

YOUNG VS. OLD POLITICIANS AND PUBLIC SPENDING PRIORITIES

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Abstract

Can young politicians influence policy choices in political bodies dominated by old politicians? We study this question using hand-collected candidate-level data on municipal elections (1996-2014) and detailed administrative data on municipal spending from Bavaria. Our identification strategy is based on within-party candidate-level races for marginal seats. We find that municipalities with a higher share of young councilors spend more on public goods valued by young inhabitants: child care and schools. Thus, the underrepresentation of the young in the political class is detrimental to their interests. We further show that this effect is conditional on the age structure of constituencies, i.e. electoral incentives remain important even in contexts where political selection considerably affects policy choices.

Keywords: Young and old politicians, political selection, municipal spending, local councils

JEL codes: D72, D78, H70, H72, J13, J14

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1 Introduction

At least three recent crises have brought simmering intergenerational divisions to the forefront. Young people are more worried about climate change than seniors (BBC, 2021). During the Covid-19 pandemic, heavy restrictions were imposed on children and young adults, mainly to protect the elderly (Financial Times, 2020). In the Brexit vote of 2016, young British voters were in favor of remaining in the EU, but were outvoted by older voters (Norris, 2018).

In ageing societies, it is not surprising that the interests of the young receive an ever diminishing weight in politics. Yet, the young's interests would be likely undervalued even in the absence of shifting demographics. One reason is that policymakers are typically much older than their constituents.¹ Can we expect an overwhelmingly old political class to take the preferences of the young sufficiently into account?

The theoretical literature on political selection suggests that in a world with imperfect electoral accountability, politicians have the ability to steer policies towards their own preferences (Besley, 2005). Given their typical age, most politicians may thus consistently take decisions that favor the old and thereby implicitly neglect or even go against the interests of the young.

On the other hand, old politicians may adequately consider the welfare of the young in their policy choices. They may either be genuinely altruistic towards younger generations or they may be concerned about the welfare of their own children and grandchildren. Even if old politicians were purely self-interested, they may be in favor of investing in the future of younger cohorts. Various theoretical models provide arguments for this perspective. Poutvaara (2004) develops a model in which investing in the education of the young makes fixed factors owned by the old (such as land) more valuable. Monten and Thum (2010) argue that (fiscal) competition for young inhabitants between governments might force old politicians to take the policy preferences of the young into account.

¹For example, only 17.5% of national parliamentarians across the globe were below 40 years in 2021 (Inter-Parliamentary Union, 2021).

Given this theoretical ambiguity on whether old politicians systematically neglect the preferences of the young, we study in this paper whether local councils with a higher share of young councilors spend more on policy areas that are arguably more important to the young. If the age composition of the council influences fiscal policy, it stands to reason that the overrepresentation of older cohorts in political leadership is detrimental to the interests of the young.²

For our empirical analysis, we combine unique hand-collected data on candidates for local council elections with administrative data on local fiscal policy from the German state of Bavaria.³ The hand-collected candidate data includes information on list, name, birth year, occupation, votes, initial list rank, and final list rank for candidates running in elections over the period 1996-2014. This detailed data allows us to implement a credible identification strategy and to disentangle the effect of age on fiscal policy from other councilor characteristics. The administrative fiscal data was obtained by the Bavarian Statistical Office, which – besides data on total spending and revenues – also provides local spending data on various fine-grained subcategories. Thus, we are able to examine fiscal priorities across different policy domains.

One obvious concern when exploring the effect a local council's age composition on fiscal choices is endogeneity. For example, councils with many young members may be located in municipalities with younger populations. Any effect of the council's age composition on policy choices in municipalities with younger councils may be due to councils pandering to their younger electorate rather than due to the age of the councilors. To address endogeneity, we implement an IV-design based on candidate-level races for marginal council seats.

More specifically, we make use of the fact that the Bavarian local electoral system combines a party-level proportionality rule with candidate-level preferential voting. Parties receive council seats roughly equivalent to their vote share. Which candidates will receive the seats won by a party depends on how many preferential votes each candidate had obtained. Accord-

²Of course, to make definite normative claims, one would need to rule out that younger cohorts make sub-optimal choices and that, therefore, older politicians act paternalistically.

³We hand-collect municipal election data as there is no official source that collects this data in a centralized fashion.

ingly, in each party that wins at least one seat there is a candidate who barely wins a council seat and another candidate who barely misses a seat. If these two candidates are of a different age, a natural experiment ensues. If the younger candidate wins, i. e. has more preferential votes, she enters the council and increases the share of young councilors, and vice versa. Since these are races for marginal seats, the identity of the winner, and especially her age, are arguably quasi-random (we discuss this assumption more extensively below). We thus use the share of victories by young candidates over old candidates in races for marginal seats as an instrument for the share of young councilors.

We find that an exogenous increase of 10 ppts in the share of young councilors causes an increase in the share of social spending (relative to total local spending) by 9%.⁴ Further analysis indicates that this effect is driven by spending on child care, which accounts for about half of social spending in Bavarian local budgets. We also find a significantly positive relationship between the share of young councilors and the share of spending on schools, although this effect is less robust than the results regarding social spending and child care. Overall, the results suggest that the overrepresentation of the old in the political class harms the young.

This paper contributes to various strands of the literature. First, it is related to the literature on political selection. This literature studies the link between various candidate characteristics and policy choices (Besley, 2005).⁵ However, despite the growing importance of inter-generational conflicts, the effect of politicians' age on policy choices has received relatively little attention.⁶

Early contributions include Alesina, Cassidy, and Troiano (2018), who find that young mayors induce stronger political budget cycles in total spending than old mayors in Italy, and

⁴Given an average social spending share of 8.1%, this represents an increase by 0.7 ppts.

⁵E.g. gender (Hessami and Lopes da Fonseca, 2020), occupation (Hyytinen, Meriläinen, Saarimaa, Toivanen, and Tukiainen, 2018), ethnicity (Franck and Rainer, 2012), caste (Pande, 2003), regional origin (Hodler and Raschky, 2014).

⁶The reasons for the underrepresentation of the young in politics have been studied more extensively. For example, Stockemer and Sundström (2018) find that electoral systems and rules play a role. In particular, proportional representation and a lower entry age lead to more young members of parliament.

Curry and Haydon (2018), who find that older members of the U.S. House of Representatives introduce more bills on issues that are relevant for the elderly. The study most closely related to ours is arguably McClean (2021), who explores how the composition of local spending differs between municipalities with old and young mayors in Japan. He finds that municipalities with young mayors spend more on welfare for young families and on investments. One key difference between our paper and McClean (2021) is that we focus on local councils. Unlike mayors who hold a singular powerful office and typically enjoy wide executive autonomy, councilors are members of a deliberative body where they have to convince fellow councilors. Whether and how young politicians can influence policy in deliberative bodies where they are typically in the minority is unclear.

Our work is also related to and relies on findings in the literature on age-specific differences in policy preferences. Sørensen (2013) uses spending on education, health care and pensions for the elderly to show how preferences differ with the age of voters, albeit only to a limited extent. Andor, Schmidt, and Sommer (2018) find that the old are less concerned about climate change and allocate fewer resources to environmental policies. Ahlfeldt, Maennig, and Mueller (2021) find that young Swiss voters are more likely support initiatives related to environmental issues and other initiatives that benefit their generation. Busemeyer and Lober (2019) find that the elderly are less likely to support spending on education when this implies pension cuts. Similarly, Cattaneo and Wolter (2009) find that senior citizens are less willing to allocate spending to education using Swiss survey data. Overall, this literature suggests that intergenerational differences in spending priorities indeed exist.⁷

⁷Fiva, Nedregård, and Øien (2021) also show that young politicians in the Norwegian parliament raise other issues in legislative speeches (childcare, schools) than old politicians (health care) within the same party. It thus appears that politicians' policy priorities may be shaped by their personal circumstances and preferences.

2 Background

2.1 Local governments in Bavaria

2.1.1 Tasks and responsibilities

There are 2,056 municipalities in Bavaria: mostly villages and small towns and a handful of large cities. Municipal self-governance is a key trait of state organization in Germany. While there are state-level mandates, municipalities enjoy wide autonomy in their fiscal policy. Each municipality decides on its local tax rates (notably for local property and business taxes) and how to allocate spending. The state government provides grants and distributes a share of income and sales tax revenues to municipalities (Hopp-Wiel and Dülk, 2016).

Every year municipalities compile a budget draft which includes all spending and revenues, as well as business and property tax multipliers. The process is typically initiated by the mayor and prepared by the finance department of the municipality (*Kämmerei*). The decision on how much to spend on each item is achieved after several rounds of discussions in either the municipal council or in a subcommittee. The final decision on the budget is taken by the council in a public meeting (Hopp-Wiel and Dülk, 2016).

2.1.2 Local political institutions

The council is the main political body (*Hauptorgan*) of a municipality setting the broad objectives for the local administration. Municipal councils in Bavaria are elected every six years. The size of a council is a function of the population of a municipality. Most Bavarian councils are small. As Table A.1 shows, councils range from 8 seats in small villages to 80 seats in Munich, the state capital. Both large national parties (notably CSU, SPD, and Greens) as well as local voter initiatives participate in local elections.⁸ The voter initiatives typically have

⁸Table A.2 in the online appendix shows that among the national-level parties, the largest share of candidates runs for the CSU.

local agendas and often refer to single neighborhoods within a given municipality or to specific candidate characteristics such as gender or age.⁹

Besides the council, the other important local office is the mayorship. Mayors run in a personalized campaign but are supported by one or more lists.¹⁰ The position of the mayor in Bavaria is relatively strong, compared to other states, such as Hesse (Hessami, 2018): a Bavarian mayor is the head of the administration and has a veto on council decisions.¹¹

2.1.3 Open-list elections of councils

Municipal councils are elected via an open-list system, sometimes referred to as preferential voting. Before the election, parties decide on a list of candidates. Each candidate receives an initial rank on the list. Voters have as many votes as there are seats in council. It is possible to split the votes across several lists (*Panaschieren*) and to cast as many as three votes on one single candidate (*Kumulieren*).

Parties receive seats in the council roughly proportional to their overall share of votes. Candidates are then ranked according to their personalized votes. Those candidates with a rank smaller than the number of seats won by their parties then receive a seat in the council (Baskaran and Hessami, 2019).¹² This within-party seat distribution rule provides the core of our identification strategy (see Section 4 for further details).

⁹For example, *Junge Liste* (List of the youth) or *Frauenliste* (Womens' list).

¹⁰Candidates can run for large supra-regional parties or local lists. We use the terms party and list interchangeably in the following.

¹¹Due to the importance of the mayor for local decision making, we examine the interaction of young councilors and young mayors explicitly in Section 7.

¹²The initial list rank of a candidate thus has no direct impact on whether she receives a seat in the council. Naturally, there are indirect effects of greater visibility at the top of the list. In addition, the initial rank might signal candidate quality and motivation for office.

3 Data

3.1 Candidate-level data

To estimate the effect of young councilors on municipal spending, we rely on a unique hand-collected dataset on local election results for the German state of Bavaria for 1996, 2002, 2008, 2014, and 2020. Information on candidates is not available from a centralized source. As such, we assembled this data by hand using various sources, notably by contacting municipalities individually, by relying on official (online) publications, and information provided in local newspapers. As Figure 1 shows, the coverage of the data varies across election years and is generally sparser for elections further in the past.

[Figure 1 goes here]

Our data includes the name and list of candidates, their initial list rank, their final list rank, and the number of votes they received. For a subset of candidates, we have information on their occupation and birth year. We infer gender and education from candidates' names and occupation, respectively. In total, the dataset includes information on 402,956 candidates for the years 1996-2020. We calculate candidates' age as election year - birth year.¹³

While we do not use information on the 2020 election in the analysis because our data on outcome variables ends in 2019, we exploit this data to obtain a better coverage on the candidate age variable for earlier elections. Candidates who run more than once are matched within municipalities across years to recover missing information on birth years. The matching is based on first name, second name, and list. Due to minor misspellings and small deviations in candidate or party names, we use a fuzzy match.¹⁴ Especially for 2008 and 2014, the fuzzy match increases the coverage of candidates' age substantially. After the match, data on age is available for 104,207 candidates, or 40.9% of the full sample.

¹³Since information on exact birthdays (i.e. day and month) is not available, this results in measurement error for small age differences of competing candidates. A candidate born in December is of basically the same age as a candidate born in January of the following year. In our calculation the age difference would be one year, however.

¹⁴For details on the matching procedure see Section A.3 of the online appendix.

Figure 2 displays the age structure of Bavarian councils and contrasts it with that of the overall Bavarian population. From 1996 to 2014, the average age of councilors in our sample has increased from 47 years to 50 years, as subfigure (a) shows. About 21% of councilors are below 40 years (see subfigure (b)). Subfigure (c) illustrates the age structure of Bavarian councils based on our hand-collected sample compared to the age structure of the Bavarian population, as of 2014. Councilors are on average almost 50 years old and thus noticeably older than the general Bavarian population with an average age of 42 years.

[Figure 2 goes here]

3.2 Municipality-level data

We obtain annual data on municipal finances from the Bavarian Statistical Office, i.e. total spending, total revenue, total tax revenue, and total debt of municipalities.¹⁵ In addition, we use spending data on detailed categories, such as schools, construction and traffic or culture. These categories are subdivided further, such that we are able to zoom in on e.g. spending on different school types (primary, secondary school, etc.). Data is available for 1996 to 2019, and thus covers all years of all four six-year legislative periods that we consider.

Figure 3 shows local spending on ten major categories as a share of total spending. The largest category is general finance, accounting for 37.9% of total spending.¹⁶ Further large spending categories are social spending (12.5%), promotion of economic activities (10.6%), infrastructure (10.1%), and schooling (7.5%). The local administration itself accounts for 6.9% of spending.

[Figure 3 goes here]

¹⁵We also obtain information on municipality demographics (population, population ≤ 14 years, population 15 - 65 years, population ≥ 65 years) and other characteristics such as the area in square km.

¹⁶General finance (*Allgemeine Finanzwirtschaft*) includes e.g. transfers to other levels of administration, interest on debt, or the accumulation of reserves.

Not all types of spending are plausibly related to age-specific differences in preferences. General finance or spending on the local administration has no clear age-specific implications. We therefore focus on the following categories: social spending, infrastructure, schools, culture, and health care. In addition, we include the category *Other* in our analysis to capture all remaining categories. Table 1 below describes all outcome variables used in the analysis.¹⁷

[Table 1 goes here]

4 Empirical model

4.1 Structural relationship

Using municipality-year data, the structural relationship we want to estimate is:

$$y_{i,t} = \alpha + \beta \text{Young councilor share}_{i,t} + \lambda_i + \gamma_t + \varepsilon_{i,t}. \quad (1)$$

$y_{i,t}$ is the log of the share of different spending categories in municipality i in year t , *Young councilor share* is the share of councilors below or equal to 40 years of age. In Section 5.3.1, we provide details on why this is our preferred age threshold and investigate whether our results are robust to alternative age thresholds.

To account for time-invariant municipality characteristics and year-specific effects, we include municipality fixed effects λ_i and year fixed effects γ_t . Standard errors are clustered at the municipality level. While we have annual information on outcomes, the share of young councilors is constant over legislative periods. We combine these two dimensions and obtain a dataset in which outcomes vary annually and treatment varies every six years.

¹⁷Summary statistics on all variables are provided in Table A.3 in the online appendix.

4.2 IV design

4.2.1 Endogeneity concerns

One key concern with Equation (1) is that unobserved municipality characteristics affect both the share of young councilors and local fiscal policy. For example, councils with many young councilors might be more common in smaller or more rural municipalities where barriers to entry into local politics are lower. Alternatively, councils with many young councilors could be located in more urban areas where the electorate is more open towards younger politicians. In addition, rural municipalities might provide different public goods than urban municipalities.

Reverse causality may also play a role in our context. Voters might be more likely to elect younger councilors specifically in those municipalities where general social spending or child care spending is particularly low because they anticipate that the policy choices of the council depend on the age of the councilors.

4.2.2 Instrument and first stage

To address the potential endogeneity of the young councilor share, we develop an IV approach. We use the share of young victories, i. e. victories of candidates who are below or equal to 40 years against candidates who are above 40, in races for the last seat per list to instrument the young councilor share.¹⁸ In those races, candidates of different age compete for a council seat. The victory of the younger candidate (quasi-randomly) increases the young councilor share. Since there is typically more than one race per municipality, we take the share of young victories out of all races in the municipality as the instrument. Intuitively speaking, we compare

¹⁸Note that in principle there are as many races per municipality-year pair as there are lists in the council. In practice the availability of age and the focus on races of young versus old candidates reduces the number of races in each municipality available for our analysis.

municipalities where more young councilors barely entered the council to municipalities with relatively fewer barely elected young councilors.¹⁹

What if both candidates in such a race are close to 40 years old? This would attenuate the extent of the age treatment since those candidates likely share similar policy preferences. Figure 4 shows the distribution of age differences between candidates in races for the last seat. The age difference is at least 15 years in the majority of races. Thus, a substantial share of races takes place between candidates of substantially different ages.

[Figure 4 goes here]

The first-stage specification for our IV design is as follows:

$$\text{Young councilor share}_{i,t} = \alpha + \beta \text{Young victory share}_{i,t} + \lambda_i + \gamma_t + v_{i,t} \quad (2)$$

where $\text{Young councilor share}_{i,t}$ is the share of young councilors in municipality i in year t . $\text{Young victory share}_{i,t}$ is the share of young victories in races for the last seat a list obtains in municipality i in year t . λ_i and γ_t are municipality and year fixed effects. More young victories in races for the last seat result in a higher share of younger councilors. We show in Section 5.1 that the instrument is indeed strongly related to the young councilor share.

4.2.3 IV sample

Our IV design is based on races for parties' last seats where candidates below or equal to 40 years (young) contest against candidates above 40 years (old). Such races take place only in a subset of elections. In total, we use data from 697 council elections in 346 municipalities where such races take place at least once (recall that data on candidates' age is only available for a subset of municipalities and elections).

¹⁹This approach is similar to a fuzzy RDD in the spirit of Angrist and Lavy (1999). We follow Bhalotra, Clots-Figueras, Cassan, and Iyer (2014), Bhalotra and Clots-Figueras (2014), and Priyanka (2020) who use the outcome of close elections to instrument the share of legislators with specific characteristics.

The local councils in our IV sample are typically small. However, Regensburg with 50 council seats is also included.²⁰ Figure A.5 in the online appendix shows that municipalities in our IV sample are located all over Bavaria and are not geographically clustered.

4.2.4 Instrument validity

The second core assumption regarding the instrument is that it must affect the outcome only through the share of young councilors, i.e. it must be unrelated to the error term of the second stage. Young victories in races for the last seat per list are plausibly quasi-random. That is, the age of candidates who end up competing for the marginal seats of their party is plausibly unrelated to municipality-level spending patterns. Moreover, in open-list elections the number of seats obtained by a party and the identity of the winner of the last seat are unknown when the list is assembled. In line with this, we show in Appendix A.1, that the instrument is neither systematically related to lagged values of the outcome variables nor to municipality characteristics.

5 Results

5.1 Share of young councilors and local spending on major categories

The upper part of Table 2 collects the first-stage results. There is a strong and statistically significant relationship between the instrument and the young councilor share in all models. An increase in the share of young victories by 10 ppts increases the share of young councilors by 9.7 ppts. Given an average share of young councilors of 22.5%, this is a substantial effect.

[Table 2 goes here]

The lower part of the table collects the second-stage results. There is a significantly positive effect of the young councilor share on the share of social spending. An increase of 10 ppts

²⁰Munich, Nuremberg, and Augsburg, the three largest cities in Bavaria, are not in the IV sample. The main reason is the unavailability of information on councilors' age in these cities.

in the young councilor share – corresponding to roughly one standard deviation – is related to an increase in the share of social spending by almost 9%. At the mean share of social spending (8.1%), an increase in the share of young councilors by 10 ppts would result in an increase in social spending by 0.7 ppts.

In addition, we find a significantly positive effect of the young councilor share on school spending.²¹ An increase of 10 ppts in the share of young councilors results in an increase of spending on schools by 7.3%, which corresponds to an increase of 0.4 ppts (given that the share of school spending is on average 5.8%).^{22,23}

5.2 Share of young councilors and local spending on subcategories

The spending categories examined so far are broad categories of municipal spending. We next study the effect of young councilors on a more disaggregated level by examining subcategories of social spending and schools. Results are collected in Table 3. Among the many subcategories of social spending, the quantitatively most important category is the spending on child care, accounting for about half of all social spending (see Figure 3).

Model (1) relates the log of the share of spending on child care to the young councilor share. The coefficient is significant at the 5% level and slightly smaller than the coefficient of social spending. Model (2) relates the residual within social spending to the share of young

²¹Reduced-form estimates in Table A.5 show similar results, both for social spending and schooling.

²²The coefficient for *Other* is insignificant. Additional results for its subcategories are collected in Table A.6.

²³To assess the extent to which our IV design addresses endogeneity, we also estimate Equation (1) with OLS (see Table A.7). For social spending, we find that the IV and OLS results are qualitatively similar although the IV estimate is larger than the OLS estimate. In contrast to the positive and significant IV estimate for school spending, the OLS coefficient is small and insignificant. Hence, OLS appears to underestimate the effect of young councilors on social and school spending. One reason could be reverse causality: voters might vote for younger councilors if they perceive spending for child care and schools as too low. The OLS estimate for spending on culture is significantly positive and on health significantly negative. As in the case of social spending and spending on schools, the IV estimates are larger. However, the IV estimates are insignificant.

councilors. The coefficient is insignificant. Taken together, this is suggestive of the effect of young councilors on social spending being driven mainly by their preference for child care.

[Table 3 goes here]

We next examine subcategories for school spending which mainly derive from the three-tiered Bavarian school system. Model (3) explores the effect of the young councilor share on the share of spending for primary (*Grundschule*) and secondary modern schools (*Hauptschule*).²⁴ We focus on these two types of schools as they are present even in small municipalities, whereas other school forms tend to exist only in large municipalities.²⁵

Primary and secondary modern school spending accounts for 37% of school spending (see Figure 3). Again, we examine the residual category in Model (4). The coefficient for spending on primary and secondary modern schools is virtually identical in size and significance to the coefficient on schools in our baseline estimates. The coefficient for the residual category is a precisely estimated zero. Thus, the effect on the share of spending on schools is driven by spending for primary and secondary modern schools.

5.3 Robustness

5.3.1 Alternative age thresholds

In our baseline, we use only races where a candidate below or equal to 40 and a candidate above 40 compete for the last seat. We use 40 years as the threshold because it provides a reasonable trade-off between young age and a sufficiently large sample of young councilors. More specifically, according to Subfigure (b) of Figure 2 about 21.8% of councilors are 40 years or younger. In this robustness test, we study whether our results are robust to the choice

²⁴Primary school includes grades one to four and thus children between six and ten years. Secondary modern school covers grades five to nine and provides students with the necessary qualification to enter an apprenticeship. Both school types are typically located within the same compound.

²⁵We use the sum of spending for primary and secondary modern schools as disaggregated spending data for each of the two school forms is not available for all years covered by the sample.

of the age threshold. We rerun our baseline specifications while setting the young councilor threshold to each age between 30 and 50. The results are collected in Figure 5.

[Figure 5 goes here]

The three subfigures – for social spending, school spending, and child care spending – show a similar pattern. With an age threshold in the low 30s (i.e. far below our threshold of 40 years), the confidence intervals are largest as there are few candidates in general that are this young. With an age threshold of 35 up to 48 (for social spending), 40 (for school spending) and 46 (for child care spending) the estimates are robust and comparable to those of the baseline estimations. We conclude that our previous results are robust to the choice of the age threshold, especially for social spending and child care spending.

5.3.2 Closeness of mixed-age races

As discussed, it is plausible that our instrument is quasi-random for at least two reasons. First, it is ex-ante uncertain which seat will be the last seat of a party, and thus which rank will be above or below the threshold. Second, given that voters can cast personalized votes, it is also uncertain which candidates will compete for the marginal seat. Nonetheless, in this section we refine our identification by focusing on increasingly closer races for the last seat. While limiting the sample to close races reduces the number of observations, the outcome of a close race is particularly uncertain. Table 4 shows that the victory rate of the young candidate indeed converges towards 50% in increasingly closer races.

[Table 4 goes here]

Figure 6 shows coefficient plots for regressions where we relate the young councilor share to the share of social spending, school spending, and spending on child care while limiting the sample to municipalities with increasingly closer races. We start with a margin of victory of 20 ppts and gradually move to races with a margin of victory as small as 2 ppts.

[Figure 6 goes here]

For social and child care spending, the effect is significant for (almost) all levels of closeness.²⁶ The coefficient for school spending becomes insignificant the more we focus on close races, starting already at a relatively generous definition of closeness with 16 ppts.

5.3.3 Alternative scaling of outcomes

In our baseline estimations, we use the log of spending shares as outcome variables. In Table 5, we use instead either the raw share (without the log) or the inverse hyperbolic sine transformation of the three spending shares.

[Table 5 goes here]

The results for social and child care spending are robust in both alternative specifications. The coefficient on school spending is insignificant (t-statistic = 1.35), but as before positive.

5.3.4 Variation in candidates' rank change

Since candidates receive personalized votes, their initial and final rank will often differ. As discussed, due to such rank changes, the identity of the candidates in races for the last seat is unknown prior to the election. However, there are of course instances where candidates do not experience a rank change. In such races, one might suspect that the party leadership could have predicted who would be running for the last seat and drawn up their list accordingly.

To explore whether our results are sensitive to this issue, we use two different strategies. First, we exclude all races in which both candidates have a rank change of zero, i.e. races in which the identity of the candidates could have been more predictable. Second, we control directly for the average rank change of the two marginal candidates. Based on these two alternative approaches, we re-run our IV estimations and report the results in Figure 7.

[Figure 7 goes here]

²⁶Note that the closeness of races results in increasingly smaller samples. Thus, the confidence intervals for the estimates using 4 and 2 ppts as condition are substantially larger than for the other estimates.

For both approaches, the estimates for the effect of the young councilor share on the shares of spending are significant for all three spending categories.

6 Extensions

6.1 Child care staff and available spots

In the baseline specification, we use municipal spending shares as our main outcomes and find that child care spending increases in councils with many young councilors. We now examine whether and how higher spending on child care affects actual child care provision.²⁷ Results for non-fiscal outcomes are collected in Table 6.²⁸

[Table 6 goes here]

In Table 6, we relate the young councilor share to the log of the number of child care employees in Model (1). More staff is typically associated with more reliable and a higher quality of care. It is also the precondition for extending the opening hours of facilities. We find a significantly positive relationship between the share of young councilors and the number of employees.

Second, we examine the relationship between the share of young councilors and the log of the number of potential child care spots in Model (2) and find no significant effect. Also, Model (3) shows that child care is not expanded at the extensive margin, i.e. there is no significant effect on the number of child care facilities. Overall, there is some evidence that the increase in spending on child care is due to a higher number of child care employees, rather than an increase in spots or facilities. This suggests that young councilors promote the quality rather

²⁷We do not explore schooling since many decisions regarding schools, e.g. related to the staff, are made at the state-level and are thus not in the hands of municipalities.

²⁸While information on spending outcomes is available for all years in our sample, data on detailed aspects of child care is only available from 2006 to 2019.

than the quantity of child care. This might be the more relevant dimension for young councilors if their own children already have a spot in a local childcare facility.²⁹

6.2 General municipal finances

Is the increase in social spending, specifically on child care and schooling, accompanied by changes in overall municipal finances? To study this question, we examine the effect of the share of young councilors on municipal spending, revenues, tax revenues, and debt. All variables are in logs and per capita terms. Table 7 collects the results.

[Table 7 goes here]

The coefficients on all four variables are insignificant. A higher share of spending on child care and schools does not go hand in hand with more spending overall. Also, municipalities with younger councils neither collect more taxes nor increase their debt. Rather, the changes in municipal budget allocation appear to be due to a redeployment of existing resources. Further analysis in Table A.8 in the online appendix shows that expenditures are cut diffusely in other categories to finance the increase in child care and school spending.

7 Mechanisms and effect heterogeneity

In our baseline specifications, we find that a higher young councilor share increases the share of social spending, specifically on child care, and schools. In the following, we examine to what extent these effects are mediated by candidate, council, and municipality characteristics.

7.1 Other candidate characteristics as competing mechanisms

Personal characteristics other than age might matter for policy choices (Besley, 2005; Baskaran and Hessami, 2019). From the hand-collected data we have information on various councilor

²⁹Municipalities can also spend money on purchasing new equipment or furniture (or other qualitative improvements) for existing facilities. Unfortunately, there is no specific data available on this.

characteristics, such as gender, education, or list affiliation. Since our data is at the level of municipalities, we aggregate individual characteristics other than age to the level of municipalities by calculating the share of the respective characteristic among councilors.

Gender Bavarian councils are dominated by male councilors. In our IV sample, for councilors below or equal to the age of 40 this share is 16.7%, while for councilors above 40 the female share is 21.3%. To examine whether this disparity mediates our main effect, we include the share of female councilors, below or equal to 40, and in total (see Table A.9) as a covariate.

We find that the coefficient of the share of young councilors is hardly affected by controlling for the share of women in council overall. However, the effect on the share of spending on schools turns insignificant. In addition, the total share of women in the council is positively correlated with social and child care spending.³⁰

Education About 26% of councilors have a university degree. In our IV sample, for councilors below or equal to the age of 40 this share is 26.8%, while for councilors above 40 the share of councilors with a higher education degree is 24.4%.

We control for the share of young councilors with higher education and for the share of all councilors with higher education. Results are collected in Table A.10 and are similar to the baseline. Thus, the age effect is likely not confounded by councilors' education.

Ideology The political orientation of young councilors might also matter for their spending preferences.³¹ Young councilors running for left-wing parties might favor a higher share of

³⁰The share of females in councils is likely endogenous itself. Results are virtually unchanged when instrumenting the share of young females with the share of female young victories in races for the last seat. This is also the case for the results on education and list affiliation.

³¹While affiliation with a party is a useful proxy for political leanings, true political orientation and its interaction with spending preferences is unobserved. It is likely that young councilors have different spending preferences than the old candidates on their list, but agree on other issues with them.

social spending than their colleagues in more conservative parties. Descriptively, most young councilors are members of the conservative CSU as is the case for all councilors in general.

To examine this channel, we control for the share of young councilors that run for right-wing and left-wing parties, respectively.³² The results in Table A.11 are similar to the baseline and thus age-specific differences in party membership of councilors do not drive the age effect on fiscal policy observed in the main results.

7.2 Effect heterogeneity

7.2.1 Council characteristics

Council size Council characteristics may also influence the priority-setting of young councilors. One key dimension is the size of the council.³³ In small councils, individual preferences of councilors might matter more than party ideology. Also, smaller councils might encourage younger councilors to speak up and voice their opinion. Conversely, larger councils might provide a larger pool of councilors sharing similar policy preferences making it easier for young councilors to form alliances with fellow councilors. We interact the share of young councilors with the number of seats in the council.³⁴ Models (1)–(3) in Table A.12 collect the results. We find no significant interaction effect.

Mayor age The mayor of a municipality has agenda-setting power and can veto council decisions. If policy preferences are indeed related to personal characteristics such as age, young mayors should prioritize spending categories similar to young councilors. Thus, an increase in

³²We code CSU, Freie Wähler, BP, and AfD as right-wing. SPD, Grüne, Linke, and OEDP are coded as left-wing. Often councilors run for local lists rather than supra-regional parties. For those lists the political orientation is unclear.

³³Recall that councils are typically small and larger municipalities can have up to 80 seats (see Table A.1).

³⁴For the sake of exposition we describe the interaction effects as if they would take place within a basic OLS framework. In the IV context, we instrument the interaction of interest and the endogenous variable on the second stage by the interaction of our instrument (share of young victories) and the council size and the instrument itself on the first stage.

the share of young councilors may have a larger effect in municipalities governed by a young mayor, who could be the natural ally of young councilors. In our IV sample, only about 6.5% of mayors are below or equal to 40. We interact the young councilor share with a dummy that is 1 if the mayor is young at the time of election. The results for models (4)–(6) in Table A.12 show that there is no additional or amplifying effect of young mayors.

Fellow young councilors The effect of a young councilor might depend on the availability of other young councilors to form alliances. That is, the effect of young councilors might vary with the share of young councilors. We thus include the squared young councilor share to examine non-linearities in the effect of young councilors. Results are collected in columns (1)–(3) of Table A.13. The coefficient of the squared term is insignificant for the share of social spending, schools, and child care. Thus, there is no indication of a non-linear effect of young councilors on spending patterns.

7.2.2 Municipality characteristics

Number of children in municipalities In the baseline, we find that young councilors increase spending on child care and schools significantly. We thus examine the share of children living in the municipality, separately for the age groups below 6 and from 6 to 14 years. This proxies the demand for child care as well as schools in a municipality. We interact the share of young councilors with the share of children in the respective age groups relative to the total population. Results are collected in Table A.14. The coefficients of the interaction terms are insignificant for all three outcomes and both age groups.³⁵ Thus, the effect of young councilors on social spending, child care, and schooling is not a result of demography-related higher demand for those public goods in municipalities.

Pre-existing spending patterns The share of different spending categories at the beginning of the legislative period might matter for how urgent young councilors perceive the need to in-

³⁵There is also no additional effect when pooling the two age groups together.

crease the shares according to their preferences. We thus interact the share of young councilors with the share of spending for a given category in the year of election.³⁶ The effect of the share of young councilors appears not to depend on pre-election spending patterns, as coefficients of the interaction terms are insignificant in all specifications (Models (1)–(3) in Table A.15).

Age structure of the electorate Since candidates are elected by preferential voting and can thus be held accountable, young councilors may align their policy choices with the median voter of their municipality. Thus, young councilors may face an incentive to adjust their priority-setting in the council to electorate preferences, even at the expense of their own priorities in the likely case that this median voter is relatively old. We examine this by interacting the share of young councilors with the log of the share of inhabitants between 18 and 39 years of age. This corresponds to the population above voting age but below our threshold. If young councilors respond to the relative size of this group, we should expect a positive coefficient for the interaction term. In model (3) of Table A.16, we do find a significantly positive interaction term for child care spending. For social and school spending, the coefficient of the interaction term is insignificant. In models (4)–(6) in Table A.16, we repeat this exercise using the share of senior citizens (above 60). As one would expect, we find a negatively significant interaction term for social and child care spending. Overall, we conclude that young councilors do respond to the electorate’s age structure.

8 Conclusion

We use data from local elections in Bavaria to examine the causal effect of young councilors on municipal budget allocation and spending priorities. We instrument the share of young councilors with the share of quasi-random victories in races for the last seat per list. We find evidence that an increase in the share of councilors below or equal to 40 causes an increase

³⁶This is equivalent to the budget prepared in the last year of the previous legislative period. The election of the new councilors takes place in March of the election year.

in the share of social spending and schooling. In addition, we find that the increase in social spending is driven by an increase in the share of spending on child care – the largest subcategory of social spending.

We examine potential confoundedness and effect heterogeneity along various dimensions, including candidate, council, and municipality characteristics. These additional estimations show that the effect of councilors' age on fiscal policy is not confounded by gender, ideology or education levels. In addition, we find that the effect of young councilors on social spending depends on the age structure of the electorate in their municipality. If the electorate is older, young councilors have a smaller impact on social spending and child care.

While the existing literature on political selection has emphasized gender, ethnicity, or social class as important determinants of policy choices, our results show that age is an important dimension of political selection as well. Many countries have adopted measures to ensure a balanced representation of women or ethnic and social minorities in political bodies, notably quotas. The imbalance in age has received far less attention. Future research should study which policy measures can increase the representation of the young in politics.

In an era where key policy choices must be made that will have disproportional and sometimes irreversible effects across generations, the age distribution among policymakers is likely an important issue. Given that younger politicians, too, appear to pander to voters, increasing the share of young politicians itself may not be enough to tilt policies decisively in favor of the young. However, it may mitigate some of the inherent imbalance in policy choices induced by the overrepresentation of the elderly in the political class and the large share of old people among constituents.

Various policies may serve to improve political representation of the young. In some German states, the voting age has been lowered to 16 years for local elections. The new federal government coalition plans for 2022 to lower the voting age for federal elections to 16. An alternative approach that is frequently discussed would be to allow parents to vote on behalf of their children until they become adults (Braml and Fuest, 2019). All of these policies aim to increase representation of the young at the voting booth. Our findings show that the age-related

selection of politicians does matter for political outcomes, however. Thus, policies aiming at the representation among the electorate alone will likely not prevent a gerontocracy. Age quotas are one way to increase the share of young politicians in legislative bodies, but only few countries have such quotas so far (Stockemer and Sundström, 2018).

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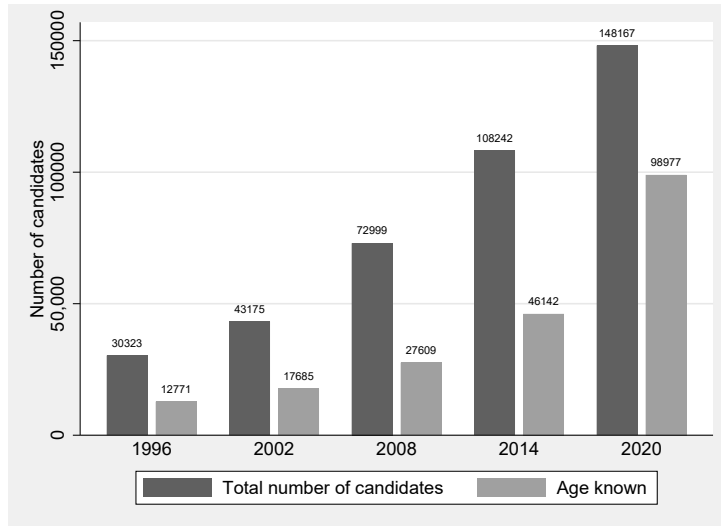
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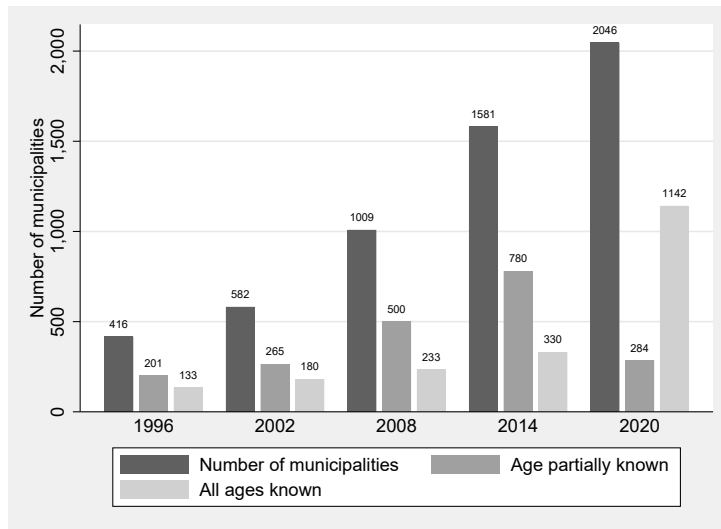
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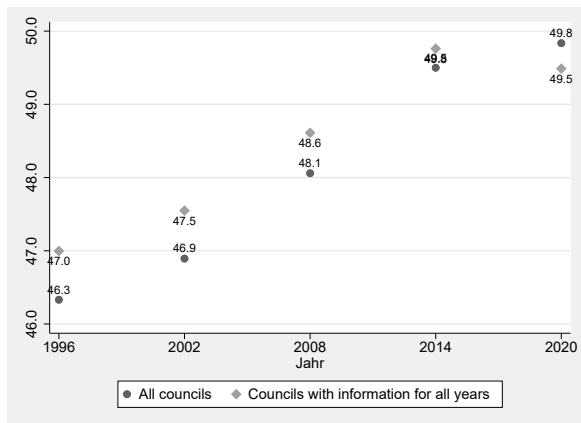


(a) Candidates

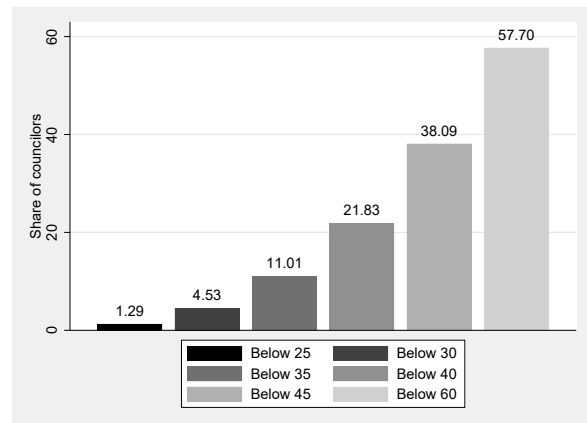


(b) Municipalities

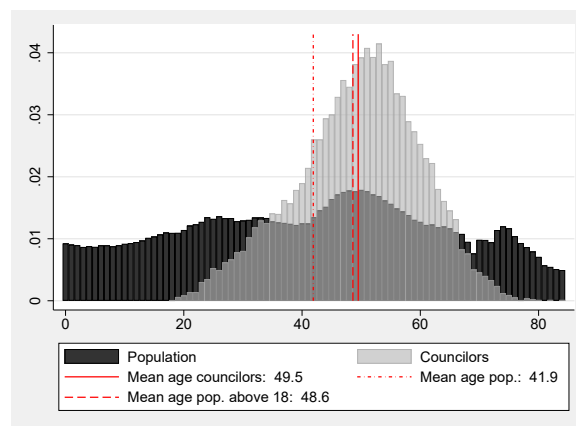
Figure 1: Data coverage on candidate age The bars indicate the coverage of candidate age for each election year. Subfigure (a) shows the number of candidates in our sample and the coverage for age among those candidates. Subfigure (b) shows for how many municipalities we have data on council elections. All ages known refers to municipalities for which we know the age of all candidates. Age partially known refers to municipalities where we know the age for at least one candidate.



(a) Average councilor age across elections

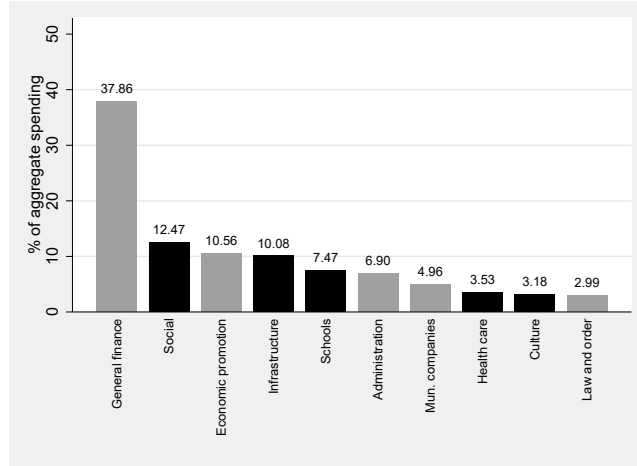


(b) Share of councilors below X years of age

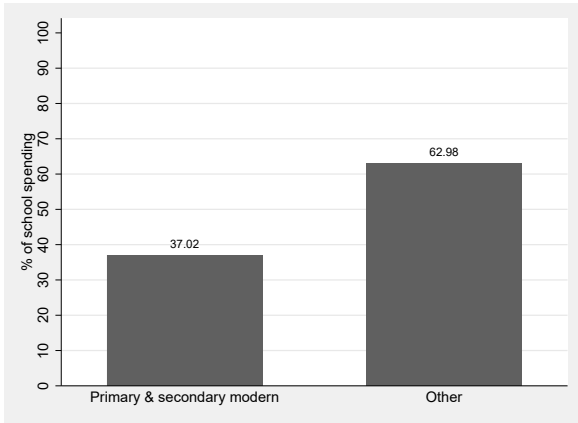


(c) Age structure of councilors vs. population

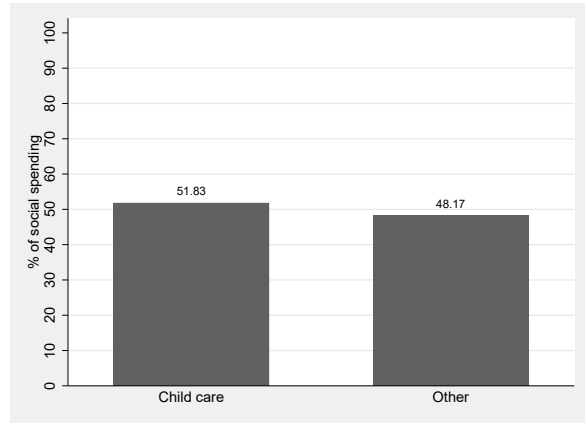
Figure 2: Descriptive statistics: councilor age and population age. Subfigure (a) shows the development of the average age in local councils across election years. The dots indicate the average age for all municipalities where we know the age of all councilors in a given year. The diamonds indicate the average age in local councils for the 74 municipalities for which we have full coverage on councilor age in all election years. Subfigure (b) shows the share of councilors below 25, 30, 35, 40, 45, and 50 years. Subfigure (c) shows the age distribution of the population across all Bavarian municipalities as of 2014 and the age distribution of all councilors for which age is available. The graph is truncated at age 85.



(a) Share of aggregate spending categories



(b) Share of subcategories of school spending



(c) Share of subcategories of social spending

Figure 3: Composition of municipal spending. This figure shows the average composition of spending for the municipalities in our sample in 2019. In subfigure (a), the share of various spending items relative to total spending is shown (in %). The categories in black are included in our regression analysis. The most important included items are social spending, infrastructure, and schools. In subfigure (b), we show the share of spending on primary and secondary schools relative to spending on all school types. Primary and secondary schools are common also in small municipalities. For social spending, we show in subfigure (c) the share of the largest subcategory – child care – relative to total social spending. We examine the five broad categories, as well as school and social spending in our empirical analysis.

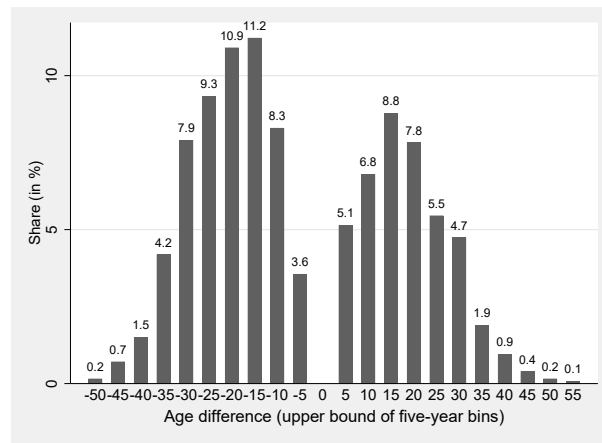
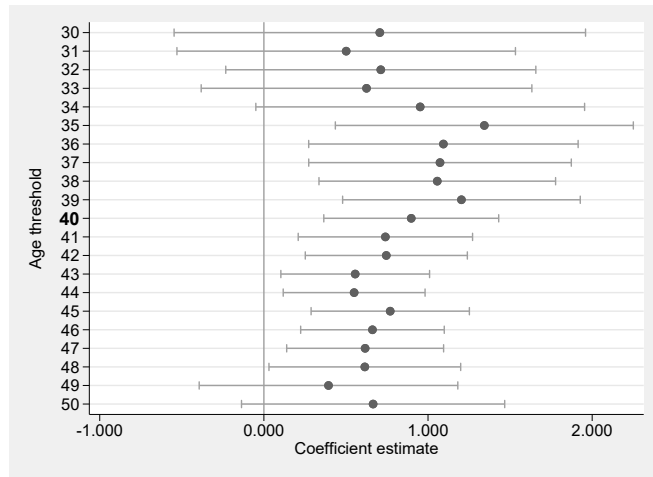
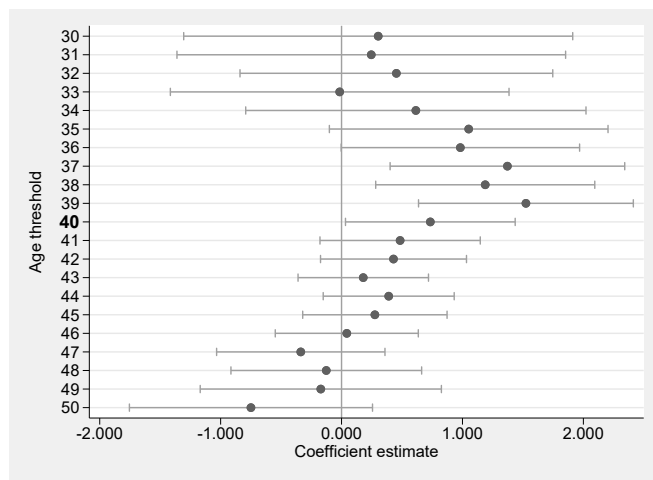


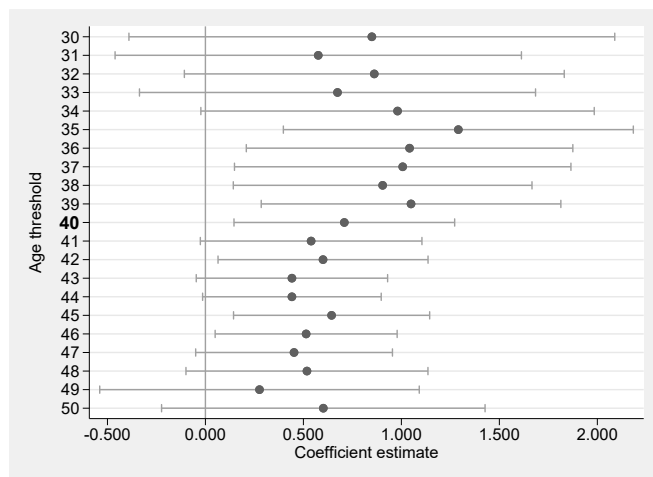
Figure 4: Age difference in races for last seat. This figure shows the distribution of age differences between old and young candidates in races for the last seat. Upper bounds of five-year bins are indicated in the graph (i.e. category 10 includes races with age differences for 6 to 10 years). The difference is positive for young winners and negative for old winners.



(a) Social spending

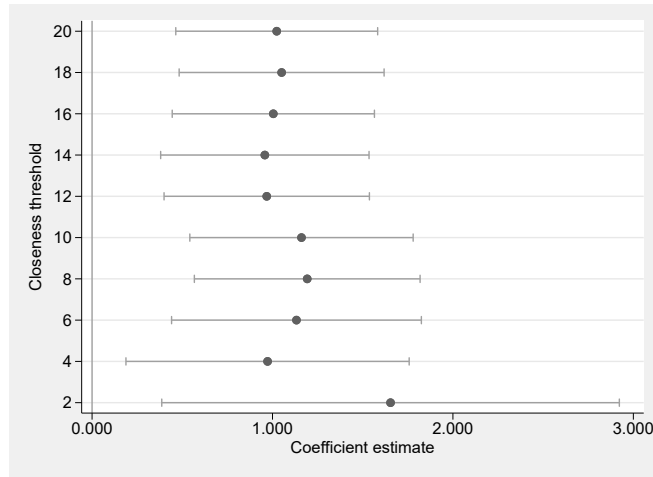


(b) Schools

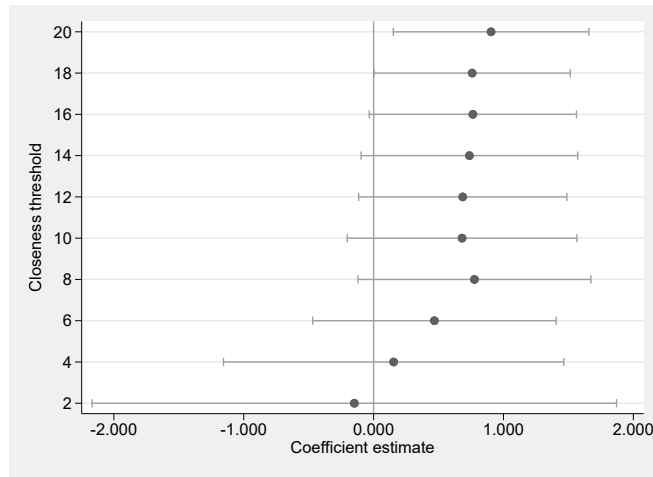


(c) Child care

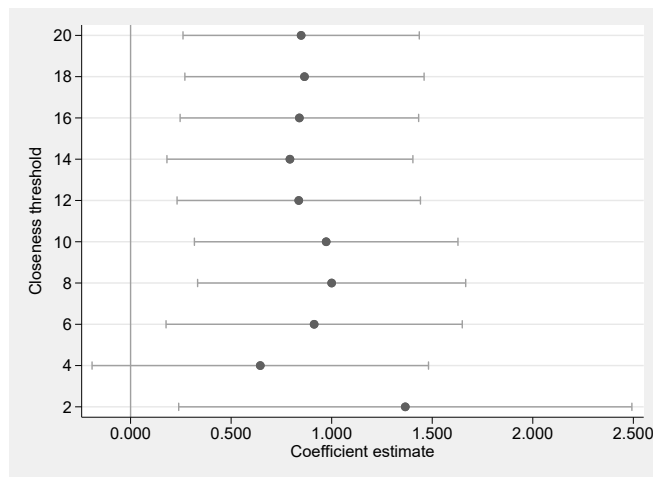
Figure 5: Robustness test – alternative age thresholds. This figure shows coefficient estimates for IV models that relate the share of young councilors to the indicated spending shares (following the specification in Equations 1 and 2). To explore whether the baseline results are an artifact of choosing 40 years as the threshold for a young councilor, we vary the threshold for young councilors in one-year steps between 30 and 50 years. 90% confidence intervals are indicated in the graph.



(a) Social spending



(b) Schools



(c) Child care

Figure 6: Robustness test – varying degrees of closeness in races for the last seat. This figure shows coefficient estimates for IV models that relate the share of young councilors to the indicated spending shares (following Equations (1) and (2)). We restrict the sample to councils with “close” races between the young and the old candidate and report separate results for margins of victory between 20 and 2 ppt. 90% confidence intervals are indicated in the graph.

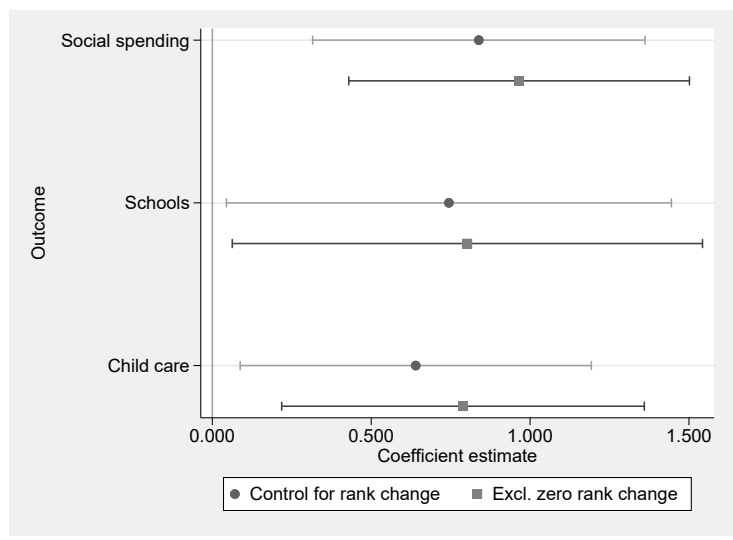


Figure 7: Robustness test – Randomness of marginal candidates. This figure shows coefficient estimates for IV models that relate the share of young councilors to the indicated spending shares (following Equations (1) and (2)). We exclude races where both candidates did not change their rank, i.e. when candidates' final rank could have been more predictable. In addition, we explicitly control for the average rank change of the two marginal candidates. 90% confidence intervals are indicated in the graph.

Table 1: DATA DESCRIPTION - VARIABLES ON MUNICIPAL FINANCES

Variable	Scale	Description	Availability	Source
Total spending	log/pc	Sum of all expenditures of a municipality	1996-2019	Bavarian Statistical Office
Total revenues	log/pc	Sum of all revenues of a municipality	1996-2019	Bavarian Statistical Office
Total tax revenues	log/pc	Sum of all tax revenues from business and property taxes	1996-2019	Bavarian Statistical Office
Debt	log/pc	Total debt accumulated by a municipality	1996-2019	Bavarian Statistical Office
Social spending	log of share	Social security administration, social security BSGH, asylum funding, social facilities, support for the youth youth facilities, child care, maternal care, and family support	1996-2019	Bavarian Statistical Office
Child care spending	log of share	Day care for children before and after school entry	1996-2019	Bavarian Statistical Office
Infrastructure spending	log of share	Construction administration, city planning, municipal roads, street cleaning, street lighting, parks, and rivers	1996-2019	Bavarian Statistical Office
School spending	log of share	Spending on all school types (i.e. local primary schools as well as secondary and vocational schools)	1996-2019	Bavarian Statistical Office
Culture spending	log of share	Culture administration, science, museums, exhibitions, zoos, theaters, community collages, environmental protection, historical sites, church related expenditure	1996-2019	Bavarian Statistical Office
Health care spending	log of share	Health administration, hospitals, sport funding, sport facilities, swimming pools, and parks	1996-2019	Bavarian Statistical Office

Table 2: IV RESULTS – YOUNG COUNCILORS AND MUNICIPAL SPENDING

First Stage: Young victories in the race for the last seat and share of young councilors						
	Dep. Var.: Share of young councilors					
	(1) Social	(2) Infrastructure	(3) Schools	(4) Culture	(5) Health	(6) Other
Share young victories	0.097*** (0.012)	0.097*** (0.012)	0.097*** (0.012)	0.097*** (0.012)	0.099*** (0.012)	0.097*** (0.012)
N	4182	4182	4182	4180	4139	4181
Second Stage: Instrumented share of young councilors and spending shares						
	(1) Social	(2) Infrastructure	(3) Schools	(4) Culture	(5) Health	(6) Other
Share young councilors	0.898*** (0.324)	-0.270 (0.385)	0.734* (0.427)	0.791 (0.570)	-0.506 (0.801)	-0.027 (0.092)
Mean (SD)	-2.71 (0.65)	-2.42 (0.59)	-3.00 (0.55)	-5.02 (1.16)	-4.45 (1.44)	-0.34 (0.14)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	62.13	62.13	62.13	62.06	63.91	62.20
N	4182	4182	4182	4180	4139	4181
Councils	697	697	697	697	695	697
Municipalities	346	346	346	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). We estimate separate models for social spending (model 1), spending on infrastructure (model 2), spending on schools (model 3), spending on culture (model 4), spending on health care (model 5), and residual spending, i.e. total spending minus spending on the first five categories (model 6). All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table 3: IV RESULTS – YOUNG COUNCILORS AND SOCIAL/SCHOOL SPENDING

	(1) Child care	(2) Other social spending	(3) Prim./Second. modern	(4) Other school spending
Share young councilors	0.709** (0.342)	0.938 (0.768)	0.741* (0.442)	-0.004 (0.436)
Mean (SD)	-2.82 (0.65)	-6.06 (1.55)	-3.20 (0.59)	-5.33 (1.02)
Municipality FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Kleibergen-Paap Wald F	62.18	62.12	62.03	62.13
N	4181	4165	4178	4182
Councils	697	697	697	697
Municipalities	346	345	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). We estimate separate models for child care spending (model 1), other social spending (model 2), spending on primary and secondary modern schools (model 3), and other school spending (model 4). All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table 4: SUMMARY STATISTICS – VICTORY RATE OF YOUNG CANDIDATE IN LAST-SEAT RACES, BY RACE CLOSENESS

Variable	Mean	SD	N
All races	0.43	0.49	9606
Races below 20 ppt victory margin	0.46	0.50	8274
Races below 18 ppt victory margin	0.46	0.50	8022
Races below 16 ppt victory margin	0.46	0.50	7740
Races below 14 ppt victory margin	0.46	0.50	7422
Races below 12 ppt victory margin	0.47	0.50	7050
Races below 10 ppt victory margin	0.47	0.50	6480
Races below 8 ppt victory margin	0.47	0.50	5874
Races below 6 ppt victory margin	0.48	0.50	4914
Races below 4 ppt victory margin	0.49	0.50	3762
Races below 2 ppt victory margin	0.51	0.50	2280

Notes: This table reports summary statistics on the share of races for the last seat between candidates above and below or equal to 40 years won by the younger candidate. We report victory rates for all races and races where the margin of victory was below 20 to 2 percentage points.

Table 5: ROBUSTNESS – YOUNG COUNCILORS AND MUNICIPAL SPENDING, ALTERNATIVE SCALING OF OUTCOMES

	Share (without log)			Inverse Hyperbolic Sine		
	(1) Social	(2) Schools	(3) Child care	(4) Social	(5) Schools	(6) Child care
Share young councilors	0.074*** (0.027)	0.047 (0.034)	0.070*** (0.027)	0.071*** (0.025)	0.046 (0.034)	0.709** (0.342)
Mean (SD)	0.08 (0.06)	0.06 (0.04)	0.07 (0.05)	0.08 (0.05)	0.06 (0.04)	-2.82 (0.65)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	62.13	62.13	62.13	62.13	62.13	62.18
N	4182	4182	4182	4182	4182	4181
Councils	697	697	697	697	697	697
Municipalities	346	346	346	346	346	346

Notes: This table collects results from IV regressions that relate spending shares to the share of young councilors (councilors ≤ 40 years). We estimate separate models for the plain share of social spending (model 1), the plain share of school spending (model 2), and the plain share of child care spending (model 3). In models (4) to (6) we repeat this exercise using the inverse hyperbolic sine transformation of the share of each spending item. All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table 6: EXTENSION – YOUNG COUNCILORS AND NON-FISCAL CHILD CARE OUTCOMES

	(1) Employees	(2) Spots	(3) Facilities
Share young councilors	0.454* (0.270)	-0.016 (0.189)	-0.348 (0.278)
Mean (SD)	3.10 (1.30)	7.03 (0.15)	2.88 (0.40)
Municipality FE	✓	✓	✓
Year FE	✓	✓	✓
Kleibergen-Paap Wald F	44.00	46.02	46.02
N	2887	2419	2419
Councils	584	571	571
Municipalities	343	337	337

Notes: This table collects results from IV regressions that relate non-fiscal aspects of child care provision to the share of young councilors (councilors ≤ 40 years). We estimate separate models for the log of child care employees (model 1), child care spots available (model 2), and number of facilities (model 3). All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table 7: EXTENSION - YOUNG COUNCILORS AND MUNICIPAL FINANCES

	(1) Total Spending	(2) Total Revenues	(3) Tax revenues	(4) Debt
Share young councilors	-0.267 (0.177)	-0.085 (0.157)	-0.041 (0.150)	-0.075 (0.824)
Mean (SD)	7.73 (0.39)	7.69 (0.39)	6.54 (0.47)	6.18 (1.08)
Municipality FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Kleibergen-Paap Wald F	62.13	62.13	62.13	58.11
N	4182	4182	4182	3938
Councils	697	697	697	676
Municipalities	346	346	346	334

Notes: This table collects results from IV regressions that relate broad fiscal outcomes of municipalities to the share of young councilors (councilors ≤ 40 years). We estimate separate models for log of total spending per capita (model 1), log of total revenues per capita (model 2), log of total tax revenues per capita (model 3), and log of debt per capita (model 4). All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Online appendix

A.1 Validity of the instrument

As stated above, the instrument must not affect the outcome via channels other than the instrumented variable. Specifically, the share of young victories must not be related to observed municipality characteristics. Most importantly, it should not be related to demographic characteristics. Panel A of Table A.4 shows that the instrument is associated neither with total population, nor with the population in any of the specified age groups or the area of municipalities. In addition, the instrument should not be correlated with pretreatment outcomes. That is, before the share of young victories in a given legislative period leads to an increase in the share of young councilors, outcomes should not be related to this variable. Would we nevertheless observe a correlation, this would be indicative of unobserved factors driving the results. Thus, we relate the share of young victories to outcomes lagged by six years, i.e. one legislative period.³⁷ Panel B of Table A.4 collects the results of this falsification exercise. There is no significant association of the instrument with the shares of different spending categories.

Our argument in favor of the instrument relies on the randomness of the victory of young candidates in races for the last seat. Young candidates must not be more or less likely to win close elections. Figure A.1 illustrates that while young candidates are somewhat more likely to lose races by a larger margin, near the threshold the distribution is more balanced.

Focusing on close races, young winners are not substantially more or less likely to win races. This is supported by a young candidate victory rate of 43% for all races (Table 4). Thus, the victories of young and old candidates are roughly balanced.

A further concern is that during the process of assembling the list, party leaders might influence initial list ranks of young candidates, such that they are less likely to enter the council. If younger candidates are placed on the list in a way that they less likely win races for the last seat in municipalities that, for instance, differ in their spending patterns, our estimates would be no longer causal. While the initial list rank is deterministic in closed-list elections,

³⁷That is, the share of young victories in the election of 2014 is related to the different outcomes in 2008.

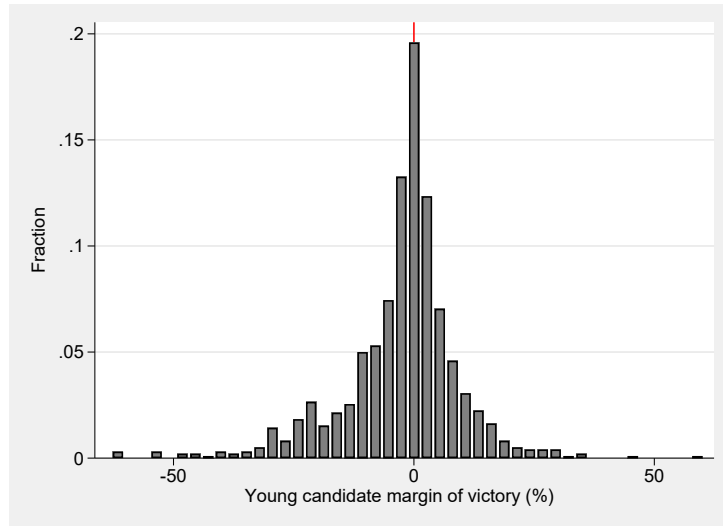


Figure A.1: Margin of victory. This histogram shows the distribution for the margin of victory defined as the difference in votes between the two candidates relative to the sum of votes received by both candidates. It captures the closeness of the races for the last seat. Young candidates are not substantially more likely to win the last seat of a list in the council.

in Bavaria an open-list system is used. Thus, the preferential vote of the electorate determines the final rank of a candidate, not strategic decisions of party leaders. Still, leaders might use their experience to assess the potential performance of candidates and place them on the list accordingly. Reassuringly, Figure A.4 in the online appendix shows that there is a substantial spread in the difference between initial and final ranks of all candidates in our IV sample. 45.6% of candidates see a change in their list rank of at least three ranks. The preferential vote does matter and assures the quasi-randomness of close elections.³⁸

A final concern is that the last candidate of a list entering the council might not be as influential as other councilors. Not only the councils themselves, also the number of seats a list obtains is typically small. Figure A.2 of the online appendix shows that almost half of the lists

³⁸Our IV sample is limited to a subset of municipalities due to the availability of councilor age and the existence of mixed-age races for the last party-specific seat. A natural concern that arises is the external validity of our results. Table A.17 compares the 346 municipalities of our baseline regression with the 1,710 municipalities that are not included. We examine whether municipalities differ in their population – total and by age group – and different municipal spending outcomes. Municipalities included in the IV sample are significantly smaller in terms of their area in square km. Most fiscal characteristics do not differ between the two groups. Three notable exceptions are lower debt, a lower share of spending on culture, and a lower share of spending on health care. By and large we argue that the sample we use for our analysis is comparable in observed municipality characteristics.

in our IV sample obtain fewer than four seats. It is conceivable that small fractions require the active participation of all their councilors to reach political goals. In addition, small fractions create an environment where speaking up and convincing fellow councilors is relatively easy. Thus, councilor effectiveness is likely not related to final list rank.

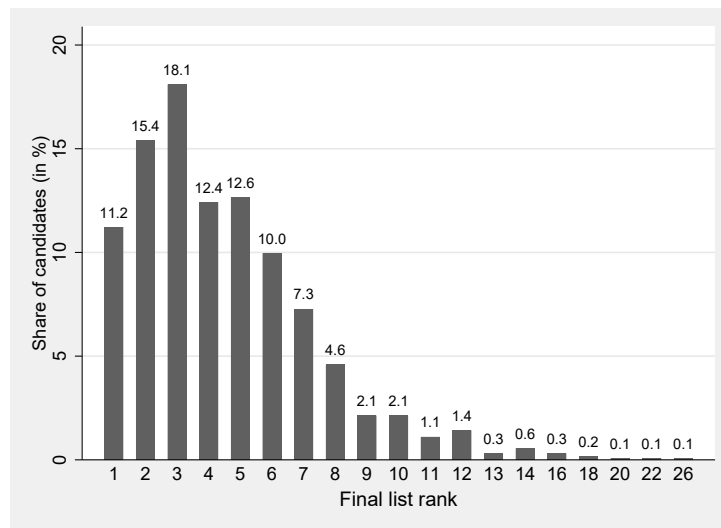


Figure A.2: Final rank of winners in last-seat races. This histogram shows the distribution for the share of winners in a race for the last seat across their final list ranks. The number of seats a list typically obtains is small: about 45% of winners have a final list rank lower than four. Thus, a candidate who enters the council by winning a race for the last seat is likely an ordinary member of the fraction.

A.2 Details on collection of council election data

The process of data collection is described in Baskaran and Hessami (2019). In line with this approach, the most recent election of March 2020 was added to the dataset. Our research assistants downloaded information on election results from the homepages of municipalities, typically in pdf format. Then, data was transferred into standardized Excel-sheets by hand. The Excel files were then merged into one dataset using municipal code and year. Since collecting the data by hand is error-prone, a number of plausibility checks were conducted to ensure data quality. Whenever mistakes were found they were corrected or set to missing.

A.3 Details on fuzzy matching of councilors

Data availability varies across election years and is most complete for the election in March 2020. To obtain additional information on birth year and occupation for previous years, candidates are identified using a fuzzy match approach.³⁹ In order to identify candidates, but at the same time avoid identifying different candidates who have the same name, both the full name and the list is used as input for the match. First and surname are combined together with list in one string and the string is stripped off all special characters.

To ensure that candidates are correctly matched, the names of lists and parties need to be harmonized, such that different abbreviations in different years do result in matches. For the known large parties this can be done automatically. For lists that exist only at the local level, this task has to be done manually: two research assistants went through all municipalities and compared list names. If two similar sounding list names appear in distinct years only, then the name is unified. Consider the example of Pliening, where in one year there is a list called “nf” and in another year there is a list called “Neues Forum”. While this to some extent relies on eyeballing, we believe that errors are scarce, since also the name needs to be similar and the list alone typically does not suffice for a (wrong) match.

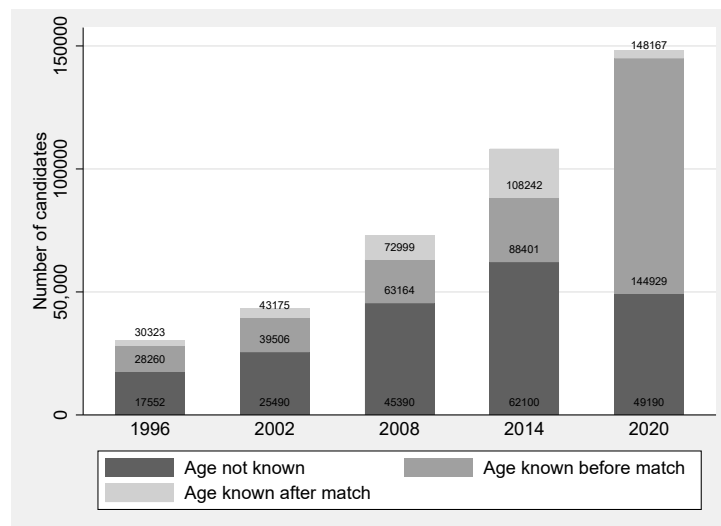


Figure A.3: Candidate age before and after the fuzzy match. The bars indicate the coverage of candidate age for each election year before and after the fuzzy match. Labels are cumulative, that is the number at the top indicates the total number of candidates.

³⁹In Stata the command *strgroup* by Julian Reif (University of Chicago) is used.

Matches occur within municipalities only. The tolerance of the fuzzy match ensures that spelling mistakes and minor deviations are not in the way of identifying candidates. This approach has limitations, however. It cannot identify candidates who moved to other municipalities or who changed lists between years. In addition, changes of names in case of marriage are also undetectable. Finally, one cannot fully exclude the possibility of candidates in the same municipality and on the same list having the exact same name. Nevertheless, we believe that these errors are unrelated to outcomes or the treatment and thus no source of concern.

Figure A.3 illustrates the age coverage for candidates before and after the fuzzy match. The coverage of the candidate age variable increases substantially by matching councilors across election years.

A.4 Additional figures

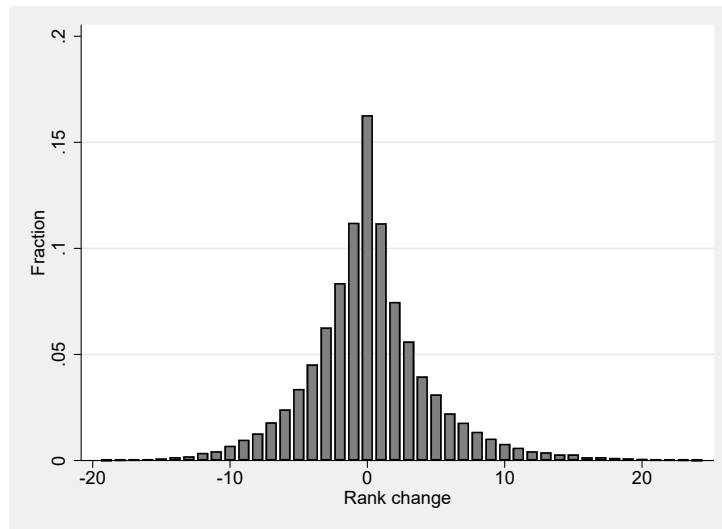


Figure A.4: Rank change of candidates. The histogram shows the distribution of the absolute rank change of candidates in the IV-sample. For the sake of exposition extreme changes are omitted.

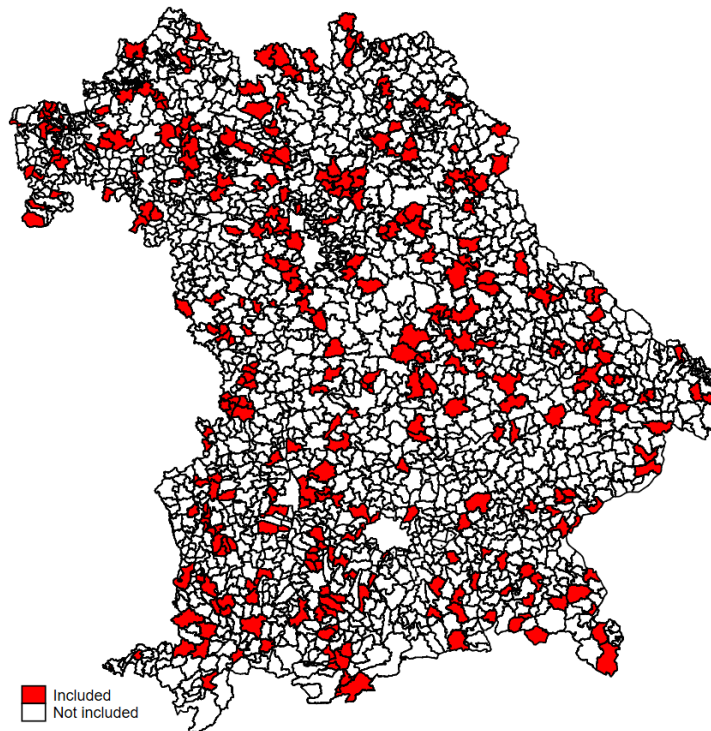


Figure A.5: Bavarian municipalities included in the IV sample. The map indicates the location of the 346 municipalities included in the sample.

A.5 Additional tables

Table A.1: DISTRIBUTION OF COUNCIL SIZES ACROSS BAVARIAN MUNICIPALITIES IN 2014

Council size	Municipalities	Cumulative share
8	129	6.27
12	593	35.12
14	370	53.11
16	405	72.81
20	333	89.01
24	159	96.74
30	33	98.35
40	17	99.17
44	9	99.61
50	5	99.85
60	1	99.90
70	1	99.95
80	1	100.00
Total	2056	

Notes: This table reports the distribution of the number of seats in local councils across Bavarian municipalities as of 2014. The first column states the number of seats per council. The second column indicates how many of the 2,056 Bavarian municipalities has that many council seats, respectively. The third column reports cumulative shares for council size.

Table A.2: SUMMARY STATISTICS ON CANDIDATE CHARACTERISTICS

Variable	Count	Mean	SD	Min	Max
Age	104207	45.76	11.82	18	93
Female	254739	0.25	0.44	0	1
CSU	254739	0.21	0.40	0	1
SPD	254739	0.16	0.36	0	1
FW	254739	0.07	0.26	0	1
Greens	254739	0.05	0.22	0	1
Higher Education	254739	0.13	0.34	0	1
Employed	167808	0.83	0.37	0	1
Self-employed	167808	0.07	0.26	0	1
Student	167808	0.03	0.16	0	1
Retired	167808	0.04	0.20	0	1
Housewife-/husband	167808	0.03	0.16	0	1

Notes: This table reports summary statistics on the characteristics of council candidates between 1996 and 2014. Higher education is coded as 1 if a candidate has a university degree or a PhD. The full candidate sample is used.

Table A.3: SUMMARY STATISTICS ON MUNICIPAL FINANCES

Variable	Count	Mean	SD	Min	Max
Total spending p.c.	4181	2459.82	1179.68	646.34	19864.98
Debt p.c.	4181	692.00	635.98	0.00	5323.03
Total revenues p.c.	4181	2362.68	1099.80	305.61	17740.74
Tax revenues p.c.	4181	779.73	475.34	78.11	7382.96
Share of social spending	4181	0.08	0.05	0.01	0.51
Share of infrastructure spending	4181	0.10	0.06	0.01	0.60
Share of school spending	4181	0.06	0.04	0.00	0.54
Share of culture spending	4179	0.01	0.02	0.00	0.48
Share of health care spending	4177	0.02	0.03	0.00	0.42
Share of other spending	4181	0.72	0.09	0.31	0.97
Share of child care spending	4181	0.07	0.05	0.00	0.50
Share of prim./sec. school spending	4180	0.05	0.04	0.00	0.54

Notes: This table reports summary statistics on fiscal variables at the municipality level. Only municipalities that are included in the IV-sample have been used to calculate these summary statistics.

Table A.4: VALIDITY – YOUNG VICTORIES, MUNICIPALITY CHARACTERISTICS, LAGGED OUTCOMES

Panel A: Share of young victories and municipality characteristics						
	(1) Population	(2) Pop. < 6	(3) Pop. 6 – 14	(4) Pop. 15 – 65	(5) Pop. ≥ 65	(6) Area
Share young victories	0.002 (0.005)	0.002 (0.014)	0.016 (0.012)	0.001 (0.005)	-0.001 (0.008)	-0.003 (0.004)
Mean (SD)	8.32 (1.01)	5.41 (1.03)	5.95 (0.99)	7.90 (1.01)	6.63 (1.07)	3.36 (0.74)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
N	5880	5880	5880	5880	5880	5880
Councils	980	980	980	980	980	980
Municipalities	556	556	556	556	556	556

Panel B: Share of young victories and lagged outcomes						
	(1) Social	(2) Infrastructure	(3) Schools	(4) Culture	(5) Health	(6) Other
Share young victories	-0.028 (0.039)	0.023 (0.045)	-0.017 (0.050)	0.080 (0.067)	-0.098 (0.071)	0.006 (0.010)
Mean (SD)	-2.89 (0.64)	-2.38 (0.58)	-2.93 (0.52)	-4.95 (1.15)	-4.35 (1.38)	-0.33 (0.14)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
N	3072	3072	3072	3071	3049	3071
Councils	512	512	512	512	511	512
Municipalities	297	297	297	297	297	297

Notes: This table collects results from regressions that relate municipality characteristics and spending shares to the share of young victories (i.e. our instrument). In Panel A, we estimate separate models for the log of population (model 1), log of population below 6 years (model 2), log of population between 6 and 14 (model 3), log of population between 15 and 65 (model 4), log of population above or equal 65 (model 5), and log of area (model 6). In Panel B, we estimate separate models for social spending (model 1), spending on infrastructure (model 2), spending on schools (model 3), spending on culture (model 4), spending on health care (model 5), and residual spending, i.e. total spending minus spending on the first five categories (model 6). Outcomes are lagged by six years. All regressions include municipality and year fixed effects. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.5: REDUCED FORM – YOUNG COUNCILORS AND MUNICIPAL SPENDING

	(1) Social	(2) Infrastructure	(3) Schools	(4) Culture	(5) Health	(6) Other
Share young victories	0.083*** (0.026)	-0.013 (0.032)	0.076** (0.035)	0.053 (0.044)	-0.061 (0.066)	-0.004 (0.007)
Mean (SD)	-2.65 (0.64)	-2.43 (0.59)	-3.02 (0.55)	-4.97 (1.17)	-4.42 (1.40)	-0.34 (0.14)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
N	5880	5878	5877	5874	5825	5879
Councils	980	980	980	980	978	980
Municipalities	556	556	556	556	556	556

Notes: This table collects results from reduced form regressions that relate the log of spending shares to the share of young victories (i.e. our instrument). We estimate separate models for social spending (model 1), spending on infrastructure (model 2), spending on schools (model 3), spending on culture (model 4), spending on health care (model 5), and residual spending, i.e. total spending minus spending on the first five categories (model 6). All regressions include municipality and year fixed effects. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.6: IV RESULTS – YOUNG COUNCILORS AND MUNICIPAL SPENDING, OTHER CATEGORIES

	(1) Admin.	(2) Econ. prom.	(3) Mun. firms	(4) Gen. finance	(5) Law and order	(6) Other
Share young councilors	0.354 (0.271)	-0.361 (0.424)	0.127 (0.721)	0.080 (0.178)	1.152** (0.503)	-0.027 (0.092)
Mean (SD)	-2.86 (0.57)	-2.30 (0.68)	-3.13 (1.17)	-0.85 (0.26)	-4.15 (0.77)	-0.34 (0.14)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	62.13	62.13	62.22	62.20	62.13	62.20
N	4181	4181	4173	4181	4182	4181
Councils	697	697	697	697	697	697
Municipalities	346	346	346	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). We estimate separate models for spending on administration (model 1), spending on the promotion of economic activities (model 2), spending on municipal firms (model 3), spending on general finance (model 4), and spending on law and order (model 5). Model 6 refers to the five categories combined as used in our baseline estimates. All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.7: OLS RESULTS – YOUNG COUNCILORS AND MUNICIPAL SPENDING

	(1) Social	(2) Infrastructure	(3) Schools	(4) Culture	(5) Health	(6) Other
Share young councilors	0.289** (0.135)	-0.376** (0.154)	0.010 (0.161)	0.383* (0.225)	0.028 (0.320)	0.048 (0.033)
Mean (SD)	-2.71 (0.65)	-2.42 (0.59)	-3.00 (0.55)	-5.02 (1.16)	-4.45 (1.44)	-0.34 (0.14)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
N	4182	4182	4182	4180	4139	4181
Councils	697	697	697	697	695	697
Municipalities	346	346	346	346	346	346

Notes: This table collects results from OLS regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). We estimate separate models for social spending (model 1), spending on infrastructure (model 2), spending on schools (model 3), spending on culture (model 4), spending on health care (model 5), and residual spending, i.e. total spending minus spending on the first five categories (model 6). All regressions include municipality and year fixed effects. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.8: EXTENSION – YOUNG COUNCILORS AND NOMINAL MUNICIPAL SPENDING (LOGS AND IN PER CAPITA TERMS)

	(1) Social	(2) Infrastructure	(3) Schools	(4) Culture	(5) Health	(6) Other
Share young councilors	0.631** (0.314)	-0.537 (0.437)	0.468 (0.396)	0.526 (0.563)	-0.816 (0.819)	-0.269 (0.207)
Mean (SD)	5.01 (0.80)	5.31 (0.65)	4.72 (0.56)	2.70 (1.23)	3.28 (1.48)	7.39 (0.41)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	62.13	62.13	62.13	62.06	63.91	62.20
N	4182	4182	4182	4180	4139	4181
Councils	697	697	697	697	695	697
Municipalities	346	346	346	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending per capita on different categories to the share of young councilors (councilors ≤ 40 years). We estimate separate models for social spending (model 1), spending on infrastructure (model 2), spending on schools (model 3), spending on culture (model 4), spending on health care (model 5), and residual spending, i.e. total spending minus spending on the first five categories (model 6). All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.9: EFFECT HETEROGENEITY – YOUNG COUNCILORS AND MUNICIPAL SPENDING, ROLE OF GENDER

	Share females among $\leq 40y$			Share females in council		
	(1) Social	(2) Schools	(3) Child care	(4) Social	(5) Schools	(6) Child care
Share young councilors	0.888** (0.353)	0.777* (0.471)	0.660* (0.373)	0.955*** (0.329)	0.696 (0.430)	0.767** (0.345)
Share female	0.045 (0.066)	-0.022 (0.087)	0.049 (0.067)	0.005** (0.002)	-0.003 (0.003)	0.005** (0.002)
Mean (SD)	-2.71 (0.65)	-3.00 (0.55)	-2.83 (0.66)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	55.18	55.18	55.22	62.59	62.59	62.64
N	4092	4092	4091	4182	4182	4181
Councils	682	682	682	697	697	697
Municipalities	343	343	343	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). In addition, we control for the share of females ≤ 40 years in council (models 1–3) and the share of females in the council overall (models 4–6). We estimate separate models for social spending (1 and 4), school spending (2 and 5), and child care spending (3 and 6). All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.10: EFFECT HETEROGENEITY – YOUNG COUNCILORS AND MUNICIPAL SPENDING, ROLE OF EDUCATION

	Share higher education among ≤ 40 y			Share higher education		
	(1) Social	(2) Schools	(3) Child care	(4) Social	(5) Schools	(6) Child care
Share young councilors	0.956*** (0.370)	0.777 (0.508)	0.721* (0.389)	0.963*** (0.334)	0.803* (0.443)	0.775** (0.352)
Share higher education	-0.069 (0.062)	-0.010 (0.098)	-0.059 (0.065)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)
Mean (SD)	-2.71 (0.65)	-3.00 (0.55)	-2.83 (0.66)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	51.63	51.63	51.73	60.92	60.92	61.01
N	4092	4092	4091	4182	4182	4181
Councils	682	682	682	697	697	697
Municipalities	343	343	343	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). In addition, we control for the share of councilors ≤ 40 years with higher education (models 1–3) and the share of councilors with higher education overall (models 4–6). Councilors with higher education need to have a university/FH degree or a PhD. We estimate separate models for social spending (1 and 4), school spending (2 and 5), and child care spending (3 and 6). All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%**), and 1%***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.11: EFFECT HETEROGENEITY – YOUNG COUNCILORS AND MUNICIPAL SPENDING, ROLE OF IDEOLOGY

	Share right-wing			Share left-wing		
	(1) Social	(2) Schools	(3) Child care	(4) Social	(5) Schools	(6) Child care
Share young councilors	0.872*** (0.315)	0.677 (0.416)	0.682** (0.335)	0.873*** (0.319)	0.555 (0.405)	0.656* (0.337)
Share right-wing	-0.037 (0.050)	-0.080 (0.074)	-0.037 (0.051)			
Share left-wing				0.031 (0.075)	0.226* (0.123)	0.067 (0.076)
Mean (SD)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	64.16	64.16	64.18	65.05	65.05	65.09
N	4182	4182	4181	4182	4182	4181
Councils	697	697	697	697	697	697
Municipalities	346	346	346	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). In addition, we control for the share of young councilors on a right-wing (models 1–3) and left-wing list (models 4–6). Right-wing lists include CSU, Freie Wähler, AfD, and BP. Left-wing lists include SPD, Gruene, Linke, OEDP, and FDP. We estimate separate models for social spending (1 and 4), school spending (2 and 5), and child care spending (3 and 6). All regressions include municipality and year fixed effects. To account for the endogeneity of the council's age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%**), and 1%***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.12: EFFECT HETEROGENEITY – YOUNG COUNCILORS AND MUNICIPAL SPENDING, ROLE OF COUNCIL SIZE AND MAYOR’S AGE

	Council size			Mayor \leq 40 years		
	(1) Social	(2) Schools	(3) Child care	(4) Social	(5) Schools	(6) Child care
Share young councilors	0.545 (0.972)	0.890 (1.083)	1.364 (0.989)	0.681* (0.350)	0.718* (0.428)	0.464 (0.379)
Council size	-0.029 (0.028)	0.052 (0.036)	-0.007 (0.027)			
Share young councilors \times Council size	0.022 (0.051)	-0.011 (0.063)	-0.039 (0.048)			
Young mayor				-0.814 (0.827)	-0.061 (0.622)	-0.920 (0.865)
Share young councilors \times Young mayor				3.248 (3.437)	-0.117 (2.621)	3.651 (3.587)
Mean (SD)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	19.07	19.07	19.12	0.67	0.67	0.67
N	4182	4182	4181	4182	4182	4181
Councils	697	697	697	697	697	697
Municipalities	346	346	346	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors \leq 40 years). In addition, we interact the treatment with the number of seats in council (models 1–3) and a dummy that is 1 if the mayor of the municipality is \leq 40 years (models 4–6). We estimate separate models for social spending (1 and 4), school spending (2 and 5), and child care spending (3 and 6). All regressions include municipality and year fixed effects. To account for the endogeneity of the council’s age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.13: EFFECT HETEROGENEITY – YOUNG COUNCILORS AND MUNICIPAL SPENDING, NON-LINEAR RELATIONSHIP

	(1) Social	(2) Schools	(3) Child care
Share young councilors	-2.327 (2.710)	-5.942 (4.124)	-1.839 (2.598)
Share young councilors ²	6.732 (5.782)	13.936 (8.867)	5.317 (5.581)
Mean (SD)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)
Municipality FE	✓	✓	✓
Year FE	✓	✓	✓
Kleibergen-Paap Wald F	3.63	3.63	3.63
N	4182	4182	4181
Councils	697	697	697
Municipalities	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors \leq 40 years). In addition, we control for the squared share of young councilors. We estimate separate models for social spending (model 1), school spending (model 2), and child care spending (model 3). All regressions include municipality and year fixed effects. To account for the endogeneity of the council’s age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.14: EFFECT HETEROGENEITY – YOUNG COUNCILORS AND MUNICIPAL SPENDING, ROLE OF CHILDREN’S SHARE IN MUNICIPALITY

	Share of children below 6			Share of children 6–14		
	(1) Social	(2) Schools	(3) Child care	(4) Social	(5) Schools	(6) Child care
Share young councilors	3.973 (4.678)	-1.806 (6.515)	4.811 (4.968)	-0.943 (4.821)	-6.781 (5.248)	2.195 (4.927)
Children < 6	0.142 (0.440)	0.317 (0.600)	0.146 (0.465)			
Share young councilors × Children < 6	1.065 (1.607)	-0.894 (2.282)	1.422 (1.711)			
Children 6–14				0.258 (0.504)	1.275** (0.535)	0.018 (0.522)
Share young councilors × Children 6–14				-0.790 (2.059)	-3.213 (2.291)	0.653 (2.103)
Mean (SD)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	10.43	10.43	10.42	23.30	23.30	22.71
N	4182	4182	4181	4182	4182	4181
Councils	697	697	697	697	697	697
Municipalities	346	346	346	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). In addition, we interact the treatment with the shares of the population < 6 years (models 1–3) and 6–14 years (models 4–6). We estimate separate models for social spending (1 and 4), school spending (2 and 5), and child care spending (3 and 6). All regressions include municipality and year fixed effects. To account for the endogeneity of the council’s age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.15: EFFECT HETEROGENEITY– YOUNG COUNCILORS AND MUNICIPAL SPENDING, ROLE OF FIRST YEAR

	(1) Social	(2) Schools	(3) Child care
Share young councilors	0.915 (1.691)	2.729 (2.229)	-0.033 (1.800)
First year	0.315** (0.147)	0.182 (0.181)	0.400*** (0.154)
Share young councilors × First year	0.142 (0.566)	0.692 (0.755)	-0.113 (0.580)
Mean (SD)	-2.71 (0.65)	-3.00 (0.55)	-2.82 (0.65)
Municipality FE	✓	✓	✓
Year FE	✓	✓	✓
Kleibergen-Paap Wald F	8.35	7.20	7.06
N	4182	4182	4181
Councils	697	697	697
Municipalities	346	346	346

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). In addition, we interact the treatment with the share of the respective spending category in the first year of the legislative period. We estimate separate models for social spending (model 1), school spending (model 2), and child care spending (model 3). All regressions include municipality and year fixed effects. To account for the endogeneity of the council’s age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.16: EFFECT HETEROGENEITY – YOUNG COUNCILORS AND MUNICIPAL SPENDING, ROLE OF VOTER’S AGE

	Young electorate			Old electorate		
	(1) Social	(2) Schools	(3) Child care	(4) Social	(5) Schools	(6) Child care
Share young councilors	0.690*	0.974	0.448	0.576	1.021*	0.313
	(0.379)	(0.598)	(0.422)	(0.390)	(0.615)	(0.437)
Share young electorate	0.273	0.812*	0.389			
	(0.323)	(0.415)	(0.316)			
Share young councilors × Share young electorate	5.877	-3.934	7.253*			
	(3.940)	(4.741)	(4.323)			
Share old electorate				0.088	-1.177***	-0.081
				(0.295)	(0.378)	(0.307)
Share young councilors × Share old electorate				-4.757*	2.329	-6.004**
				(2.461)	(3.438)	(2.638)
Mean (SD)	-2.60 (0.59)	-3.02 (0.54)	-2.71 (0.60)	-2.60 (0.59)	-3.02 (0.54)	-2.71 (0.60)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Kleibergen-Paap Wald F	12.42	12.42	12.42	13.35	13.35	13.35
N	3504	3504	3504	3504	3504	3504
Councils	584	584	584	584	584	584
Municipalities	343	343	343	343	343	343

Notes: This table collects results from IV regressions that relate the log of spending shares to the share of young councilors (councilors ≤ 40 years). In addition, we interact the treatment with the share of people between 18 and 39 in the electorate and people above 60 in the electorate. We estimate separate models for social spending (1 and 4), school spending (2 and 5), and child care spending (3 and 6). The shares are centered at their mean to provide meaningful interpretation of the base effect. All regressions include municipality and year fixed effects. To account for the endogeneity of the council’s age composition, we instrument the share of young councilors with the share of young candidates who win races for the last seat (against an old candidate) within a party. The row entitled Mean (SD) reports the mean and standard deviation of the dependent variable for each regression. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality.

Table A.17: EXTERNAL VALIDITY

Variable	Not in sample	In sample	Difference	Std. Errors	Obs.
Population	7039.27	5884.26	-1155.003	1929.285	2056
Pop < 6	394.42	336.88	-57.545	108.689	2056
Pop 6 – 14	645.91	534.05	-111.861	138.705	2056
Pop 15 – 65	4678.37	3937.20	-741.170	1342.399	2056
Pop ≥ 65	1320.56	1076.14	-244.427	340.840	2056
Area	36.27	32.44	-3.828**	1.501	2056
Total expenditures	7.71	7.71	0.006	0.015	2056
Total revenues	7.70	7.71	0.008	0.014	2056
Transfers	5.47	5.51	0.040	0.027	2056
Debt	6.24	6.11	-0.131**	0.067	2056
Culture	-4.81	-4.95	-0.140***	0.051	2056
Health	-4.20	-4.44	-0.243***	0.069	2056
Infrastructure	-2.30	-2.31	-0.007	0.020	2056
Schools	-2.95	-2.97	-0.021	0.022	2056
Social	-2.62	-2.63	-0.010	0.023	2056
Other	-0.33	-0.32	0.010**	0.005	2056

Notes: Characteristics of the municipalities in the IV sample are compared with the municipalities that are not included. Characteristics are averaged between 1996 and the last year available. Age is not included, since the availability of age in part determines whether candidates of the municipality are included in the sample. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***).