

Do Government Audits Affect Campaign Communication?

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Abstract

This paper explores the impact of a program that randomly audits Brazilian municipalities for their utilization of federal funds on politicians' proposals. Using 11,422 mayoral election manifestos, the results indicate that the audits led to increased discussion of the policy areas covered by the audit by opposition parties in high-corruption cities. Moreover, in low-corruption cities, opposition parties discussed fewer bureaucratic issues while incumbents discussed them more. In high-corruption municipalities that were audited, incumbents used more populist language and opposition candidates adopted a more extremist language, compared to those in non-audited municipalities. These findings suggest that politicians respond to the dissemination of information about government actions by adjusting their agendas and rhetoric, although the effects vary between opposition and incumbent parties.

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1 Introduction

As fake news, populist rhetoric, and hateful communication become increasingly prevalent, concerns about their real-world consequences have risen. This has led to a growing interest in understanding how politicians select and communicate their message. Corruption scandals, among other factors, contribute to a growing mistrust of democratic institutions (Berman, 2021). At the same time this has been happening in the West, in 2003, Brazil introduced an anti-corruption program to increase government transparency and reduce corruption, which has been successful. Does the disclosure of information about the use of public funds affect what politicians propose to the voters and the language they use to communicate these proposals in an electoral campaign?

This paper analyzes the impact of transparency policies, specifically audits aimed at detecting financial irregularities, on politicians' agendas and communication strategies during electoral campaigns. The results show that, depending on the level of corruption, candidates in audited municipalities exhibit a different composition of their agendas and a different political positioning in comparison to candidates in non-audited municipalities. This suggests that the reputation shocks resulting from audits have an effect on how candidates address specific policy issues and the type of language they employ in their campaigns, including the usage of populist, partisan, and extremist rhetoric.

To do so, I analyzed a corpus of 11,422 party manifestos from mayoral candidates in the 2012 elections. These manifestos, which represent 71% of the total number of candidates participating in that election, were mandatory to submit and publicly available online. Using text-learning methods, I estimated the share of each of the six policy issues in the manifestos, as well as the usage of populist, partisan, and extremist language. These manifestos serve as a useful tool to gain insight into politicians' priorities and communication strategies (Cagé, Le Pennec, & Mougin, 2022; Catalinac, 2018; Le Pennec, 2022; Williams, Seki, & Whitten, 2016).

The independent variables for the study come from the random audit program in Brazil

conducted between 2003 and 2015. The program examined the use of public funds by municipalities, with approximately 60 municipalities audited in each of the 13 rounds (out of 40 that were performed) that were performed between 2009 and 2013. The purpose of the program was to prevent corruption and misuse of funds, and its effectiveness has been shown in two previous studies (Avis, Ferraz, & Finan, 2018; Ferraz & Finan, 2008). Audits generated a flow of data by disseminating information about public affairs to politicians, including incumbents and candidates, as well as the electorate. They also resulted in reputation shocks, either detrimental due to high levels of corruption uncovered or beneficial if low levels of corruption were revealed. In the analysis, separate comparisons of incumbents' and challengers' manifestos are conducted between audited and non-audited municipalities. To assess the impact of reputation shocks, I interact the audit dummy variable with another variable that indicates whether the number of corruption cases found was above or below the median (which I call high and low). The comparison focuses on candidates (incumbents or challengers) from cities whose audit reports were available either before or after the election, based on previous research designs (Ferraz & Finan, 2008; Poblete-Cazenave, 2021).

This paper finds, first, that an audit affects the distribution of topics included in a manifesto for incumbents in low-corruption municipalities and for challengers in low and high-corruption cities. I compute, for each line of text, the probability of addressing six policy issues. I compute the sum of these probabilities for each document which represents the predicted share of each document dedicated to each of the six policy issues. In low-corruption municipalities, an audit makes incumbents discuss more administrative issues, while it makes challengers discuss less about that topic (also more about health and economics and less about crime). In the high-corruption cities, the incumbents' agenda is not different in audited cities than in non-audited cities. In contrast, challengers in those municipalities address more health policy issues after an audit. I developed additional tests that show that this effect on the discussion about health is driven by the fact that several rounds of audits were about the use of funds in the health sector.

Next, I show that an audit in high-corruption cities results in the incumbent becoming more populist, while it results in the challenger becoming more extreme and less partisan. For the first dimension, I use a dictionary to categorize words as populist or non-populist, and I analyze the frequency of these words in the proposals made by candidates (Gennaro, Lecce, & Morelli, 2021; Mendes, 2021). To estimate extremeness and partisanship, I follow Le Pennec (2022) by using a supervised method in which labels are assigned using the known political orientation of Brazilian political parties. First, I score each manifesto on the left-right axis and measure extremeness by looking at the distance to the center. I also measure partisanship by examining how different each manifesto is from the other manifestos in the same party. In low-corruption cities, an audit (which represents a positive reputation shock for the mayor) makes the challenger to adopt a manifesto more similar to the rest of manifestos in the same party.

To sum up, the paper’s findings demonstrate that politicians respond to audits by altering their agendas and rhetoric. These changes can have an impact on electoral accountability and the priorities of political discourse. The results indicate that incumbents increase the use of populist words and extremeness after an audit when there is a high number of corruption cases, and that audits shape the political communication strategies of politicians by influencing the topics addressed in their proposals. Politicians are strategic by choosing the topics they have an advantage to be the ones to address.

Literature review. This study is a contribution to multiple research fields. It focuses on the impact of increased government information on electoral accountability and politicians’ decisions. While previous studies have demonstrated politicians’ reactions to the disclosure of information about them in terms of effort and electoral choices, the effects of reputation shocks from new information on candidates’ agendas and the political positioning of their proposals have yet to be explored. The literature suggests that voters’ reactions to politicians’ actions may vary based on the amount of information they have available to them (Arias, Balán, Larreguy, Marshall, & Querubín, 2019; Banerjee, Green, McManus, & Pande,

2014; Boas, Hidalgo, & Melo, 2019; Ferraz & Finan, 2008; Snyder Jr & Strömberg, 2010). In Snyder Jr and Strömberg (2010), the authors investigate politicians' responses to the dissemination of information about their actions. They find that when voters have more information about their representatives, the representatives are more likely to attend congressional hearings, and their committee participation is also affected. Cavalcanti, Daniele, and Galletta (2018) discovered that auditing influenced the quality of incumbent coalition candidates, with low corruption levels decreasing candidate quality as measured by education years, while high corruption levels improved candidate quality. Finally, Poblete-Cazenave (2021) found that auditing alone did not change campaign spending by incumbents or challengers but revealed that high corruption levels led to increased campaign spending by both groups, while low corruption reduced spending.

This study also contributes to the growing body of research on the factors driving the rise of populism and extremism. To the best of my knowledge, the effect of changes in the informational environment on populism has not been previously studied. Additionally, this study shows how the supply of populism changes in a high-corruption and low-corruption setting. Berman (2021) mentions the role of corruption in the rise of populism in their discussion of the determinants of populism. Previous work by Guriev and Papaioannou (2022) has reviewed the impact of trade globalization and automation, cultural values and immigration, and media changes on populism. Berman (2021) examines the literature on the relationship between economic hardship, cultural shifts, and changes to democratic institutions and their role in shaping public perceptions and driving dissatisfaction. The paper also explores voluntarist theories that suggest populism is a deliberate choice made by politicians and parties to attract more votes. Gennaro et al. (2021) studies, with text analysis methods, whether candidates strategically employ populist language and finds that outsider candidates are more likely to use it, particularly when addressing disillusioned and economically insecure voters in competitive elections. Furthermore, this paper contributes to the theoretical literature that analyzes how politicians respond with their policy positions and political agenda

to changes in reputation by conducting empirical tests (e.g. Bernhardt, Buisseret, & Hidir, 2020; Dragu & Fan, 2016; Serra, 2010).

This paper expands on the existing literature that employs text analysis to examine political issues. It does so by investigating a new factor that can impact communication strategies - information about government actions, specifically audits. The study finds that audits can influence the topics discussed in subsequent elections and affect the usage of populist and extremist content, particularly in the case of a negative reputation shock. Several previous studies have analyzed politicians' speeches (e.g. Gennaro et al., 2021) and written proposals (manifestos) to better understand communication strategies. For example, Le Pennec (2022) found that French congressional candidates are influenced by their parties but may deviate from their party's language in the second round of elections to attract voters from other political affiliations. Cagé et al. (2022) showed that regulations on campaign donations can impact political communication, with a ban on corporate donations resulting in more polarized language from non-mainstream parties. Catalinac (2018) studied party manifestos and measured the political ideologies of the candidates, finding that the choice of electoral system can impact their language choices. Meanwhile, Crabtree, Golder, Gschwend, and Indriason (2020) examined the effect of the economic context on emotions across European parties, highlighting the strategic nature of these texts.

Finally, this paper is similar to previous research that has looked into the effects of disclosing information about government actions, specifically audits. These studies have shown that audits can have an impact on corruption, economic activity, and hiring practices Avis et al. (2018); Colonnelli and Prem (2020); Ferraz and Finan (2008, 2011); Gonzales (2021); Lauletta, Rossi, and Ruzzier (2020). For instance, Amorim (2022) found that transfers for the health sector from the federal government decreased in municipalities with a high number of irregularities after being audited. This study builds on this existing body of work by examining the impact of audits on politicians, both incumbents and challengers. Specifically, it looks at the effects on the political positioning and agenda of local political leaders, which

could have medium and long-term effects.

The paper is structured as follows: Section 2 introduces the institutional context and data. Section 3 discusses the potential mechanisms in the interplay between the audits and the manifestos' content. Section 4 outlines the empirical approach. Section 5 empirically evaluates the impact of audits on politicians' agendas. Section 6 empirically explores the effect of audits on politicians' rhetoric. The papers' conclusions are in section 7.

2 Background and Data

2.1 Brazilian Anti-Corruption Audit Program

The Brazilian Federal Government initiated the random audit program in 2003, which was later transformed into a new program with different characteristics in 2015. The program aimed to monitor the use of public funds by local municipalities through the Controladoria Geral da Uniao (CGU) by auditing municipalities chosen through a public lottery. All municipalities with a population under 500,000 were eligible to participate. Once selected, 10-15 CGU auditors would visit the municipality for 1-2 weeks to gather information and documentation on their use of funds over the past 3-4 years. The auditors then compiled a report, which was sent to the city council, prosecutors, and published on the CGU's website.

Over 40 editions, 1955 municipalities were audited in 2180 inspections. The probability of being audited varied for mayors depending on the state and the time period of the audit (Avis et al., 2018). The number of lotteries and municipalities audited changed over time. From lotteries 28 to 33, smaller municipalities were audited in all sectors, while larger ones were audited in specified sectors (see Table 8 to see the areas that were audited according to the municipality's population). After lottery 34, all municipalities were audited in designated sectors at the time of the lottery.¹

Researchers have used the data collected from the random audit program in Brazil to

¹Avis et al. (2018) and Ferraz and Finan (2008) make a complete description of this program.

study its impact on corruption and other variables. The findings showed that the audits influenced election outcomes (Ferraz & Finan, 2008) and helped reduce corruption levels over time (Avis et al., 2018). Other studies, such as those by Ferraz and Finan (2011), Brollo and Troiano (2016), Colonnelli and Prem (2020), have also used the data to investigate the effects of the audits.

In my analysis, I use the CGU’s audit data to evaluate the impact of audits on the use of public funds. I focus on municipalities that were audited prior to the 2012 election (from lotteries 28 and later). To measure the effect of audits, I use CGU data that shows the level of corruption found in each audit. I classify acts of moderate or severe corruption as corruption cases, following the methodology of Avis et al. (2018), grouping both kinds of irregularities into one category. For each audit, I also have data on the number of irregularities found in each sector (Table 9). This allows me to examine the impact of audits on election results while taking into account the number of corruption cases. Finally, I only include municipalities with a population of less than 500,000 and exclude capital cities in my sample to ensure that the group of audited and the group of non-audited municipalities are similar.

2.2 2012 Municipal Elections and Municipality Characteristics

Brazil is comprised of 5,568 municipalities that are responsible for providing essential services, such as water, sanitation, health, and education, among others. Characteristics data for these municipalities were obtained from the 2011 Pesquisa de Informações Básicas Municipais (MUNIC) survey conducted by the Statistics and Geography Institute (IBGE). The mayors of these municipalities are elected every four years in October elections, which also include elections for vice-mayors and city councilors. In cities with a population over 200,000, a second round of elections is only held if no candidate receives more than 50% of the valid votes in the first round.

The data for the 2012 municipal elections in Brazil was obtained from the Superior Electoral Court (TSE). This data also provided information about the candidates’ characteristics

and showed that the candidates in both audited and non-audited municipalities were similar. In these elections, it is common for more than two parties to compete, and national parties often form coalitions to support a mayoral candidate. It is important to note that mayors in Brazil can only be re-elected once for consecutive terms. Table 1 shows the means of candidates’ characteristics, which overall are similar in both audited and non-audited municipalities. 31 parties have candidates. ”In the 2012 municipal elections, three parties had more than 10% of the total number of candidates: the Brazilian Social-Democratic Party (PSDB) with 15%, the Workers’ Party (PT) with 12.3%, and the Brazilian Democratic Movement (MDB) with 10.8%.

Table 1: Candidates Characteristics in Audited and Non-Audited Municipalities

	Non-audited		Audited	
	Mean	S.D.	Mean	S.D.
Female (%)	0.13	0.34	0.14	0.35
College Studies (%)	0.57	0.50	0.55	0.50
PT (%)	0.12	0.33	0.11	0.31
Same party Governor (%)	0.15	0.36	0.14	0.35
Age	48.42	14.10	48.60	10.54
N	9989		970	

This table shows means and standard deviations for candidates’ characteristics according to whether the municipalities where they are running were audited or not. Only candidates for which a manifesto was retrieved are considered. Data from TSE.

2.3 Party Manifestos

According to the electoral law, candidates running for mayor must submit their manifestos prior to the election. This has been a requirement since 2009 for all mayoral, gubernatorial, and presidential candidates. Consequently, the manifestos from the 2012, 2016, and 2020 municipal elections can be found on the Electoral Authority (Tribunal Superior Eleitoral - TSE) website, as well as on various news outlets and the personal websites of each candidate.

The dataset used for this study was constructed by obtaining the manifesto documents in PDF format from the TSE website. For the 2012 election, a total of 16,173 documents were

uploaded, out of which 13,724 were retrieved. After preprocessing, 11,422 texts from 5,140 municipalities were available (the preprocessing steps and exclusion criteria are explained in the appendix). Each manifesto was linked to the candidate data using a unique identifier obtained during data scraping.

The average number of words per manifesto was 2447, with a median of 1678. However, due to some of the manifestos being very short, not in text format (such as scanned images), or not properly read during scraping, only the manifestos with more than 100 words were used for the analysis. This resulted in a total of 10,598 manifestos being used for the analysis.

2.3.1 Proposals' Topics

The manifestos were organized into topics using headings. The entire corpus consisted of 3,445,957 lines. On average, each line contained 7.6 words. Thus, to determine which topic each line discussed, a Multinomial Naive Bayes classifier was used to assign probabilities to each line of text into ten topics: six specific (Administrative/Bureaucracy, Social, Health, Urban, Economics, and Crime), two general (Titles and Introduction), and two residual (Other topics, Unrecognizable words). Examples of headings for each topic can be found in Table 10.

A sample of 100 manifestos (1%) was manually classified into topics. To train and fine-tune the model, and then apply it to the entire corpus, I first follow some preprocessing steps, as described in Appendix C. The final policy issues' distribution is presented in Table 11.

The process of classifying each line regarding the policy issue they discussed involved, first, creating a vector of word frequencies for each line L , with frequency 0 if the word was not in the line. The algorithm used a Multinomial Naive Bayes classifier to calculate $P(w|C_k)$ for each word w and topic C_k . This machine learning algorithm, commonly used for text classification, uses the Bayes theorem and the independence assumption (naive assumption) between features. In this paper, each line L is a bag of words, with each word as a feature. The algorithm calculates the likelihood of L given each topic C_k based on the presence of

certain words. Let

$$P(L|C_k) = \frac{\text{prior} \times \text{likelihood}}{\text{evidence}} = \frac{(\sum_{i=1}^n w_i)! \times \prod_{i=1}^n p(w_i|C_k)}{\prod_{i=1}^n w_i!} \quad (1)$$

I used an 80-20 train-test split. I calculated two predictions: a soft prediction and a hard prediction. The soft prediction calculates the probability of each line being classified into each topic. After computing $P(L|C_K)$ for each line L , I calculated π_K for each document d by multiplying these probabilities by the number of words in the line and dividing it by the total number of words in the document. d_k measures the predicted share of the document that discusses topic k .

$$d_k = \sum_{L \in d} P(L|C_K) \times \frac{|w \in L|}{|w \in d|} \quad (2)$$

where $|\cdot|$ indicates the cardinality of the set.

For the hard prediction, I assigned each line to the topic with the highest probability. I created a binary variable for each topic to determine if the line belongs to topic k or not. Then, I also multiply it by the share of words in document d that correspond to that line.

$$\omega_k = \sum_{L \in d} \mathbf{1}[k \in \arg \max_k P(L|C_K)] \times \frac{|w \in L|}{|w \in d|} \quad (3)$$

This method provides an accuracy of 62%.

Table 11 shows the distribution of the share of the document dedicated to each topic.

2.3.2 Partisanship and Extremeness

Extremeness

To measure to what degree a manifesto of a candidate is similar to the other manifestos of that candidate's party, I follow Le Pennec (2022) and compute partisan scores for each document. This paper built on the *Wordscores* method (Laver, Benoit, & Garry, 2003). To do that, I first labeled each party on whether they are left-wing, right-wing, or center

as explained in Appendix E. The approach uses the word counts in each document.² I computed the frequencies p_w^R and p_w^L that represent how frequent a word w is in all the manifestos in the left or right

$$p_w^i = \frac{\sum_{j \in ic_{wj}}}{\sum_{j \in im_j}}$$

where c_{wj} is the counts of word w in document j , and m_j is the total number of words of document j .

Using these frequencies, I can compute the right-score of each word w

$$s_w = \frac{p_w^R}{p_w^R + p_w^L} - \frac{p_w^L}{p_w^R + p_w^L} \quad (4)$$

A word that is only being used by right-wing parties will receive a score of 1, while a word only used by left parties would get a score of -1. In Table B we can see the words that received the highest scores for the right-wing and left-wing parties. The ones on the left show a language that is usually related to parties with a socialist ideology (socialism, capitalist, privatization, dominant, etc.), plus specific words such as petistas (member of the PT). On the right-wing side, there are several words related to party names, such as democrats, progress and christian. There are other words related to agropecuarian issues, such as pigsties and abacaxi, or specific agropecuarian policies such as CIDASC and EPAGRI.

A manifesto j score is then calculated by:

$$S_j = \frac{\sum_w p_{wj} \times s_w}{S_R} \quad (5)$$

where S_R is the score of the aggregation of all the manifestos of the right-wing group.³

S_j is the positioning of a party in the left-right axis. I compute $|S_j|$ as a measure of Extremeness.

²In the process of computing manifestos' score, I applied the same steps as described in appendix Appendix C. I also excluded any word present in more than 95% of the manifestos, or that is present in less than 0.5% of the manifestos.

³This is done to preserve the distance between the reference texts (Martin & Vanberg, 2008)

Partisanship

To measure Partisanship, instead of defining three labels (left, right and center), I define a label for each party. For party t , I compute

$$s_w = \frac{p_w^t}{p_w^t + p_w^{-t}} - \frac{p_w^{-t}}{p_w^t + p_w^{-t}} \quad (6)$$

where p_w^t and p_w^{-t} are the frequencies of a word in the set of manifestos of party t and the set of manifestos that are not t respectively. s_w^t takes the value of 1 for party t , if it is a word that is used exclusively by party t , while it takes the value of -1 if it is used exclusively by all the parties except t . Let j be a manifesto of party T , then,

$$S_{j \in T} = \frac{\sum_w p_{wj} \times s_w^T}{S^T} \quad (7)$$

Finally, to compute partisanship I removed all the parties that had less than 1.5% of the candidates. This was done to not create much distortion on the word-scores.

2.3.3 Populism

I used a dictionary to compute the share of each document with populist content following Gennaro et al. (2021)⁴ and Mendes (2021). In the former case, I translated the dictionary to portuguese. The final dictionary is available in Appendix D.

To measure the presence of populism, I calculated the tf-idf matrix for each document, which takes into account the frequency of words and reduces the weight of words that appear frequently in other documents. Then I summed the values of words present in the populism dictionary and created a binary variable that indicates if the value is above or below the median.

⁴Gennaro et al. (2021) discuss how their dictionary represents well the people-vs-elite rhetoric, which is a distinctive feature of populism and the dimension it usually used in the empirical literature to measure populism.

	Mean	p50	p90	SD	N
Adm	0.061	0.058	0.093	0.028	10958
Social	0.374	0.374	0.468	0.079	10958
Health	0.097	0.092	0.143	0.038	10958
Urban	0.099	0.094	0.145	0.038	10958
Econ	0.150	0.146	0.211	0.049	10958
Crim	0.010	0.007	0.019	0.008	10958
Extremeness	2.208	1.861	4.289	2.064	10958
Partisanship	0.667	0.777	2.731	2.347	10958
L-R Score	0.794	0.905	3.765	2.916	10958
Populism	0.001	0.001	0.002	0.001	10958
Count	2447	1678	4979	3178	10958

Table 2: Descriptives: Issues and Ideological Content

Notes: This table shows means, median, percentile 90th, standard deviations and the number of observations for the share dedicated to each topic in manifestos as described in Equation 2, the scores for extremeness, partisanship, and position in the L-R score, the sum of the terms associated to populism in the tf-idf matrix for each document, and word count.

2.4 Descriptives

The average number of words per manifesto is 2447, with a median of 1678, as shown in Table 2. Social policy issues are the most frequently discussed in these proposals, but this is expected given the wide range of topics covered. It is important to note that the scores for extremism, partisanship, and populism lack of direct interpretation. In terms of the L-R score, the median document is close to the score of the reference document on the right. The score of 0 falls at the 36th percentile.

Figure 1 show variation across municipalities and over time (2012 and 2020) in the share of how many parties use any populist vocabulary in their manifestos. This figure shows that variation exists.

3 Information and Manifestos

The aim of this section is to provide a brief explanation of why there is an expected effect of the availability of information about government activities on the proposals outlined in

political candidate manifestos. Past audits serve as a proxy for an increase in information about government actions and irregularities in the use of public funds in local governments. The effect of the audits could be synthesized through two main channels.

First, the increasing amount of information could have an effect in and of itself (an information shock), by informing the public about government issues (e.g., how much the local government spends on hospital wages). Politicians have responded to audits by changing their practices when in government, through political selection and a disciplining effect (Avis et al., 2018; Gonzales, 2021; Lauletta et al., 2020). This paper analyzes whether the information from audits could affect how candidates frame their proposals and communicate with voters.

Second, in the context of a municipality with a high (low) corruption level, the audit could lead to a negative (positive) reputation shock for the mayor. I look at these effects on the agenda (how much of each policy issue is discussed), and in the ideological content of the language employed. Studies have investigated the impact of an audit’s reputational shock on election outcomes (Cavalcanti et al., 2018; Ferraz & Finan, 2008; Poblete-Cazenave, 2021).

3.1 Audits on issue selection

Each manifesto line addresses a specific policy issue, determining the emphasis a candidate places on each topic. The distribution of issues in a manifesto likely aims to increase the relevance of those topics in the campaign and influence voters when determining their preferences. There are at least two ways that information about government actions can impact a candidate’s agenda.

First, from an electoral accountability perspective, auditing can raise awareness of bureaucratic, administrative, and governance issues among voters, which could prompt candidates to address these issues in their campaigns if the results of the audit were negative. This could also lead to changes in what voters and politicians consider as optimal policies in each area, causing politicians to describe their proposals in greater detail for these issues

(Abou-Chadi, Green-Pedersen, & Mortensen, 2020; Williams et al., 2016). Both incumbent and challenger may address the issue (Seeberg, 2022). This could happen even if there is not a negative reputation shock, and it only provides new information that affects their policy views and voters' demands (e.g. Gagliarducci, Paserman, & Patacchini, 2019). Candidates may also want to reproduce this information in their campaigns to raise awareness among voters. This highlights the role that auditing plays in shaping the policy debate and determining the issues that are discussed during election cycles. This means that audits that find a high number of irregularities in specific areas could lead to candidates discussing these topics more.

Second, the literature on issue selection also addresses the relationship between reputation, electoral advantage, and issue selection. Following Riker (1996), a candidate will appeal to a specific issue only if they dominate the other candidates in terms of persuasion. A reputational shock resulting from the audit could be seen as affecting the perceived advantage on that policy area. However, Aragonès, Castanheira, and Giani (2015); Dragu and Fan (2016) shows that in specific contexts, parties with a disadvantage in a topic could choose to discuss it more.

In conclusion, the availability of information about government activities, as indicated by audits, can have a significant impact on the distribution of policy issues discussed in political candidate manifestos. The information provided by audits can serve as a source of new policies for candidates, as well as highlight problems in need of attention. This may lead to an increase in the attention given to certain topics by all candidates. However, reputational shocks can also influence the extent to which a candidate addresses certain issues in their manifesto. In a setting where corruption cases shape reputation, a positive (negative) reputation shock can result in an increase (decrease) in the attention given to a specific issue by the incumbent candidate, while the opposite is true for their challenger.

3.2 Audits on Partisanship and Extremeness

Manifestos are placed on the left-right political axis based on their national party affiliation, which allows for the calculation of two measures: partisanship and extremeness. There is a body of literature that examines how changes in reputation can affect policy positioning. An increase or decrease in reputation can lead to a shift towards the center or towards extremism.

Starting from a similar reputation level, an increase in reputation can result from a positive shock for an incumbent or a negative shock for a challenger. If a candidate experiences an increase in reputation, they are likely to adopt a policy closer to their preferred stance, while their opponent moves towards the center (e.g. Serra, 2010). However, after the reputation has increased, the candidate may choose to emphasize this valence advantage to win (Groseclose & Milyo, 2005). As a result, they may converge on their policy position.

This paper is relevant to the context of Bernhardt et al. (2020), as the candidates for the mayor position are running simultaneously with the city council candidates. Even if the mayoral candidates lose, they aim to retain as many votes as possible. If the popularity advantage is small, they adopt a policy preferred by the median voter. For moderate advantages, the disadvantaged candidate adopts a policy closer to its core supporters in order to retain as many seats as possible, while the advantaged candidate does not move towards the other candidate unless the popularity advantage is substantial.

It is important to note that candidates and parties do not always propose their ideal policies and often move towards the center, which can result in a bias towards the center in national party positioning. Therefore, any movement after an audit will also affect partisanship.

In conclusion, the policy choices made by candidates, as measured by their manifestos, may be influenced by reputational shocks, but the direction of this influence can vary. Nevertheless, these choices are expected to be impacted by the results of audits.

3.3 Audits on Populism

Several papers have reviewed the determinants of populism (Berman, 2021; Guriev & Papaioannou, 2022). They show that different mechanisms can explain the rise of populism.

For example, Corruption is often a topic that is associated with populist rhetoric (Berman, 2021). In this paper, populism is measured using a dictionary that focuses on how populist politicians use the rhetoric of “us vs. the elite.” Audits can make corruption and transparency issues more prominent, leading politicians to respond strategically by incorporating populist rhetoric. This is because we know that politicians supply populist rhetoric based on the demands of their audience (Gennaro et al., 2021). As a result, increasing public awareness of corruption in government may result in an increase in the strategic use of populist rhetoric, particularly by the opposition. However, even the incumbent mayor could increase the usage of this language if the irregularities disclosed are not their responsibility.

Another effect could be through electoral competitiveness. Studies show that negative reputational shocks on the incumbent can lead to increased electoral competitiveness Poblete-Cazenave (2021). In this context, using populist language could serve as a way to differentiate.

Finally, the release of more accurate information to the public may also result in a decrease in the use of populist language if it helps prevent the spread of false news (Guriev & Papaioannou, 2022). This is particularly relevant in a municipality with low levels of corruption, where the audit could make it difficult for opposition candidates to accuse the incumbent of being part of the “corrupt elite” (Guriev & Papaioannou, 2022).

4 Empirical Analysis

4.1 Effect of an Audit on Manifestos

This paper investigates the causal impact of government audits on political discourse and campaign proposals of politicians. I use the exogenous variation generated by the random

selection of municipalities for anti-corruption audits to estimate the causal effect on political communication in an election setting. In this paper, I specifically compare the topics and language used by politicians in audited municipalities (treatment group) to those in non-audited municipalities (control group), both for incumbents and challengers.

The claim about estimating the causal effect of an audit comes from the fact that municipalities were randomly drawn into this process by a lottery. Before showing the model to estimate, Table 13 shows observables are balanced across audited and non-audited municipalities as expected. Although the number of parties is not balanced at the 10%, I cannot reject the null when I test for joint significance (F-test= 0.98; p-val= 0.4723).

I follow Avis et al. (2018) by estimating the following model

$$Y_{imst} = \alpha + \beta Audited_{mst} + \gamma Controls_{mst} + \nu_s + \varepsilon_{mst} \quad (8)$$

where Y_{imst} is the outcome variable for candidate i in municipality m in state s at time t . $Audited_{mst}$ is a binary variable that takes the value of 1 for a municipality that previously received a CGU audit. The vector $Controls_{imst}$ consists of a set of municipal and candidates' characteristics: the GDP per capita (logs), the share of people who are not illiterate, the share of people living in an urban area, if there is an AM radio in the city, the Gini index, population dummies ⁵, binary variables that represent whether the candidate is a woman, if the candidate has any tertiary education, if the candidate is from the same party as the president (PT) or the governor, the age of the candidate, dummies for the number of candidates competing for the mayor position in that municipality, whether the municipality was already audited before the 28th lottery and the total count of words in the document (logs; except when the dependent variable is the word-count). ν_s represents state fixed-effects. For all estimations, I clusterize at the state level.

The dependent variables considered are the share dedicated to each topic or a binary

⁵The categories are less than 20,000, between 20,000 and 50,000, between 50,000 and 100,000 and larger than 100,000. The thresholds were chosen to be the same that CGU chose in lotteries to assign the topics that the audits would cover

variable that represents whether the usage of populist words was above the median. We can consider β as an estimation of the overall impact of an audit on these dependent variables.

4.2 Heterogeneous Responses to an Audit on Manifestos

To account for the possible differential effect of the audit results, it is important to consider the corruption level found in the audits when analyzing the impact of the audit on political communication. This allows for a more nuanced examination of the relationship between government audits and political discourse.

Following (Ferraz & Finan, 2008), I exploit the timing of the audit to look at these differential effects. Some of the municipalities that were audited were drawn close to the election date (October 2012). Thus, the audit measured the number of irregularities in that municipality for the mayor who was in office between 2008 and 2012. Still, the results of it were not available before the election. Thus, I use this set of municipalities as a control group for those municipalities that were audited before the election and for which the audit results were also disclosed before the election or audited closely after the election. The treatment group consists of municipalities drawn to be audited between the 28th and the 35th lottery. The control group is those audited between the 36th and the 38th lottery. This strategy is helpful in estimating the effect of the audit (disclosing information about the government's actions to the public) conditioning on the level of corruption found.

The claim about estimating the causal effect of an audit comes from the fact that municipalities were randomly drawn into being audited just before the election or after it. Before showing the model to estimate, Table 14 shows observables are balanced across both groups as expected. There are not many differences between both groups. I cannot reject the null when I test for joint significance (F-test= 1.05; p-val= 0.4306).

I estimate the following model for incumbents and challengers

$$Outcome_{imst} = \alpha + \beta_0 PreElection_{mst} + \beta_1 PreElection_{mst} \times Corruption + \quad (9)$$

$$+\beta_2Corruption + \gamma Controls_{imst} + \nu_s + \varepsilon_{imst}$$

where $PreElection_{mst}$ is a binary variable that represents if a municipality was audited and the result was disclosed before the election, $Corruption$ is a binary variable that represents whether the audit gave a number of acts of corruption cases higher than the median, and the controls are the same than in the previous section plus the number of service orders (logs). This control is added given that it is expected that a higher number of corruption cases is reached when more investigations are audited.

The dependent variables are the same from the previous section. In this case, β_1 , measures the average causal impact of the audit conditional on a low number of irregularities, while $\beta_1 + \beta_2$ measures the average causal impact of the audit conditional on a high number of irregularities.

5 Impact of audits on the topics that are discussed

In this section, the dependent variable is the share of the document dedicated to each topic k (measured as described by Equation 2). The results of estimating Equation 8 from the Empirical Design section are shown in Table 3. The table presents the estimates of the effect of an audit on the share of the document that discusses topic k . Panel A of Table 3 presents the results for incumbents running for re-election, while panel B presents the results for challengers running in a city where the mayor is running for re-election.

Panel A of Table 3 shows that incumbents running for re-election in audited municipalities discuss the same topics as those that ran in municipalities where audits did not occur. This suggests that the occurrence of an audit does not have a significant effect on the topics discussed by incumbents.

Panel B of Table 3 shows that challengers running in audited municipalities discuss more health (column 3) and less about bureaucratic issues (column 1) than challengers running in non-audited municipalities. These results suggest that being audited has an effect on

Panel A: Incumbents							
VARIABLES	(1) Adm	(2) Social	(3) Health	(4) Urban	(5) Econ	(6) Crime	(7) count
Audited	-0.000 (0.002)	0.002 (0.007)	0.002 (0.003)	-0.001 (0.004)	-0.000 (0.004)	0.000 (0.000)	0.077 (0.064)
Observations	1,873	1,873	1,873	1,873	1,873	1,873	1,873
R-squared	0.082	0.027	0.081	0.196	0.106	0.063	0.111
Mean	.055	.379	.100	.109	.148	.009	

Panel B: Challengers							
VARIABLES	(1) Adm	(2) Social	(3) Health	(4) Urban	(5) Econ	(6) Crime	(7) count
Audited	-0.005*** (0.001)	0.001 (0.004)	0.005** (0.002)	-0.001 (0.002)	0.002 (0.003)	-0.000 (0.000)	0.068 (0.060)
Observations	3,361	3,361	3,361	3,361	3,361	3,361	3,361
R-squared	0.057	0.040	0.078	0.101	0.102	0.059	0.071
Mean	.063	.371	.096	.097	.149	.010	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Effect on the Share for each Topic

This table reports the effects of being audited on the share dedicated to each topic and the word-count measured in logs. The dependent variable. This information comes from TSE, CGU and manifestos. The controls are specified in section 4. Standard errors are clustered by state. Estimations include state-fixed effects.

the topics discussed by challengers. Furthermore, they provide evidence that an audit has a causal effect on the political communication strategies used by challengers. The effects are in both cases of 0.5 p.p. This means an effect of 8.2% of the mean share dedicated to the bureaucratic issues, and 5.1% of the mean share dedicated to health policy issues. Both changes represent around ten words or one line and a half in the average document.

Finally, no effects are found in the word count measured in logs for any of the candidates. An effect of this dimension could be a threat to measuring the relevance of each topic by the share of the document dedicated to it.

5.1 Heterogeneous effects of the audits

The potential effects of an audit on political communication may vary depending on the outcome of the audit. A specific group could even drive them. As such, the results of this study take into account the different audit results to provide a more comprehensive understanding of the relationship between audits and political communication.

As shown in Table 4, Panel A, incumbents running for re-election in audited municipalities do not exhibit almost any statistically significant difference in the topics they discuss compared to incumbents running in non-audited municipalities, regardless of the number of irregularities found during the audit. The only difference comes when there is good news for them: when the number of irregularities is low, they discuss more administration and bureaucratic issues (column 1). Although it seems that the mere occurrence of an audit does not have a notable impact on the topics discussed by incumbents, they do try to discuss more governance issues when they have evidence to back up their manifestos. The effect is 1.4 p.p., which represents 2% of the mean for this issue. 1.4 p.p. means approximately 34 words more dedicated to this topic in the average document (or 4.5 lines).

Panel B of Table 4 examines the communication strategies of challengers running against mayors seeking re-election. The results indicate that the disclosure of an audit report prior to an election leads to a reduction in the discussion of bureaucracy issues among challengers in municipalities with a low number of irregularities (below the median) compared to those municipalities where the audit report was not disclosed before the election (column 1). It is important to notice this is the opposite result of the one found for incumbents. This suggests that the audit has a negative impact on the discourse about bureaucratic issues in municipalities with better governance when the report is available to the public. The effect is also sizable. An audit of a low-corruption municipality reduces the references to bureaucratic issues by 36 words in the average document. When the number of corruption cases is low, challengers also discuss more health (column 3) and economic policy (column 5) issues and less about crime policy issues (column 6). The first two could be related to the

Panel A: Incumbents							
VARIABLES	(1) Adm	(2) Social	(3) Health	(4) Urban	(5) Econ	(6) Crime	(7) count
Audited	0.014** (0.006)	-0.015 (0.022)	-0.011 (0.011)	-0.000 (0.009)	0.001 (0.022)	-0.000 (0.002)	0.295 (0.183)
CorruptionxAudit	-0.020* (0.011)	0.011 (0.036)	0.022 (0.013)	-0.003 (0.014)	-0.001 (0.025)	0.001 (0.003)	-0.367 (0.344)
Corruption	0.018 (0.012)	-0.013 (0.036)	-0.001 (0.012)	0.014 (0.012)	0.009 (0.021)	-0.001 (0.002)	0.582* (0.323)
Observations	211	211	211	211	211	211	211
R-squared	0.268	0.194	0.303	0.351	0.169	0.236	0.262
$\beta_0 + \beta_1$	-0.00615	-0.00416	0.0112	-0.00360	6.31e-05	0.000839	-0.0724
pval	0.605	0.902	0.459	0.795	0.997	0.747	0.793

Panel B: Challengers							
VARIABLES	(1) Adm	(2) Social	(3) Health	(4) Urban	(5) Econ	(6) Crime	(7) count
Audited	-0.015** (0.006)	0.026 (0.018)	0.009** (0.004)	0.006 (0.004)	0.016** (0.006)	-0.002* (0.001)	0.052 (0.164)
CorruptionxAudit	0.015 (0.011)	-0.059** (0.024)	0.007 (0.005)	0.009 (0.010)	-0.014 (0.010)	0.002 (0.002)	-0.404 (0.280)
Corruption	-0.017 (0.013)	0.049** (0.020)	-0.006 (0.008)	-0.020** (0.009)	0.002 (0.015)	-0.004** (0.002)	0.351 (0.272)
Observations	393	393	393	393	393	393	393
R-squared	0.146	0.132	0.235	0.163	0.175	0.168	0.192
$\beta_0 + \beta_1$	-0.000446	-0.0326	0.0159	0.0153	0.00224	0.000140	-0.351
pval	0.944	0.128	0.0136	0.146	0.818	0.924	0.240

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Effect on the Share for each Topic

This table reports the effects of being audited on the share dedicated to each topic and the word count measured in logs conditional on a dummy that represents whether the number of irregularities was above or below the median. Only municipalities audited between the 28, and the 38th lottery were considered. The dependent variable. This information comes from TSE, CGU, and manifestos. The controls are specified in section 4. Standard errors are clustered by state. Estimations include state-fixed effects.

fact that these were issues covered by the audits. Even when the number of irregularities is low, the audits give information to the politicians and the voters about these topics and make them more salient. The negative effect on crime could be representing that it is a residual category. More research is necessary on this issue.

Finally, in municipalities where a high number of irregularities were found during the audit, the disclosure of the results prior to the election resulted in opposition candidates discussing health policy issues more frequently (column 3, $\beta_0 + \beta_1$ row). They increase the share by 1.53 p.p., which represents 37 words more in the average document, and an increase of approximately 15% of the mean of the share of a manifesto dedicated to health issues. This result suggests that the disclosure of an audit with negative results can positively impact the political communication strategies of opposition candidates by encouraging them to discuss specific issues.

5.2 Leveraging the topics covered by the audits

This study analyzed a variety of topics through audits. During the analysis period, all audits of smaller cities (population less than 50,000) had a focus on health in addition to other issues. Conversely, health was not a topic of investigation in 8 out of the 11 audits of larger cities analyzed. The details of the topics analyzed in each audit are shown in Table 8. To account for this variation, separate analyses were performed for challengers in cities with populations under 50,000 and those above 100,000. In the latter group, I excluded audits 30, 33, and 35.

The results shown in Table 5 reveal that the effect of the audit on health policy issues was statistically significant only for challengers in municipalities with populations less than 50,000. These municipalities were audited specifically on the expenditures related to health policy. This finding supports the conclusion that audits can influence political communication by inciting opposition candidates to address the specific issues audited.

I also conducted the specification in Equation 9, controlling for a binary variable indicating

Panel A: Challengers, Pop<50,000							
VARIABLES	(1) Adm	(2) Social	(3) Health	(4) Urban	(5) Econ	(6) Crime	(7) count
Audited	-0.006*** (0.002)	-0.000 (0.005)	0.007** (0.002)	-0.002 (0.003)	0.002 (0.003)	-0.000 (0.000)	0.039 (0.076)
Observations	2,766	2,766	2,766	2,766	2,766	2,766	2,766
R-squared	0.056	0.033	0.067	0.115	0.088	0.067	0.064

Panel B: Challengers, Pop>100,000							
VARIABLES	(1) Adm	(2) Social	(3) Health	(4) Urban	(5) Econ	(6) Crime	(7) count
Audited	0.006 (0.007)	0.003 (0.018)	-0.003 (0.007)	0.001 (0.006)	-0.005 (0.010)	-0.003** (0.001)	0.018 (0.150)
Observations	292	292	292	292	292	292	292
R-squared	0.194	0.156	0.157	0.161	0.118	0.187	0.182

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Effect on the Share for each Topic for Challengers

This table reports the effects of being audited on the share dedicated to each topic and the word count measured in logs. The sample in panel A consists of opposition candidates in municipalities with a population below 50,000 inhabitants. The sample in panel B consists of opposition candidates in municipalities with a population above 100,000 inhabitants, except for those drawn in lotteries 30, 33, and 35. The dependent variable. This information comes from TSE, CGU, and manifestos. The controls are specified in section 4. Standard errors are clustered by state. Estimations include state-fixed effects.

whether a municipality was above or below the median in terms of corruption cases in the health sector (instead of using all cases). As shown in Table 6, in municipalities with a low level of corruption cases in the health sector, the audit did not have a significant effect on the proportion of documents dedicated to discussing health issues by challengers (Column 3). However, when the number of corruption cases in the health sector was above the median, challengers dedicated a greater proportion of words to discussing health policy issues if the

VARIABLES	(1) Adm	(2) Social	(3) Health	(4) Urban	(5) Econ	(6) Crime	(7) count
Audited	-0.013* (0.006)	0.020 (0.019)	0.008 (0.005)	0.008 (0.005)	0.016** (0.007)	-0.002* (0.001)	0.076 (0.153)
IrregularxAudit	0.002 (0.012)	-0.032 (0.025)	0.008 (0.009)	-0.005 (0.011)	-0.016 (0.014)	0.000 (0.002)	-0.479 (0.327)
Irregular	-0.001 (0.012)	0.028 (0.024)	0.001 (0.007)	0.000 (0.008)	0.013 (0.014)	0.000 (0.002)	0.439 (0.315)
Observations	393	393	393	393	393	393	393
R-squared	0.138	0.122	0.240	0.148	0.170	0.158	0.192
$\beta_0 + \beta_1$	-0.0105	-0.0116	0.0162	0.00334	-9.49e-05	-0.00164	-0.403
pval	0.164	0.571	0.0293	0.694	0.993	0.395	0.226

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Effect on the Share for each Topic for Challengers

This table reports the effects of being audited on the share dedicated to each topic and the word count measured in logs. The estimations of the effect of an audit in column (2) are conditional on a dummy that represents whether the number of irregularities on the health sector was above or below the median. Only municipalities audited between the 28th and the 38th lottery were considered. The dependent variable. This information comes from TSE, CGU and manifestos. The controls are specified in ???. Standard errors are clustered by state. Estimations include state-fixed effects.

audit was conducted prior to the election (Column 3, Row for $\beta_0 + \beta_1$).

5.3 Discussion

To summarize, this set of results provides evidence that government audits can significantly impact the topics discussed by politicians during an electoral campaign. The findings indicate that incumbents running for re-election in audited municipalities do not display a notable difference in the topics they address compared to incumbents running in non-audited municipalities, except in the area of Administration and Bureaucratic issues, which is closely related to the audits. The audit reports prompt incumbents to discuss this topic more frequently, but only if there is evidence of low levels of corruption in the municipality. In contrast, challengers respond by discussing this issue less in that context. This aligns with

the notion that a candidate will focus on an issue where they have a reputation advantage (Riker, 1996; Seeberg, 2022).

When there is a high number of corruption cases, incumbents do not seem to change the distribution of topics in their manifestos, despite the audits. However, challengers show a response by discussing health policy issues more. This is particularly true in smaller municipalities that were audited with certainty regarding their health expenditure and when the corruption cases were in the health sector. This finding also aligns with the theory of issue dominance, as the incumbents' negative shock in the health sector provides an opportunity for the challengers to leverage their reputation advantage to address this issue.

These results also offer evidence that the discovery of problems in a policy area can spur candidates to put forth alternative solutions. However, the lack of reaction from incumbents could suggest that even when voters may be calling for solutions to a problem, they choose not to address it in order to not raise the visibility of the issue.

An alternative explanation of these findings is that the information contained in the audits could be new to the challengers while it is already known to the incumbents. As a result, the challengers incorporate the audit findings into their manifestos, while the incumbents are not affected by the information in the audit report.

In conclusion, these findings shed light on how government audits can shape political communication and the effect of audit outcomes on political discourse related to specific issues. It also highlights how candidates craft their proposals strategically in response to their perceived strengths and weaknesses in specific policy areas.

6 Impact of audits on the use of ideological rhetoric

In this section, I examine the effects of audits on the language used in political manifestos. Specifically, I quantify the level of partisanship, extremism, and populism in each manifesto. To measure extremism and partisanship, I calculate scores for each manifesto. For populism,

I compute a binary variable to determine whether the level of populism is above or below the median. The interpretation of the effects will then be related to the probability of being above the median in terms of populist usage.

The results in Table 7 indicate no differences in extremist, partisan or populist words between audited and non-audited candidates for incumbents (panel A). For challengers, I do find a negative effect of the audit on the partisanship level (panel B). This means that an audited challenger uses fewer words identified with that candidate’s party.

When conditioning on the number of corruption cases, an audit on a municipality with a low number of corruption cases (positive reputation shock for the incumbent) make the incumbent to be more partisan. On the other hand, an audit on municipalities with a high level of corruption cases (negative reputation shock for the incumbent) increases the populist language usage in the incumbents (column 3, Panel A, $\beta_0 + \beta_1$ row). This is measured by a higher probability of being in the group of candidates that use a high level of populist language. For challengers, an audit decreases the partisanship level and increases the extremeness (column 2, Panel B, $\beta_0 + \beta_1$ row). These findings suggest that the audit shaped incumbents’ campaign rhetoric in cases of high corruption.

6.1 Discussion

This section shows that audits impact incumbents and challengers react differently in their campaigns in terms of the ideological content of it. The effects also differ whether the candidate is running in a municipality with a low or high level of corruption.

This section highlights the differential impact of government audits on the ideological content of campaigns by incumbents and challengers. The results suggest that the effect of audits on political discourse is dependent on the level of corruption in the municipality, with incumbents in high-corruption areas using more populist language, while challengers in these areas adopt a more extreme and less partisan tone.

The results suggest that incumbents in municipalities with high levels of corruption tend

Panel A: Incumbents						
VARIABLES	(1) Extremeness	(2) Partisanship	(3) Populism	(4) Extremeness	(5) Partisanship	(6) Populism
Audited	-0.060 (0.202)	-0.244 (0.328)	-0.010 (0.028)	-1.006 (0.586)	2.012* (1.011)	0.095 (0.091)
CorruptionxAudit				0.662 (1.185)	-1.923 (2.606)	0.227* (0.114)
Corruption				-0.712 (1.071)	1.390 (2.271)	-0.240** (0.107)
Observations	1,840	1,773	1,841	208	195	208
R-squared	0.105	0.037	0.296	0.290	0.259	0.445
$\beta_0 + \beta_1$				-0.344	0.0885	0.321
pval				0.720	0.970	0.0106
Mean	2.300	.703				
SD	2.06	2.54				
Panel B: Challengers						
VARIABLES	(1) Extremeness	(2) Partisanship	(3) Populism	(4) Extremeness	(5) Partisanship	(6) Populism
Audited	0.234 (0.222)	-0.449* (0.216)	0.008 (0.028)	-0.713 (0.507)	-0.454 (0.778)	-0.108 (0.074)
CorruptionxAudit				1.611** (0.694)	-0.694 (0.797)	0.104 (0.164)
Corruption				-0.738 (0.438)	0.060 (0.688)	-0.078 (0.129)
Observations	3,360	2,977	3,360	393	353	393
R-squared	0.031	0.032	0.149	0.136	0.136	0.190
$\beta_0 + \beta_1$				0.898	-1.148	-0.00416
pval				0.0708	0.0402	0.978
Mean	2.202218	.6321354				
SD	2.171537	2.410781				
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 7: Differences in probabilities of being above the median

This table reports the effects of being audited on: Columns 1 and 4, Extremeness; Columns 2 and 5, Partisanship, Columns 3 and 6, a binary variable that represents being above the median of the sum of the word frequencies of words associated with populism weighted by the tf-idf matrix. Only municipalities audited between the 28 and the 38th lottery were considered for columns 4,5, and 6. This information comes from TSE, CGU, and manifestos. Standard errors are clustered by state. Estimations include state-fixed effects. The controls are specified in section 4.

to employ more populist language in their campaigns. This could be a strategy to divert attention from corruption allegations or to mobilize voters in a more competitive election. It could also be an attempt to denounce the high levels of corruption. However, if the incumbents are finding new information through the audits, this interpretation would not align with the findings presented in the previous section.

In municipalities with high levels of corruption, challengers tend to adopt a more extreme language that deviates from the language used by candidates from the same party in other areas. This shift could stem from the electoral advantage they possess, which enables them to adopt a less neutral language that aligns more closely with their preferred policies (Serra, 2010). This shift also makes them appear less partisan.

In contrast, candidates in audited municipalities with low corruption levels tend to use more language aligned with their party. This result aligns with predictions from previous research that opposition parties will defend their own votes in a disadvantageous election context (Bernhardt et al., 2020).

Overall, these findings provide evidence that government audits can shape political discourse by influencing the way candidates respond to their reputation and information shocks in their campaigns.

7 Final Remarks

In this paper, I analyzed 11,422 manifestos from the 2012 municipal election in Brazil to assess the impact of an auditing program on candidates' agendas and the ideological content of their manifestos. The results indicate that audits can have a significant impact on political communication and candidates' agendas. The effects of the audits, however, vary depending on the level of corruption in the municipality. This highlights the importance of the reputational content of the audit rather than the audit itself.

Auditing increases the frequency of populism among incumbent politicians and extremism

among challengers in municipalities with high levels of corruption. These results suggest that the political climate of these municipalities in the electoral campaign after corruption is revealed could be worse than in those municipalities where an audit did not occur. This result is not found in municipalities with a low level of corruption, which could mean that the political scandal is what drives this result. Further analysis is necessary to understand the long-term consequences of these scandals. In particular, whether these changes in political positioning are permanent after this election and how they could affect the implemented policies by the candidate that wins the election.

In high-corruption municipalities, auditing leads to an increase in populism among incumbent politicians and extremism among challengers. These results suggest that the political climate in these municipalities during the electoral campaign following the revelation of corruption may be more contentious than in municipalities where audits did not occur. This result is not found in municipalities with a low level of corruption. Further research is needed to understand the long-term consequences of these findings, such as whether the changes in political positioning persist after the election and how they may impact the policies of the winning candidate.

The results also show that when candidates are put at a disadvantage by an audit, incumbents tend to use more populist language, while challengers respond by using more partisan language. This could suggest that both groups are trying to appeal to specific voters to defend their support. The result for incumbents requires further analysis. The rise of populism is associated to outsider political leaders, while in this case, the candidate that increases the level of populism is a mayor running for re-election. This issue needs further research in the context of a growing prominence of populist politicians in Latin America.

In this study, the effects of audits on the political agendas of incumbents and challengers were also explored. Results showed that candidates in a low-corruption municipality respond differently to the presence of an audit than those in a high-corruption municipality. The incumbent mayor running for re-election in a low-corruption city that was audited is found

to discuss more administrative and bureaucratic issues in their manifesto than other mayors in the same situation that were not audited. In those same cities, the challenger decreases the share of the manifesto dedicated to that topic, as compared to similar challengers who have not received an audit report. This result is at odds with the findings of Pavão (2018), who stated that voters are less likely to punish corrupt politicians in areas with high levels of corruption, as they perceive all politicians as equally corrupt. If voters perceive all politicians to be equally corrupt, politicians should not respond differently to the news from audit reports. Further research is necessary to better understand this aspect.

In contrast, when the results are bad for the incumbent administration, the incumbents do not alter their agenda with respect to similar incumbents that were not exposed. Challengers choose to increase the share of manifestos dedicated to health issues in municipalities where audit reports showed problem in the health sector. If the administration of public funds was found to be a problem, challengers respond by addressing the topic. However, incumbents do not react in the same way. These findings offer crucial understanding of how increased transparency impacts political priorities and how candidates decide to address different issues that become relevant before an election. These results align with the theory that candidates avoid issues where they have a disadvantage.

In contrast, incumbents in high-corruption municipalities do not respond to negative audit results by changing their agenda, while challengers increase their emphasis on health issues when problems in the health sector's administration of public funds are revealed. These findings suggest that increased transparency influences political priorities and highlights the role of electoral accountability and public demand for information. This result aligns with the theory that candidates tend to engage on issues where they have an advantage.

Overall, in this study I have demonstrated that both incumbents and challengers are sensitive to increased information. This could suggest that electoral accountability exists and candidates respond to the informational needs of the public. It is uncertain whether this is due to politicians gaining new knowledge or the topic becoming more popular among

voters. Nonetheless, this study have shown that the topics in the audit reports correspond with the candidates' proposals.

The paper's findings indicate that challengers respond more significantly to increased transparency, as seen in audits, compared to incumbents. This discrepancy could be due to the incumbents having other methods of demonstrating accountability to voters, such as through the distribution of benefits from programs like conditional cash transfers. This is supported by previous research, such as a study by Poblete-Cazenave (2021), which found a correlation between reputation shocks and the distribution of these program benefits. While it is also possible that incumbents' re-election chances are not affected, this is not supported by previous works (Ferraz & Finan, 2008; Poblete-Cazenave, 2021).

In conclusion, these findings have important implications for public policy and future research should investigate the underlying mechanisms and how candidates utilize audit information in shaping their campaign strategies. Further examination of political ideology would also provide insight into the relationship between transparency measures, quality information, and ideology.

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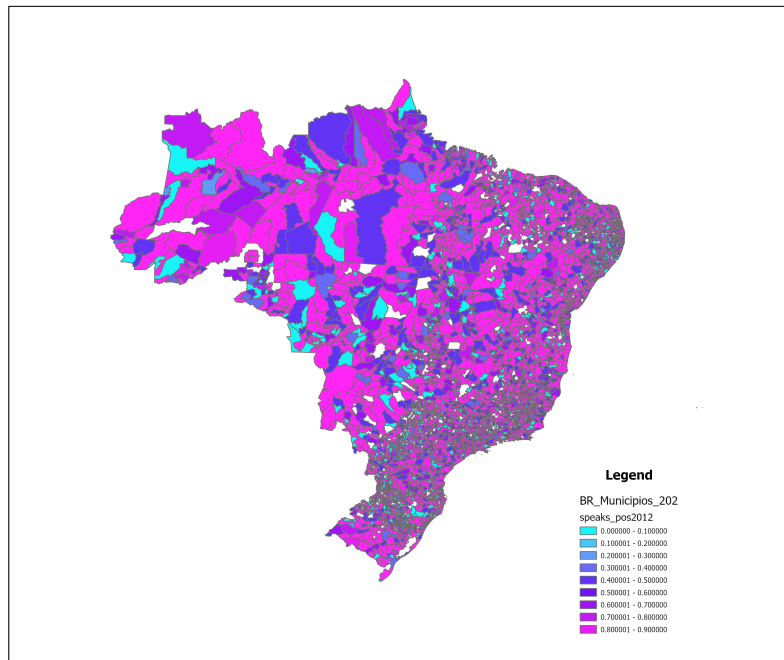
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A Figures

2012



2020

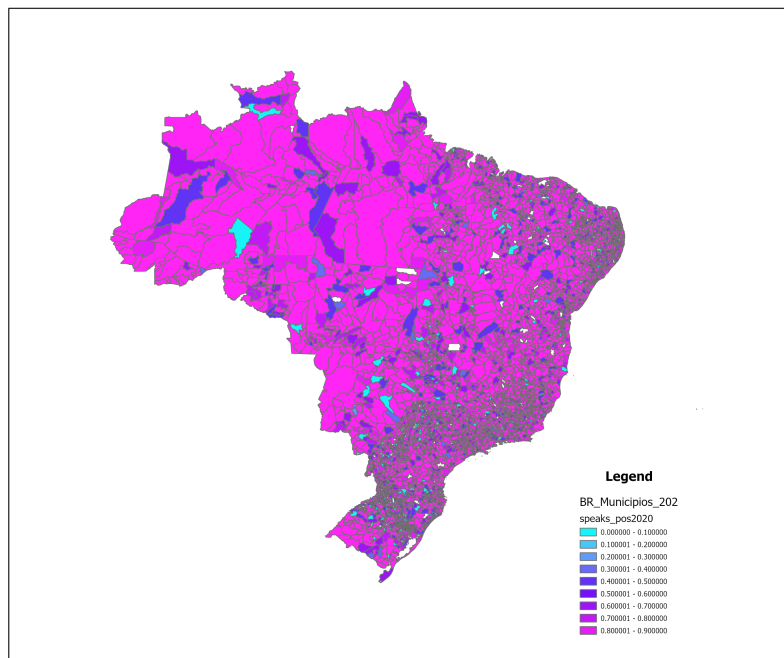


Figure 1: Percentage of local party manifestos in each municipality that include a populist word

B Tables

Table 8: Topics covered by the audits in each lottery

Topic by CGU	Topic	Population Ranges	Lotteries									
			28	29	30	31	32	33	34	35	36	
Agriculture	Econ	20<x<50		X			X					
		50<x<100		X			X					
		x>100		X			X					
Commerce	Econ	20<x<50		X			X					
		50<x<100		X			X					
		x>100		X			X					
Crime	Crime	20<x<50			X	X		X				
		50<x<100			X	X		X				
		x>100			X	X		X				
Culture	Social	20<x<50		X			X					
		50<x<100		X			X					
		x>100		X			X					
Education	Social	20<x<50	X	X	X	X	X	X	X	X	X	
		50<x<100	X	X	X	X	X	X	X		X	
		x>100	X			X			X		X	
Health	Health	20<x<50	X	X	X	X	X	X	X	X	X	
		50<x<100	X	X	X	X	X	X		X		
		x>100			X			X		X		
Housing	Urban	20<x<50	X									
		50<x<100	X									
		x>100	X									
Industry	Econ	20<x<50			X	X		X				
		50<x<100			X	X		X				
		x>100			X	X		X				
Sanitation	Urban	20<x<50	X									
		50<x<100	X									
		x>100	X									
Science and Technology	Social	20<x<50			X	X		X				
		50<x<100			X	X		X				
		x>100			X	X		X				
Services	Bureau/Urban	20<x<50		X			X					
		50<x<100		X			X					
		x>100		X			X					
Social Assistance	Social	20<x<50	X	X	X	X	X	X				
		50<x<100	X	X	X	X	X	X				
		x>100		X			X					
Social Development	Social	20<x<50							X	X	X	
		50<x<100							X	X	X	
		x>100							X	X	X	
Urban Planning	Urban	20<x<50	X									
		50<x<100	X									
		x>100	X									

Table 9: Number of Irregularities per Policy Area

	N	Percentage
Bureaucracy	58	0.2%
Crime	138	0.4%
Economics	1,494	4.1%
Health	10,207	28.2%
Social	21,644	59.8%
Urban	1,818	5.0%
Other	811	2.2%

Percentages refer to the percentage of total cases in lotteries between the 28th and the 38th

Source: TSE

Table 10: Examples of Headings for Each Topic

Introduction	Administrative Bureaucracy	/ Social	Health	Urban	Economics	Crime	Other
Concluding Remarks	Administration		Childhood and Elders	Cleaning	Agriculture	Crime	Communication
General Comments	Administration and Participation	Culture		Cleaning and Environment	Agriculture and Environment		Events Center
Introduction	Government Management	Culture and Sport Culture and Sports		Housing Infrastructure	Development Economic Development		Funerals Religion
	Participation	Culture and Tourism		Infrastructure and Services	Economic Development and Sustainable Development		
	Public Finance	Culture, sport and tourism		Infrastructure and transport	Employment		
	Public Servers	Disability		Street lights	Employment and Income		
		Education		Natural Disasters	Environment		
		Education and Culture		Sanitation	Environment and Agriculture		
		Education and Sports		Sanitation and Environment	Industry and Commerce		
		Education, Culture and Sports		Streets	Production		
		Elders		Transit	Rural		
		Gender		Transport	Solidarity Economy		
		Social		Urban	Sustainable Development		
		Social Assistance		Urban and housing			
		Social Development		Urban Development			
		Social Policies		Water			
		Social Policy					
		Sports					
		Sports and Culture					
		Sports and Tourism					
		Sports and Youth					
		Sports, culture, youth and tourism					
		Tourism					
		Tourism, Culture and Sports					
		Youth					
		Youth, Gender and Elders					

Table 11: Distribution of Topics in the Corpus

	Sample	Soft Prediction	Hard Prediction
Titles	2.9	1.5	1.3
Introduction	14.7	16.8	16.5
Administrative / Bureaucracy	8.3	7.0	4.8
Social	31.3	37.8	48.9
Health	9.5	9.4	7.2
Urban	10.6	9.7	7.3
Economics	13.9	15.0	12.5
Crime	2.5	1.2	0.7
Other	0.2	0.0	0.0
Unrecognizable characters	6.2	1.6	0.8

^a Column 1 represents the topic distribution in the sample of 100 manifestos that was used to tune the model. Column 2 and 3 represent the topic distribution using the soft and hard measures described in section 2.

Table 12: Words with the lowest (left-wing) and highest (right-wing) scores

Left-wing words		Right-wing words	
Original	English	Original	English
socialismo	socialism	democratas	democrats
petista*	petista*	cristao	Christian
capitalista	capitalist	progresso	progress
privatizacao	privatization	republicano	republican
petistas*	petistas*	estimativa	estimate
inverter	reverse	progressista	progressive
pertence	belongs	pocilgas	pigsties
socialista	socialist	cidasc**	cidasc**
dominante	dominant	sons	sounds
capitalismo	capitalism	certo	right
precarizacao	precariousness	acudagem	help
especulacao	speculation	pim***	pim***
massas	masses	epagri****	epagri****
canoas	canoes	peco	I ask
militantes	activists	veremos	we'll see
conceituais	conceptual	abacaxi	pineapple
exportacoes	exports	compos	composes
presidenta	president	professor	teacher
comunista	communist	senhores	sirs
favores	favors	construtivismo	constructivism

Notes: Words with the lowest and highest scores in the 2012 election manifestos. * *petista*: Member of the Workers Party (PT)

** *cidasc*: Companhia Integrada de Desenvolvimento Agrícola do Estado de Santa Catarina (Cidasc). This is an agropecuarian policy in Santa Catarina. *** *pim*: Primera Infancia Mejor. This

policy was first implemented in Rio Grande do Sul. However, it was replicated in municipalities in other states.

**** *epagri*: Empresa de Pesquisa Agropecuária e Extensão Rural. This is an agropecuarian policy in Santa Catarina.

Table 13: Mean Comparisons between Audited and Nonaudited Municipalities

	Non-audited		Audited		Difference	
	Mean	S.D.	Mean	S.D.	Coefficient	S.E.
GDP pc (logs)	9.18	0.70	9.03	0.68	-0.0389	[0.028]
Literacy (%)	85.36	8.84	83.54	9.32	-0.097	[0.268]
% in Urban Areas	0.64	0.22	0.63	0.21	0.005	[0.007]
AM Radio	0.21	0.41	0.20	0.40	-0.003	[0.025]
Gini	0.50	0.07	0.51	0.06	-0.001	[0.002]
Pop (logs)	9.39	1.09	9.48	1.10	0.000	[0.032]
Number of candidates	2.90	1.24	3.02	1.32	0.078*	[0.043]
N	4900		464			

^a Notes: This table shows the means and standard deviations of different variables for municipalities audited before the 2012 election and municipalities not audited before that election. The difference and corresponding standard error are computed based on a regression that controls for state fixed effects. Standard errors are computed by clustering at the state level. Standard errors in brackets. * $p < 0.10$ ** $p < 0.05$

Table 14: Mean Comparisons between municipalities before the 2012 Election Audited and Municipalities audited after the 2012 election

	Non-audited		Audited		Difference	
	Mean	S.D.	Mean	S.D.	Coefficient	S.E.
GDP pc (logs)	9.09	0.65	9.04	0.68	-0.006	[0.045]
Literacy (%)	84.43	8.42	83.91	9.04	0.13	[0.360]
% in Urban Areas	0.63	0.21	0.63	0.21	0.004	[0.013]
AM Radio	0.19	0.40	0.20	0.40	-0.024	[0.031]
Gini	0.50	0.06	0.51	0.06	0.013	[0.003]
Pop (logs)	9.42	1.04	9.47	1.09	0.002	[0.057]
Number of candidates	2.87	1.21	2.91	1.20	0.072	[0.112]
N	218		381			

^a Notes: This table shows the means and standard deviations of different variables for municipalities audited before the 2012 election and municipalities not audited before that election. The difference and corresponding standard error are computed based on a regression that controls for state fixed effects. Standard errors are computed by clustering at the state level. Standard errors in brackets. * $p < 0.10$ ** $p < 0.05$

C Preprocessing Manifestos

The preprocessing steps were:

- Converted each pdf files into a json format.

- Any empty json files was removed.
- For the topic analysis, the next step was transforming each entry in the json file into a line in the pdf.
- Stop words were removed from each line. The stop words used for the topic analysis were those included in nltk for the Portuguese language.
For the analysis where I looked at the frequency of the populist words, I also excluded the parties names, the state names, and the names of each candidates. This was done to reduce the total count of words and imbalances that could be generated by the use of these removed terms.
- The tokenization process was then performed and punctuation signs were removed. In all cases 1-word n-grams where used.

D Populist dictionary

The dictionary that was used is a translation of the one described in the appendix of (Gennaro et al., 2021). I translated that dictionary into Portuguese. The dictionary they used is one of stemmed words. Thus, I had to look at all the possible words that have a similar stem.

- 'casta', 'classe', 'classes', 'elite', 'elites', 'elitista', 'elitistas', 'elitismo', 'elitização', 'elitizado', 'establishment', 'estabelecimento', 'estabelecimentos', 'corrup', 'corrupta', 'corrupto', 'corruptor', 'corruptos', 'corrupção', 'corrupções', 'corruptas', 'corruptores', 'corrupça', 'corrompe', 'regime', 'regimentais', 'regimento', 'regimentos', 'regimes', 'propaganda', 'propagandas', 'proeminente', 'proeminentes', 'arrogância', 'arrogante', 'trair', 'traição', 'trais', 'promessa', 'promessas', 'promessasmas', 'vergonha', 'vergonhosa', 'vergonhoso', 'vergonhosos', 'vergonhosamente', 'vergonhosas', 'desavergonhado', 'descarado', 'descarada', 'absurdamente', 'absurdas', 'absurdo', 'absurdos', 'absurda', 'disparatado', 'referendo', 'referendum', 'referenda', 'referendada', 'referendado', 'referendadas', 'referendados', 'referendos', 'povo', 'gente', 'povos', 'tradição', 'tradicionalista', 'tradicionalis', 'tradicional', 'tradicionalismo', 'tradicionalista', 'tradicionalistas', 'tradicionalmente', 'tradições', 'tradições', 'direta', 'políticos', 'estadista', 'governar', 'antidemocrata', 'engano', 'fraude', 'dolo'.

I also incorporated some words that were available in the dictionary described by Mendes (2021). This is a dictionary in portuguese to identify populism speeches:

- 'voz', 'verdade', 'verdadeira', 'verdadeiramente', 'verdadeiras', 'verdadeiro', 'verdadeiros', 'verdades', 'verdadeiraos', 'mentira', 'mentiras', 'oligarquia', 'oligarquias', 'clientelismo'.

E Party Classification

I follow the classification made by Tarouco and Madeira (2015). They surveyed Brazilian experts to get the ideological positioning of the parties. They do not classify parties as left, right or center. I decided to group all parties between 1 and 4 as left-wing, and all parties between 5 and 7 as right. The remaning are classified as center parties.

Left	Center	Right
PCO	MDB	PTB
PSTU	Avante	SDD
PSOL	PMN	Podemos
PCB	PHS	PRTB
PCdoB	PSDB	PRB
PT	PSD*	PTC
PSB		PRP
PDT		PR
PV		PSL
PPS		PSC
UP*		DC
PPL*		Progre
		DEM

Table 15: Parties in the 2012 Election and how they are labeled to measure extremeness

^a Notes: This table shows distribution of parties in the left, center and right-wing groups following Tarouco and Madeira (2015). They are ordered from left (above) to right (below). * Parties classified using Bolognesi, Ribeiro, and Codato (2022).