional differences in Brazil. Three selection stages were employed to define the samples: first, at the town-level; secondly, at the *census sector* level and finally, at the residency level. The research institute considers the political-administrative divisions of the Brazilian territory, making sure that all regions (and all state capitals) are represented in the final sample. The towns where the interviews were conducted were randomly selected in order to attend the proportionality among the 5 Brazilian macro-regions: *Norte, Nordeste, Centro-Oeste, Sudeste e Sul*, although in order to increase statistical powers the Norte and Centro-Oeste regions were merged in the

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<sup>33</sup> Portuguese for North, Northeast, Middle-West or Center-West, Southeast and South. These macro-regions have important socioeconomic and political differences, and the different electoral behavior among them is stated by studies such as Costa (2007).



final data set<sup>33</sup>. The final number of observations (about 2000) is approximately the same used for any presidential poll conducted in the country<sup>34</sup>.

### **3.2 Variables**

Our dependent variables are dichotomous, coded as  $y = 0$  if the interviewee says she voted for a candidate or party and  $y = 1$  if the person says it cast an invalid ballot in the following 2010 elections: President (1<sup>st</sup> round), President (2<sup>nd</sup> round), State Governor (1<sup>st</sup> round)<sup>35</sup>, Federal and State Deputies<sup>36</sup>. Abstentions were coded as missing. “Age-facultative” individuals, i.e., people for whom voting is voluntary because they are under 18 or above 70 years old, were also dropped out from the analysis. The relationship between CVL and invalid voting that underlies the present article would not be appropriately. Besides that, invalid votes among this population are very rare (in the ESEB sample only 1 person within these age ranges cast an invalid ballot on the Presidential elections first round, for example). The independent variables are:

#### 1. Socio-economic resources:

- houseincome (House income)
- education (Education level in 10 categories)

#### 2. Political culture:

- pref\_cand (dummy for the question: "Did any of the candidates/parties represented your view in the elections?")
- pref\_part (dummy for the question: "Is there any political party that represents your views?")

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<sup>34</sup> See, inter alia, the Datafolha website, one of Brazil's largest electoral polling firms: [http://datafolha.folha.uol.com.br/duvidas/pesquisas\\_eleitorais.shtml](http://datafolha.folha.uol.com.br/duvidas/pesquisas_eleitorais.shtml) Access: 11th April, 2015 (in Portuguese).

<sup>35</sup> Governor's second round happens only in some states, since there are two-rounds only if the most voted candidate does not achieve more than 50%.

<sup>36</sup> The elections for Senator were not included since ESEB data set, for some reason, did not differentiate invalid votes from abstention.

- govevaluation (Evaluation of Federal Government – 6 levels)<sup>37</sup>
- congressev (Evaluation of National Congress – 6 levels)
- partyeval (Evaluation of political parties – 6 levels)
- knowledge (Index of political knowledge based on X questions)
- efficacyvote ("To what degree do you think voting influences what happens in Brazil?" – 5 levels)

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<sup>37</sup> ESEB features evaluation of political institutions instead of trust in those institutions, like other public opinions usually do. Although these two concepts are different, they seem close enough to each other to make feasible the hypotheses tests that we propose here.

Descriptive statistics can be seen in Table 1 below.

**Table 1: Descriptive Statistics**

Statistic	N	Mean	St. Dev.	Min	Max
inv_pres1	1,807	0.04	0.19	0	1
inv_pres2	1,775	0.05	0.22	0	1
inv_federal	1,184	0.22	0.42	0	1
inv_estadual	1,267	0.22	0.42	0	1
inv_gov	1,726	0.08	0.27	0	1
pref_cand	1,884	1.30	0.46	1	2
pref_part	1,908	1.52	0.50	1	2
inv_gov2	235	0.06	0.24	0	1
houseincome	1,770	713.35	751.27	24.00	10,201.00
Male	1,922	0.48	0.50	0	1
efficacygov	1,898	4.34	1.16	1	5
efficacyvote	1,910	4.39	1.15	1	5
congressev	1,741	3.19	1.50	1	6
wouldvote	1,813	1.48	0.50	1	2
Right	1,063	6.31	3.19	0	10
partyeval	1,787	3.21	1.42	1	6
knowledge	1,904	5.59	3.14	0	17
interest	1,908	2.43	0.85	1	4
education	1,922	5.13	2.25	1	10
Age	1,922	39.73	14.36	18	70
gov.evaluation	1,860	4.17	1.28	1	6

Source: Authors.

### 3.3 Main Hypotheses

In this paper we test the following hypotheses:

H<sub>1</sub>: political disaffection leads to invalid voting, since the voters do not want to support any of the candidates;

As previously mentioned, Brazilian levels of political trust are relatively low even though they have decreased for most countries lately. Therefore, one can suppose that dissatisfaction with political institutions would be a major reason for spoiling ballots.

H<sub>2</sub>: socioeconomic variables are unrelated to invalid voting after the electronic system was introduced;

H<sub>2a</sub>: low educational level raises the probability of either because of mistakes in the ballot casting or because of the difficulty of choosing candidates due to lack of information and knowledge.

Although we sustain that socioeconomic resources should have low explanatory power over invalid ballots after the introduction of the *urna eletrônica*, it is still possible that socioeconomic resources are correlated with invalid votes. Voters can still make mistakes at the poll that lead them to spoil their ballots by accident even after the electronic system, and those accidental votes are more usual among people with low education levels. Moreover, as we already mentioned, low education might explain not only unintentional spoiling, but also the "abstention behaviour" of voters that just do not know for whom to vote and prefer to leave the decision for the more informed. Thus, we expect either a negative correlation or no correlation of education and income with invalid votes.

H<sub>3</sub>: the sheer lack of preferences over the candidates, despite of political distrust and low political information levels raises the probability of invalid voting.

People can be interested, informed, and even hopeful about politics, but they might *still* not have a clear preference over the candidates. This trend might have macro-level causes: a high number of candidates could result in indecision of voters and, consequently, spoiled ballots (McAllister and Makkai, 1993), particularly in systems where "personal vote" is favoured (Power and Garand, 2007). On the other hand, low levels of political competition also might increase invalid voting, as Uggla (2008) and Aldashev and Mastrobuoni (2010) have shown.

We try to address that issue at the individual level (since an analysis on the role of electoral systems on the *lack of preferences* would require a completely different research design). More precisely, we seek a correlation between invalid votes and the citizens' own statements about their preference over the candidates and parties.

## 4. Analysis

We first ran the core models with all the dependent variables and party evaluation as the in-dependent variable to assess the impact of political disaffection on invalid voting (Table 2). In Table 3 we ran another set of models with preference as an independent variable, using candidate preference for the contests where it was available (Presidential elections) and party preference in the other cases. Table 4 features independent variables for institutional evaluation that are more directly related to each contest: federal government evaluation (for presidential elections), and National Congress (for federal deputies). We present the means and standard deviations of the posterior distributions below. They are equivalent to the expected values of the coefficients and the standard error in the frequentist framework. Thus, the mean  $\pm$  1.96 standard deviation of the posterior distribution corresponds to the 95% confidence interval in frequentist statistics.

Table 2 shows that education has a positive effect for presidential vote, being more than two standard deviations from zero. However, for other dependent variables the effect of education is not so clear and the parameter fails to achieve standard levels of significance. As for efficacy vote, the variable has a negative impact on invalid voting for president, but its effects are not distinguishable from zero in the last three models. Conversely, party eval and knowledge have a consistent, negative effect on all dependent variables. The impact of these last two variables is also considerably larger than the first ones, thus suggesting that they are relevant factors to understand the incidence of invalid votes (See Table 2 next page) .

**Table 2: Logistic Estimations for Invalid Voting**

	Dependent variable:				
	inv_pres1	inv_pres2	inv_gov	inv_federal	inv_estadual
	(1)	(2)	(3)	(4)	(5)
Houseincome	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
education	0.23 (0.08)	0.24 (0.06)	0.06 (0.05)	-0.01 (0.04)	-0.00 (0.04)
efficacyvote	-0.24 (0.09)	-0.20 (0.08)	-0.05 (0.08)	-0.06 (0.07)	-0.07 (0.06)
partyeval	-0.26 (0.10)	-0.19 (0.08)	-0.30 (0.07)	-0.36 (0.06)	-0.25 (0.06)
knowledge	-0.33 (0.07)	-0.11 (0.04)	-0.22 (0.04)	-0.16 (0.03)	-0.15 (0.03)
constant	-1.46 (0.65)	-2.22 (0.56)	-0.48 (0.48)	0.88 (0.40)	0.47 (0.37)
Observations	1,520	1,496	1,461	1,079	1,085

Source: Authors.

Table 4 presents our last series of models. Once again, education is positively associated with the invalid voting for president, as is govevaluation. When taking a looser confidence interval (close to 1), knowledge appears to be different from zero in all models, as are the other two variables for political preferences.

What can we say about the models taken together? Evaluation of institutions (be it political parties, Executive or Legislative Branches) have a negative correlation different from zero with invalid votes in all models, what lends support to  $H_1$ . Political disaffection has become a common feeling among Brazilians, and it seems that this anger is being expressed mainly through spoiled ballots.

Political knowledge also presents a negative correlation in all models. Since we lack a proper measure of political interest, that might reflect a negative correlation between interest and invalid voting. Moreover, in these models the coefficient for knowledge was still statistically different than zero, suggesting that the importance of information for casting a valid ballot goes beyond the interest in politics.

What would be the role of education then? Surely, that is the most surprising result of our regression models. Education showed a positive correlation with means that are statistically different than zero in some models, mainly the ones for presidential elections. There seem to be only two possible explanations for that: either those results were achieved at random, or the act of spoiling the ballot is becoming more and more a behaviour of “critical citizens” than anything else. However, we would expect a critical citizen to know a little bit more about politics. Maybe there are two different types of invalid voters, one with this critical, politically disaffected profile; the other more alienated and misinformed about politics. Our research design does not allow us to draw conclusions about that, but the correlation between political knowledge and disaffection amongst voters who have spoiled their ballots is, indeed, close to zero (-0.05 and 0.06 for party evaluation and government evaluation amongst people who spoiled the vote in the first round of presidential elections).

**Table 4: Logistic Estimations for Invalid Voting**

	Dependent variable		
	inv_pres1	inv_pres2	inv_federal
	(1)	(2)	(3)
houseincome	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
education	0.24 (0.07)	0.23 (0.06)	−0.02 (0.04)
efficacyvote	−0.31 (0.10)	−0.23 (0.08)	−0.08 (0.07)
govevaluation	−0.37 (0.10)	−0.29 (0.08)	
congressev			−0.33 (0.06)
knowledge	−0.27 (0.06)	−0.07 (0.04)	−0.16 (0.03)
pref_part	1.23 (0.36)		0.56 (0.17)
pref_cand		0.67 (0.24)	
constant	−2.99 (0.99)	−2.66 (0.72)	0.05 (0.53)
Observations	1,575	1,526	991

Source: Authors.



Whatever is the actual relationship between education and invalid voting, the fact is that we cannot reject either  $H_2$  or  $H_{2a}$  based upon our results. Nevertheless, it seems that political alienation is more the case than accidental votes here (since the latter is known to be highly related to low levels of formal education). Future investigations on that issue could confirm that<sup>38</sup>.

Political efficacy also showed a correlation in the expected direction (statistically different from zero only for presidential elections), giving strength to the idea that some voters spoil their ballots because they do not care about the results of elections.

Both party preference and candidate preference (where such data were available) presented a relevant correlation with invalid voting, lending support to  $H_3$ . Lack of specific data on preference over candidates for other than presidential elections disallow us to make stronger statements about that issue, but the results were robust along many different specifications. Nevertheless, party preference is known to be highly correlated with the formation of a preference over the candidates, according to many previous studies, suggesting that, even if it is not the main variable to test here, it is a good proxy.

Further studies are also needed in order to explore the relationships of this micro-level tendency with macro-level propositions. Nevertheless, our findings suggest that hesitation and indifference over the candidates play a role in spoiled ballots regardless of political disaffection, alienation or anything else.

## 5. Discussion

The results of our analyses show that political knowledge and evaluation of political institutions are powerful predictors of invalid voting. Since we failed to find a negative correlation between education and invalid votes, the profile of the “spoiler voter” that we drafted here is that of someone who holds a negative view of political institutions and/or does not care about politics and elections.

If we reflect upon the combined role of political efficacy and low evaluation of institutions, the models suggest that invalid votes may be an effect of voters’ perceived distance to the public sphere and their disenchantment with political institutions. This

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<sup>38</sup> The authors thank Jairo Nicolau for having suggested experiments with ballot boxes as a way to confirm that accidental spoiling in Brazil is not a common phenomena in the electronic ballot system.

widespread feeling surely has structural, macro-level roots, which go beyond the sheer number of candidates or distance between winner and losers (the two main indicators that scholars often use in order to account for electoral competition). In effect, Moisés (2011) goes against the positive view on the high concentration of powers on the Executive branch that has established in the 1990's among Brazilian political science, especially after Limongi and Figueiredo's 1998 seminal text. To Moisés, the Brazilian coalition presidentialism's reliance on presidential powers to govern weakens legislative opposition and it is one of the reasons for the growing unpopularity of the Congress.

Without the intention of getting into that discussion, it is worth to note here that in the Brazilian case the effective number of parties is far from adequate to measure electoral competition. It can be well that, as our third hypothesis suggests, some voters spoil their ballots because they can barely identify the differences between candidates/parties, not necessarily because they have low information, but because such differences are not clear. It is not easy for voters to identify the positions of so many candidates and parties in a country marked by electoral volatility<sup>39</sup>. However, disaffection towards institutions, elections and even CVL themselves seem to play an important role here.

To sum up, if at the one hand spoiled ballots in contemporary Brazil are an act of critical citizens, on the other, they might be a consequence of alienation and political "cynicism". Political efficacy is related to both types of invalid votes, as a consequence of disaffection and a cause of alienation. Positive coefficients for education suggest that the negative correlation between knowledge and invalid votes is a matter of absence of interest more than socioeconomic limitations.

Future research could address some questions raised here, like the vanishing of accidental ballot spoiling or other issues that go beyond invalid votes, like the relationship of macro-level factors (electoral competition, electoral system complexity, etc.) with party and candidate preference, political alienation, and disaffection. Nevertheless, the present article attempted to draw some conclusions about invalid votes and, more broadly, the behaviour of citizens under compulsory voting and persisting dissatisfaction with political institutions.

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<sup>39</sup>Although many authors believe that volatility is vanishing, Kinzo (2006) affirms that Brazilian party-system is unstable and parties fail to provide a "brand" for voters.

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