



Universidad de  
**San Andrés**

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## Does size matter?

The effect of council sizes on incumbent reelection

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## Introduction

Understanding the factors that can influence electoral results is of paramount importance in the study of political science and democratic governance. Elections serve as a cornerstone of democratic societies, representing the collective voice of citizens in shaping their governments and policies. Elections are sometimes understood as a reflection of the preferences and choices of individual voters. However, these preferences are not constructed out of thin air, rather, they are built upon a myriad of factors, ranging from socioeconomic conditions to candidate characteristics, which can significantly impact electoral results. Thus, comprehensively analyzing these factors is essential for unraveling the complexities of electoral dynamics, informing political strategies, and ensuring the integrity and effectiveness of democratic processes. By examining the multifaceted influences on electoral outcomes, researchers and policymakers can gain valuable insights into the functioning of democratic systems, the behavior of voters, and the broader societal trends that shape political landscapes. This analysis, in turn, facilitates the development of evidence-based policies and interventions aimed at fostering inclusive and representative democracies.

The size of local legislative councils, as quantified by the number of legislators comprising them, presents a potentially significant factor for comprehending variations in the electoral performance of incumbent mayoral officials seeking reelection. Scholarly investigation into this particular aspect remains, to the best of our knowledge, markedly limited<sup>1</sup>, leaving considerable room for exploration. By scrutinizing the impact of council sizes on power dynamics, this research endeavor aims to contribute to shedding light on the potential effects associated with this variable. Delving into this unexplored terrain has the potential to yield valuable insights into the intricate interplay between council size and electoral outcomes.

Several countries, such as Argentina, Brazil, Germany, and Italy have laws dictating different institutional features for municipalities according to their population. These setups are particularly convenient for isolating and analyzing the effect of the corresponding change, as the municipalities with population near the cutoffs are usually similar, and can be believably used as counterfactuals for one another.

A study that takes advantage of such a setup like this is Egger & Koethenbueger (2010). The authors use data from German municipalities to establish a causal link between the number of legislators a municipal council has (to which we will from now on refer to as “council size”) and public spending. Such study is possible because in Germany council size is a discontinuous function of the municipality's population.

The link between council size and public spending had also previously been established in works such as Baqir (2002) and Petersson-Lidbom (2007), but Egger & Koethenbueger raise doubts about the validity of the data and techniques used to identify causality in both cases.

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<sup>1</sup> Only one paper addressing this subject, titled *Larger Legislatures and the Cost of Political Brokerage: Evidence from Brazil* authored by Anderson Frey, has been identified thus far, although it has not yet undergone formal publication as of June 2023.

The argument developed by Egger & Koethenbueger (2010) states that legislators internalize the benefits of public projects aimed at their jurisdictions, and sometimes more specifically, to the group of voters that they aim to represent, but because of the nature of cost-sharing in political administration, they underestimate the costs of carrying out these projects. Therefore, council size should have a positive effect over government spending. This is referred to in the literature as pork-barrel spending.

While not necessarily directly related to our work, these studies are a perfect example of institutional setups affecting electoral results or other neighboring topics, and also serve to show a similar method to the one we will use to analyze an issue in the framework of politics.

Despite the aforementioned examples, our search of the existing literature has yielded only a solitary reference pertaining to the potential direct impact of council sizes on electoral outcomes, should such an effect indeed exist. It is precisely towards this unexplored avenue that our endeavors are directed, aiming to shed light on the relationship between council sizes and electoral results.

In this work, the size of municipal councils is posited as a factor in elucidating the electoral performance of incumbent mayors seeking reelection. To analyze the existence of this link we use the publicly available replication data from Egger & Koethenbueger (2010), and compound it with data regarding the results of mayoral elections in the state of Bayern provided by the Bavarian State Office for Statistics. With this, we can exploit the same quasi-natural experiment as Egger & Koethenbueger (2010) while looking for a different result. Specifically, we investigate if a causal relationship exists between council size and the percentage of votes that the incumbent party obtains in mayoral elections.

Our investigation is built upon the idea that in municipalities with a larger quantity of legislators, mayoral administration becomes more ineffective, because mayors find themselves obligated to negotiate with more people, thus augmenting the cost of negotiation and making it more difficult for mayors to carry out their desired policies.

By exploiting the discontinuity observed in council sizes across various population sizes in Bavarian municipalities, we can posit that municipalities situated just below and above each threshold share sufficient similarities (except for the aforementioned variation in the number of legislators) to be deemed suitable counterfactuals for one another. However, it is imperative for us to substantiate this assertion by subjecting the aforementioned proposition to a battery of balance tests, thereby validating the comparability of these municipalities. Causal inference of this effect through regression discontinuity analysis is mostly threatened by potential non-comparability of municipalities below and above each threshold (because of, for example, other confounding variables that may change at the cutoffs). It is because of this that balance testing is necessary.

Discontinuities in council sizes across Bavarian municipalities are relevant and considerable in size, all of them being between 10 and 50% of the full corresponding council size. This provides further robustness to our analysis.

We fail to find an effect of variations in council sizes over electoral results, and though it is not fully possible to state that such an effect is non-existent, it does seem unlikely. At least,

we learn that any further investigation upon this topic would likely require either a different definition of what an incumbent candidate is, or more complexity in the hypothesis, with mechanisms that propose differential effects in response to variations in council composition.

### **Structure of Local Governments in Bayern**

In the municipalities of Bayern, the governance framework consists of two primary entities: the legislative council and the mayoral office. The Municipal Code of Bavaria delineates the respective roles and responsibilities of these entities. The mayor, along with their team of officials, assumes the role of implementing and proposing policies to the council, while also overseeing the day-to-day administrative affairs of the municipality. In contrast, the council assumes the authority to formulate, deliberate upon, and vote on projects and regulations. Notably, this includes decisions regarding the imposition of taxes and fees, given the fiscal autonomy enjoyed by Bavarian municipalities. Additionally, the council assumes regulatory control over land use, augmenting its responsibilities, as well as its role in scrutinizing the performance of the mayoral administration.

Significantly, the mayor holds a dual role as both the chief executive of the municipality and the chairman of the council, wielding influence in both arenas. In the council's deliberations, the mayor possesses voting rights, enabling direct participation in decision-making processes. Furthermore, the mayor retains the authority to exercise veto power over actions undertaken by subcommittees operating under the council's supervision.

The rules governing local elections in Bayern during the period of the sample were fairly standard. In order to participate in the electoral process as voters, individuals must have met the minimum age requirement of 18 years, and citizens from other European Union countries were accorded the right of both voting and participating as candidates. Local elections were conducted once every six years, and though most municipalities tended to hold elections on the same year as the others, this is not obligatory.

Securing victory in the election necessitated attaining a minimum of 50% of the total votes cast. However, in instances where no candidate managed to achieve this threshold, a second round of voting was scheduled. These supplementary rounds took place approximately one week subsequent to the initial election and exclusively involved the top two candidates who garnered the highest number of votes in the initial round. The ultimate outcome of this second round of voting determined the overall winner of the general election, with the candidate emerging triumphant being declared as the victor.

The two main parties in local bavarian elections in the period analyzed are the Christian-Social Union in Bavaria (*Christlich-Soziale Union in Bayern* or CSU, which is the bavarian branch of the larger CDU, or Christian-Democratic Union) and the Social Democratic Party of Germany (*Sozialdemokratische Partei Deutschlands* or SPD), though it is not uncommon for other parties to participate, or for candidates to run independently. The CDU and the SPD were the two biggest parties in Germany at the time, therefore at least in this aspect the political landscape in Bayern reflected the one in the whole country.

### **Mechanism of the Proposed Link**

We believe that council size could be a relevant factor in explaining the electoral performance of incumbent mayors seeking reelection. This hypothesis is built upon the extensive authority conferred upon municipal councils, which includes the duty of oversight of mayoral administration, as well as the formulation of bylaws and ordinances pertaining to budgetary and financial matters, among other jurisdictional aspects. Consequently, incumbent mayors often find themselves *de facto* obligated to engage in negotiations with council members in order to carry out proposed projects and policies. It follows that an increase in council size should correspondingly amplify the political costs and difficulties associated with such negotiations between the mayor and council members, rendering the achievement of the mayor's objectives less likely, thereby undermining the effectiveness of their governance. As a result, this erosion of effectiveness should diminish the popularity of the incumbent party among the electorate, resulting in a reduced percentage of votes garnered in mayoral elections, particularly when compared to districts characterized by a smaller number of council members.

Though it may seem at first that this mechanism contradicts Egger & Koethenbueger's findings regarding pork-barrel spending, it is important to note that our proposition does not mean that there should be fewer approved policies in general, but rather that there should be fewer policies proposed by mayors approved. However, it must be stated that due to a lack of pertinent data we have no possible way of testing this mechanism, nor have we found literature to support this.

One counterargument may assert that mayors typically negotiate not with individual legislators, but rather with the local leaders of each political party. However, this contention does not hold true for a substantial portion of the sample employed in this study due to two primary reasons. Firstly, in the municipality of Bavaria, both mayoral and legislative elections frequently witness independent candidacy, detached from established political parties. Secondly, the sample comprises a considerable number of small municipalities, where the influence of major political parties is likely attenuated compared to larger municipalities and cities. Consequently, the hypothesized absence of a robust party structure or hierarchy at the local level may lead to a greater propensity for councillors to act autonomously, further bolstering the relevance of council size as an influential factor. Though there is no literature to back up this last point, it is a fact that in the elections in our sample, either the CSU or the SPD achieve victory 60% of the time in municipalities with fewer than 20,000 inhabitants, and 86% of the time in municipalities with 20,000 or more inhabitants. One possible argument in this direction, however, could include conclusions drawn from Baron (1989). In a legislature composed of more members, it can be thought that it is harder for parties to impose discipline upon its members. In this context, Baron (1989) posits that larger coalitions will need to be formed to ensure policy approval. Under these conditions, it seems natural that costs of political negotiation would be higher. While it is not a perfect fit with the scenario that exists in Germany, it is at first glance plausible that this dynamic is replicated and perhaps even intensified in a context of high independence for legislators.

Despite the previously mentioned arguments, it is essential to consider additional mechanisms that may be in operation. One such mechanism is highlighted in the study conducted by Bergh, Fink, and Öhrvall (2017), where they present empirical evidence suggesting that an increase in council size corresponds to a higher incidence of reported corruption. Similarly, Fan, Lin, and Treisman (2009) arrive at a comparable finding by

examining the relationship between the quantity of public employees and corruption levels, rather than focusing solely on council size. Expanding upon this, Britto and Fiorin (2020) delve deeper into the dynamics by investigating whether the effect of an "extra seat" in council differs based on whether it is secured by the incumbent party (yielding higher corruption levels) or the opposing party (yielding lower corruption levels). Corruption itself carries adverse implications, including hindrances to economic growth, as elucidated by Holmberg and Rothstein (2011). The impact of slower economic growth, in turn, has been associated with election outcomes, as demonstrated by Bennett and Wiseman (1991). Even in the absence of these supporting studies, it is widely acknowledged that corruption is generally disfavored by voters and, if perceived as widespread, is likely to have a negative influence on the electoral prospects of incumbents. While the precise mechanisms underlying these effects remain elusive and warrant further investigation, it is vital to acknowledge the potential existence of alternative mechanisms alongside the previously proposed cost of negotiation.

### Data and Methodology

The database used consists of a panel of 2056 Bavarian municipalities observed between the years 1984 and 2004. During this period, there were four major election years, 1984, 1990, 1996, and 2002. Some municipalities held elections outside these four years for various reasons. In total, we analyze 8057 elections.

We also possess variables describing the population and the council size of each municipality each year, which is, as mentioned above, a discontinuous function of the municipalities' population in the third quarter of the year prior to the election, as dictated by law and measured by the Bavarian State Office for Statistics (*Bayerisches Landesamt für Statistik und Datenverarbeitung*). To clarify, this means that for example, the council size for a municipality between 1984 and 1990 was determined according to that same municipality's population in October, November or December of 1983. The following table taken from Egger & Koethenbuerger (2010) states the council size dictated by German law for each level of population. The exceptions stated by German law are the cities of Nuremberg and Munich, which have fixed council sizes of 70 and 80 councilors respectively, irrespective of their population. Since these two cities cannot be defined either as treated or untreated, they must be excluded from the study. On average, council sizes increase by 22.8% at each cutoff, with the largest increase being 50% more seats, and the smallest being 10%. This characteristic of Bavarian municipalities allows us to apply a sharp regression discontinuity design to carry out our investigation.

	Population Size		Council Size	Quantity of Elections in sample
0	< pop <=	1000	8	716
1000	< pop <=	2000	12	2552
2000	< pop <=	3000	14	1398

3000	< pop <=	5000	16	1531
5000	< pop <=	10000	20	1133
10000	< pop <=	20000	24	523
20000	< pop <=	30000	30	89
30000	< pop <=	50000	40	60
50000	< pop <=	100000	44	35
100000	< pop <=	200000	50	17
200000	< pop <=	500000	60	4

The variables mentioned above are publicly available as replication data for Egger & Koethenbuerger (2010). Other variables in our database concern the results of all the elections in the period mentioned, including the name and partisan affiliation of the mayor, the name of the winner of each election, the partisan affiliation of each candidate, the amount of votes obtained by each candidate, the amount of total, valid, and invalid votes, the date of each election, the employment of the winner, and a variable determining if the election required a second round of voting. This data was provided by the Bavarian State Office for Statistics.

With the above mentioned variables, we have all the data necessary to construct new variables that aid us in executing our analysis. These are the distance to the nearest population cutoff (as a percentage of the cutoff) and the percentage of votes obtained by the incumbent in the election.

<b>Variable</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Population</b>	4,887.95	9,998.09	186	264,852
<b>Council size</b>	15.30	5.59	8	60
<b>Total votes in election</b>	2,491.82	4,518.88	104	121,186
<b>Votes obtained by incumbent (in %)</b>	69.63	21.69	4.25	100
<b>Distance to nearest cut-off (in %)</b>	-3.41	17.36	-80.60	33.29

Note: negative distances to cut-off correspond to municipalities that are below the nearest cutoff, while positive distances correspond to municipalities above the nearest population cutoff.

A significant aspect that requires clarification regards the precise definition of our use of the term "incumbent". In numerous instances in the sample, the mayor either did not seek reelection or ran for reelection representing a different political party. To address this, we have made the determination that this study is best conducted by adopting a party-centric approach, whereby the incumbent is identified as the candidate who stands for election on behalf of the political party to which the previous mayor belonged at the time of the most recent election.

In order to ensure the coherence of the analysis, we have excluded elections from the dataset only when the governing party failed to nominate a candidate. Nonetheless, it is noteworthy that such exclusions occurred in a negligible fraction of the elections within the database. Specifically, this circumstance transpired on precisely 100 occasions, constituting a mere 1.2% of the total number of elections examined during the study period

Looking to avoid potential endogeneity bias and enhance the internal validity of our analysis, we propose the adoption of a sharp regression discontinuity design, employing the population as the running variable. This approach is deemed most suitable for our study, as it allows us to minimize the confounding influence of variables that may be correlated with council size and impact the percentage of votes garnered by the incumbent seeking reelection.

To execute this, we normalize the running variable and aggregate the available cutoff points utilizing the methodology advocated by Cattaneo, Titiunik, and Vazquez-Bare (2020). By employing this approach, we obtain a result that represents the weighted average treatment effect of increasing council size, contingent upon the following assumptions. Firstly, we assume that, aside from council size, there are no other substantial differences between municipalities located above and below each cutoff point. Consequently, municipalities below each cutoff can be credibly utilized as counterfactuals for municipalities situated above the respective cutoff point. Secondly, we must suppose that there are no pertinent asymmetries in the effects observed at different cutoff points that could potentially distort the overall effect estimation.

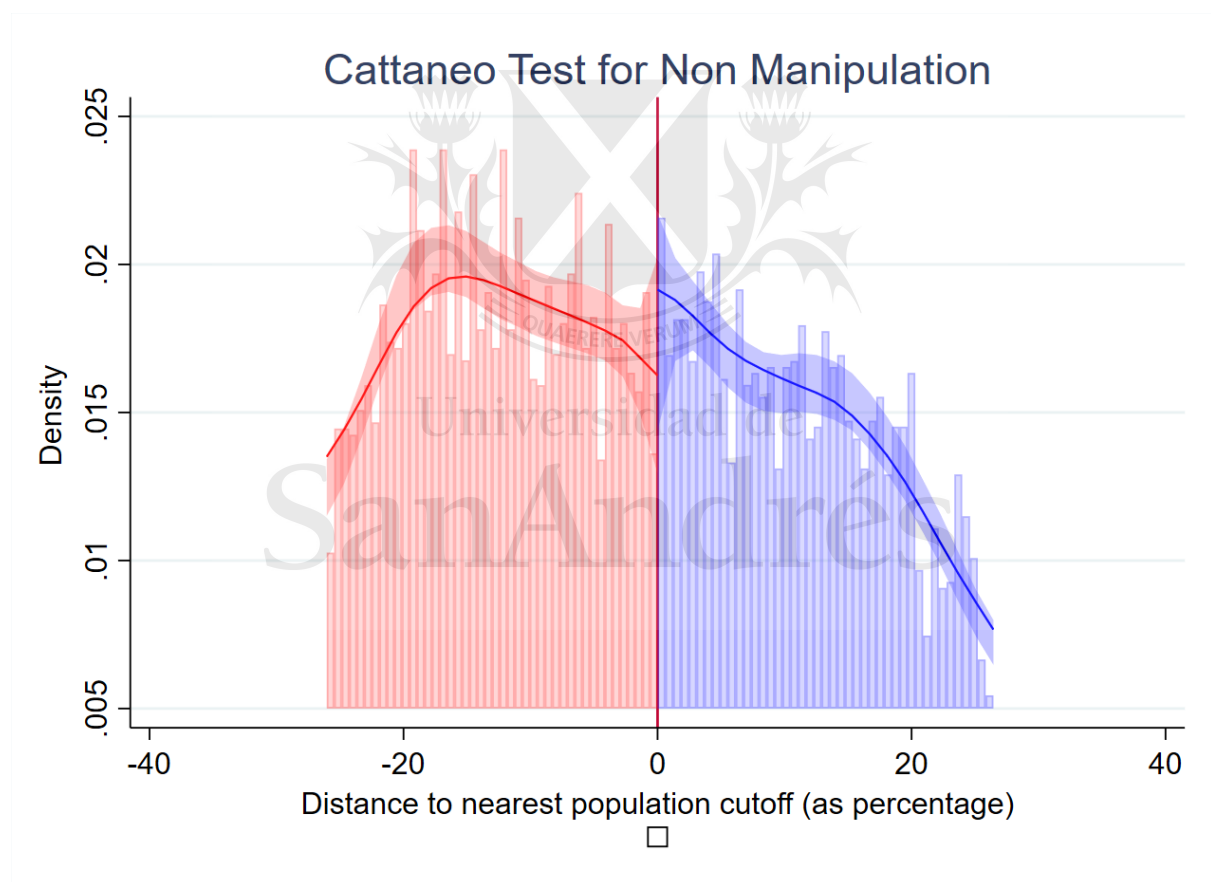
Regarding the first of these assumptions, to the use of a sharp regression discontinuity design, we managed to obtain from the Bavarian State Office for Statistics a number of variables to conduct balance tests and prove that these municipalities are similar in many ways and can be believably used as counterfactuals for one another. All the variables obtained stem from data collected by the Bavarian government every year. We have selected the statistics corresponding to two years before each election, and therefore, one full year before the assignment of each municipality to either the control or the treatment group. Thus, these tests prove that the municipalities studied were of similar characteristics before both the assignment and the treatment, and thus the assignment to each group can be believed to be random.

The variables used for the balance tests were government expenditure on public sector salaries, quantity of building permits issued, homes built, quantity of residents in geriatric institutions, quantity of kindergarten teachers, quantity of kindergartens, net migration, quantity of deaths, quantity of births, quantity of secondary schools, quantity of residents with severe disabilities, percentage of total work hours provided by women, quantity of employers, and quantity of employees. All of these variables were divided by the population



of each municipality, and compared on a per capita basis. The results of the tests showed that there existed no significant differences between municipalities above or below the population thresholds across these variables in the years studied. Moreover, and though they could not be tested pre-treatment because of the nature of the variables, municipalities above and below the nearest population cutoff also tested to be similar on quantity of candidates and voter participation in electoral years.

To verify that no manipulation of population exists with the purpose of increasing council size that could result in an endogeneity bias, we also conducted a Cattaneo, Jansson and Ma (2018) test of continuity or non-manipulation of the running variable. The null hypothesis of non-manipulation cannot be rejected thus further validating the use of a regression discontinuity design. Moreover, it is unlikely that any manipulation of population size exists since politicians at the municipal level have no formal control over the state-level Bavarian Office for Statistics.



After pooling the cutoffs and turning the running variable *distance to nearest cutoff* into a percentage based measure, we set up the regression discontinuity design.

As mentioned earlier, the council size for each municipality for each election is a discontinuous function of the municipality's population in the third quarter of the year before said election. This means that it should be correct to treat municipality-year pairings as

independent from each other, and there should be no need of clustering standard errors to account for correlations in assignment to treatment.

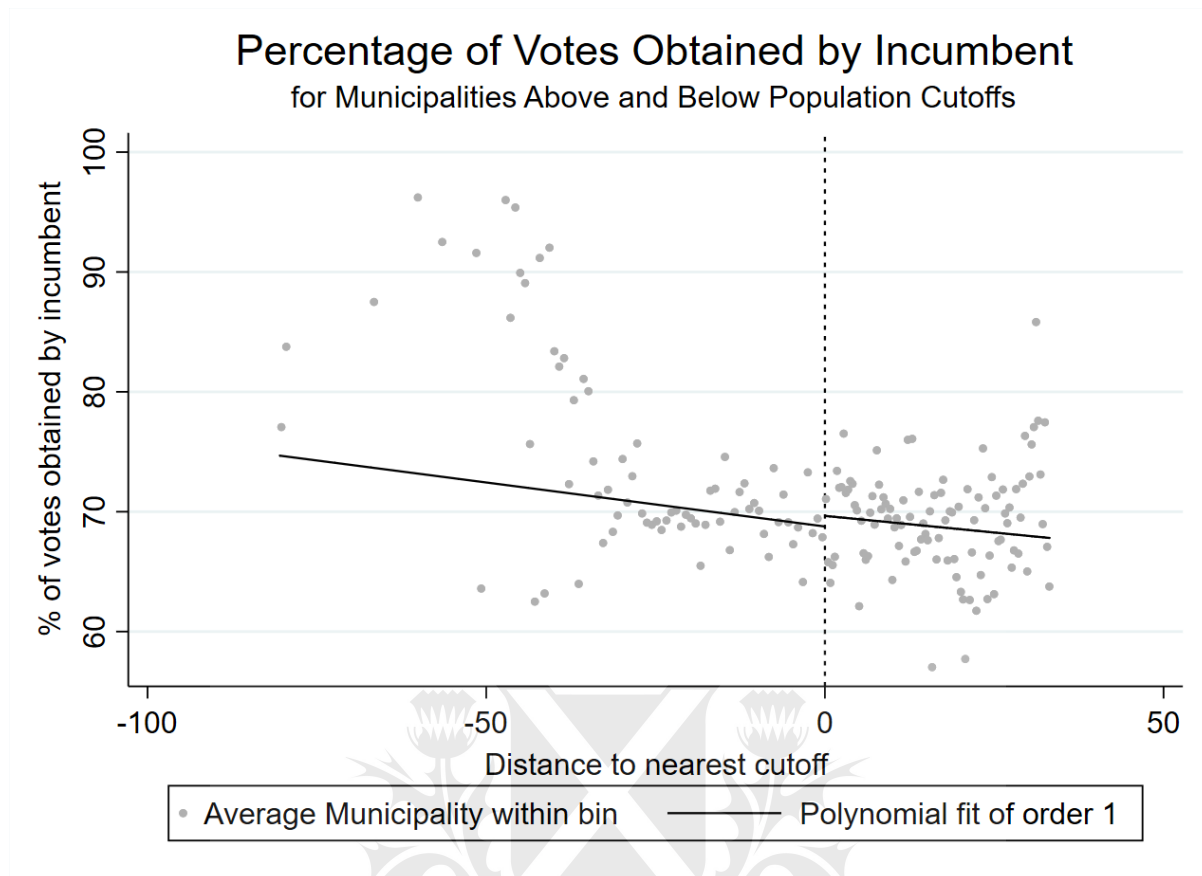
We construct two different specifications of the model, the first without any covariates, and the second, our preferred specification, with fixed effect by year added, which should help boost the model's efficiency.

## Results

We find no evidence of a link, either positive or negative, between the council size of municipalities and the percentage of votes obtained by the incumbent mayoral candidates, which contradicts the hypothesis.

In total, there are 4586 elections considered as below the cutoff and 3471 above it. Not only is the effect found of 0.93 points larger percentage obtained by the incumbent in municipalities that are above the cut-off, which is economically insignificant, but also statistically insignificant, as the p-value found is 0.55.

Outcome Variable: share of votes obtained by incumbent						
Model Specification	Coefficient	Std. Error	z	P >  z	95% Conf. Interval	
No fixed effects	0.9276	1.5934	0.5822	0.56	-2.1953	4.0505
Fixed effect by year	0.9369	1.573	0.5956	0.551	-2.1462	4.0199



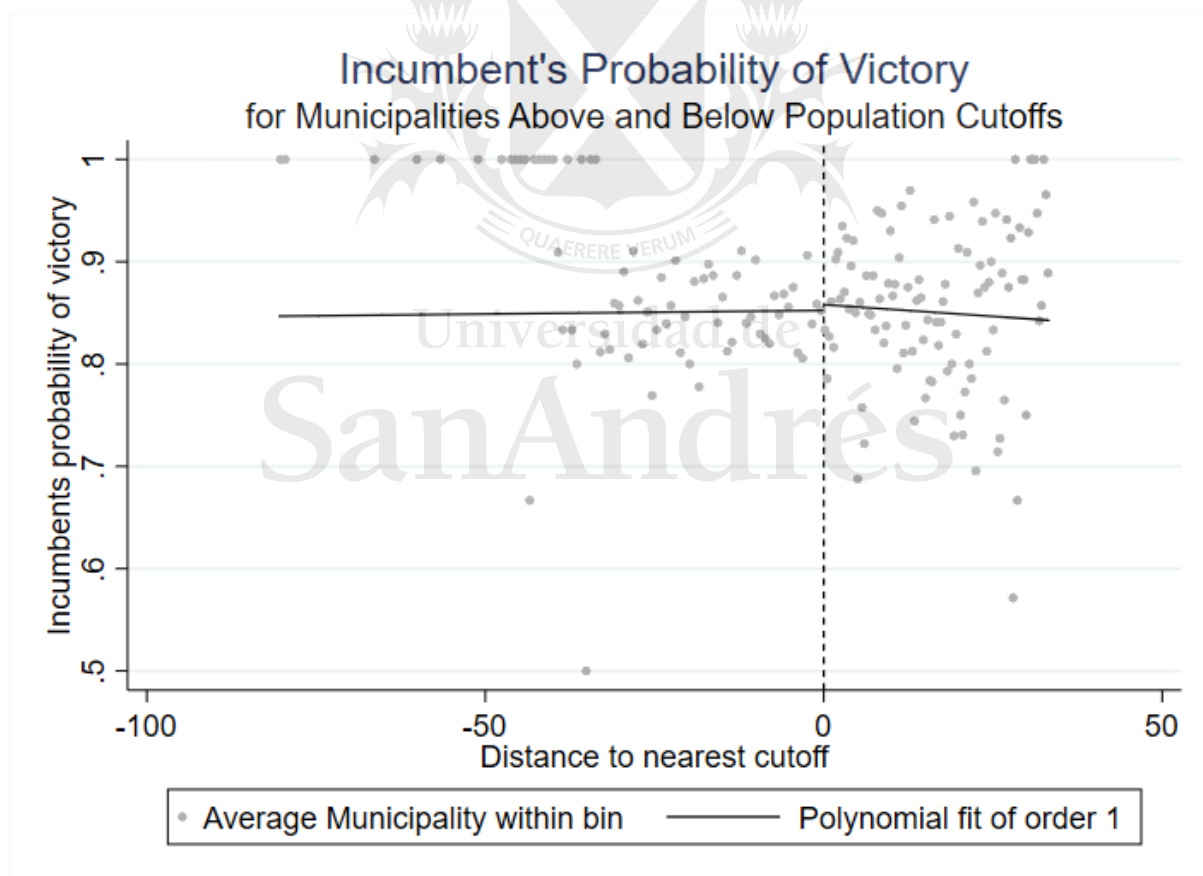
As can be seen in the above graph, the effect of increasing the size of legislative councils over electoral results is minimal at most, and the analysis carried out with our data suggests it is likely non-existent.

There are a few possible explanations for the inexistence of this relationship between council sizes and percentage of votes obtained by an incumbent. For example, it might be the case that the costs of political negotiation don't increase (or increase only negligibly) when a few council seats are added, so that there's no effect on the government's effectiveness. Another possible explanation is that the costs of negotiation do decrease the mayor's effectiveness, but that this doesn't matter to voters, either because they don't care much about effectiveness (and put more weight into other factors such as a candidate's personality or what party they represent), or because they already know that the extra seats will reduce the mayor's effectiveness, and that this effect is independent of who actually occupies the mayoral office, so the reduction in effectiveness does not affect electoral outcomes at all.

It's also reasonable to think that a link might exist, but that the effect of council size over the incumbent's share of votes depends on whether the extra seats in council belong to members of the incumbent's party, or to an opposing one. In the case that the extra seats belong to the incumbent's party in a greater share than the rest of the council's seats, it could be argued that it would be a benefit for the mayor as it could help them be more effective during their government. On the other hand, if the extra seats benefit opposing parties, then the situation would resemble this work's main hypothesis of less governmental effectiveness.

There does not appear to be any difference in results when the outcome variable is changed from the share of votes obtained to the incumbent's probability of victory (measured as the proportion of victorious incumbents above and below the closest population threshold), which seems to be another viable manner of analyzing our hypothesis.

Outcome Variable: incumbent's probability of victory						
Model Specification	Coefficient	Std. Error	z	P >  z	95% Conf. Interval	
No fixed effects	-0.0044	0.0272	-0.1604	0.873	-0.0576	0.0489
Fixed effect by year	-0.0046	0.027	-0.1694	0.865	0.0575	0.0483



## Conclusion

Based on our analysis of mayoral elections in Bayern, we cannot assert the presence of a discernible effect of council size on electoral outcomes. While we believe it is reasonable to

extrapolate this conclusion to other regions, it would be of interest to explore whether a similar relationship exists at different levels of government, such as the size of national congresses and its impact on presidential elections. However, conducting such a study may pose methodological challenges that need to be addressed.

Future research avenues could focus on delving deeper into the mechanisms previously discussed. As highlighted, council size may have both positive and negative effects on electoral results, such as the costs of negotiation between mayors and council members, or the potential decline in corruption if the additional seats in the council do not favor the incumbent party. Investigating whether these mechanisms were at play in our sample, either offsetting each other or absent altogether, would be insightful. Unfortunately, such analysis is currently beyond the scope of our study, but we encourage researchers to pursue this line of inquiry or explore other factors that could influence electoral outcomes.

By continuing to explore the relationship between council size and electoral results, researchers can deepen our understanding of the complex dynamics underlying democratic processes. Uncovering the mechanisms and factors that shape electoral outcomes contributes to the broader scholarly debate on governance and policy making.



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