International Tax and Public Finance (2025) 32:1960–1987
https://doi.org/10.1007/s10797-025-09882-z

Public administrators as politicians in office

Zohal Hessami[1] · **Timo Häcker**[2] · **Maximilian Thomas**[3]

Accepted: 17 January 2025 / Published online: 30 January 2025

Abstract
We analyze whether mayors' prior occupation in the local public administration matters for their performance. In theory, mayors' professional background may shape their competence in bureaucratic tasks. We use the example of grant receipts for visible investment projects for which mayors must submit an extensive application to the state government. Our dataset includes 1,933 mayor elections (1993-2020) in the German state of Hesse to which we apply a sharp RD design for close mixed-background races. Mayors' background on average has no effect on grant receipts. Yet, public administrator mayors do attract more grants than outsider mayors when they are ideologically aligned with the council, raising the motivation to apply for grants in the first place. We conclude that the competence of public administrator mayors only matters when they are motivated to use it, i.e. this is an example where incentives are necessary for the effects of political selection to materialize.

Keywords Public administration · Professional background · Administrative skills · Political selection · Mayors · Investment grants

JEL Classification D73 · D78 · H71 · H77 · H83

1 Introduction

What does it take to be a successful mayor? A growing literature provides insights on the effect of various politician characteristics such as age, gender or education on policy outcomes (Alesina et al., 2018; Baskaran & Hessami, 2025; Besley et al., 2011). Yet, we know little about specific competences, skills or experiences that may help mayors do a good job in office. Many mayor duties involve bureaucratic

✉ Maximilian Thomas
maximilian.thomas@rub.de

[1] Ruhr University Bochum, CESifo Munich, IZA Bonn, Bochum, Germany

[2] LSE, civity Management Consultants, Hamburg, Germany

[3] Faculty of Social Science, Chair for Social Policy and Public Economics, Ruhr University Bochum, Universitätsstr. 150, 44801 Bochum, Germany

tasks and require tons of paperwork and coordination within the local public administration and its many subdivisions. Experience in the local public administration may thus indeed be helpful.[1]

In some countries, a background in public administration is a requirement for specific public offices. In the US, there exist two main forms of government: council-manager and mayor-council governments. In both systems, a city manager will be appointed for whom it is customary to hold a Master of Public Administration (MPA) degree,[2] In contrast, in most countries, e.g. in Germany, a degree or prior work experience in this field is not required for local public offices. Yet, descriptively, many mayor candidates (and elected mayors) happen to have a public administration background.[3] The question arises whether expertise in local public administration is relevant for policy choices and mayors' performance in office.

We analyze this question in the context of 421 municipalities in the German state of Hesse where mayors are elected every six years. Hessian mayors are directly elected but have relatively few powers/competences (i.e. Hesse applies a mixture between the US council-manager and mayor-council system). In Hesse (and other parts of Germany), although there is no educational requirement many mayors have a background in public administration – indicated by a *Diplom-Verwaltungswirt/in* degree obtained from a University of Applied Sciences – and are often employed in the local public administration before being elected into office.

In a regression discontinuity setting with close mayor elections between a candidate with a background in local public administration and a candidate with a non-administrative background, we analyze the effect of mayors' background on municipal outcomes. If these two types of candidates win the election, we refer to them as *public administrator mayors* or *outsider mayors*.[4] We focus on an outcome variable where mayors in Hesse have discretion and bear the sole responsibility. Most local policies in Hesse are set by local councils. However, investment grants from the state level are acquired through a tedious application procedure for which mayors have to put together an extensive application package (Hessami, 2018).

[1] A contrary argument could be made by saying e.g. that an outsider, i.e. a mayor that gets elected without this experience, may exert extra effort in these tasks to signal competence (Rogoff & Sibert, 1988; Rogoff, 1990).

[2] In the *council-manager system* voters elect the council, which is the primary legislative body of the city. The council in turn appoints a city manager who carries out the directives of the council. In some towns, the council may additionally have an elected mayor. However, in the council-manager form of government, the mayor has few or no powers above and beyond those of the other councilors. In the *mayor-council system*, there is also an elected council and an elected mayor, but the mayor typically is equipped with more powers. A mayor-council government will also appoint a city manager. Regarding evidence on effects of these systems on policymaking, see Coate and Knight (2011), Deno and Mehay (1987), Enikolopov (2014), Vlaicu and Whalley (2016).

[3] In our sample, this is the case for 50.7% of mayor candidates and 63.9% of elected mayors (see Table 1).

[4] 36.1% of Hessian mayors are outsiders with backgrounds in business/finance (10.9%), law (7.1%), teaching/social work (5.2%), military/police (5.0%), industry (3.6%), self-employment (2.8%), as shown in Table 1.

Our setting is ideal to study the effect of mayors' occupational background on their performance. First, Hessian mayors have relatively few powers and competences (compared to e.g. Southern German mayors). Thus, we can focus on a specific outcome (investment grants) rather than analyzing a large set of outcomes. Second, as Hessami (2018) finds, the switch from mayor appointments by local councils to direct mayor elections between 1993 and 1998 has boosted the diversity of mayors in terms of their educational/professional background.[5] This gives rise to a sufficiently large number of mayor candidates in our sample that do not have a background in public administration. Third, compared to other German states, mayor elections in Hesse do not take place at a uniform date.[6] Thus, if we do find any significant effects, these are unlikely to be driven by temporal patterns in investment grant allocation.

Our paper is primarily related to RD studies on the effect of local politicians' professional background on fiscal outcomes. Beach and Jones (2016) find that "managerial" skills of city council candidates (proxied by business experience) in California do not have a causal effect on various local outcomes (expenditures, revenues, unemployment, administration salaries, vote shares). Similarly, Kuliomina (2021) finds no effect of Czech local councilors' entrepreneurial background on municipal budget allocation, deficits or debt. Yet, Szakonyi (2021) shows that Russian mayors with a business background promote business-friendly policies by prioritizing economic infrastructure spending (e.g. building/maintaining roads). Likewise, Kirkland (2021) finds that US businessperson mayors allocate more resources to infrastructure projects. Overall, the results are mixed and appear to depend on the specific context.[7]

In contrast to our paper, the above literature focuses on the *business background* of local politicians. Since most tasks of mayors are, however, bureaucratic, it is natural to ask whether mayors' *public administration background* affects municipal outcomes. One exception in the literature is Bordignon et al. (2020) which applies a difference-in-differences design to an Italian reform in the 1990 s that granted some cities higher local fiscal autonomy. The authors show that more affluent regions

[5] Before 1993, the mayor was appointed by the council via a two-thirds majority vote. The council was able to remove the appointed mayor from office. Since the reform, the mayor is elected by the people.

[6] Sources of this variation are initial asynchronous dates for mayor appointments in 1946/1947 and 1970 s municipal mergers. In line with the Hessian municipal code (§42, HGO), the appointment/election of a mayor must take place three to six months before the incumbent steps down. A third reason is that some mayors do not serve a full term (death, illness, retirement). If a term ends prematurely, the appointment/election must take place within four months. Hence, further variation is due to the autonomy that municipalities have in choosing the date.

[7] Related literature studies the effect of mayors' education level (not field) on policy outcomes. Avellaneda (2009) finds that more educated mayors collect more property tax revenues and increase social spending in Columbia. Alpino et al. (2022) show that college-educated mayors in Italy are more likely to implement progressive tax reforms. In Germany, Freier and Thomasius (2015) find no effect of mayors' education on municipal finances. Earlier literature at the cross-country level shows that the level (Besley et al. (2011)) and field of education (Dreher et al., 2009) of political leaders affects economic development. Further, a large literature studies politician gender (see Baskaran and Hessami (2025) for a recent study and Hessami and da Fonseca (2020) for a literature review) and more recently politician age (Alesina et al., 2018; Baskaran et al., 2024).

attract administrative experts, while poorer regions elect mayors with strong political skills. Thus, administrative skills are likely relevant for *becoming* a mayor in certain contexts. Do administrative skills/experience also matter for *being* a successful mayor?

A second related strand of literature studies the role of politicians versus bureaucrats in policymaking. Bureaucrats are guided by career concerns, i.e. they strive to move up the career ladder within the local administration, often holding positions where they have high job security and enjoy indeterminate appointments (see e.g. Vlaicu and Whalley (2016)). The question of how to allocate different types of tasks across bureaucrats and politicians has been discussed in previous literature and may depend on available information and characteristics of these tasks (Alesina & Tabellini, 2007). In our context, a bureaucratic task with relatively visible (positive) welfare effects is assigned to an elected mayor. In some sense, a public administrator mayor was a bureaucrat before and then became a politician, whereas an outsider mayor is a pure politician in line with the definitions above. We, therefore, argue that the main difference between public administrator and outsider mayors is their competence in bureaucratic tasks, which may lead to different levels of success in acquiring investment grants.

We make four substantive contributions to the literature. First, our unique dataset – combining official municipal election and fiscal data with hand-collected individual information on top-two mayor candidates in Hesse – and our RD design allow for a credible identification of the causal effect of mayors' occupational background. Second, we employ a new outcome variable to analyze fiscal policy choices. Whereas most studies concentrate on spending or taxes, we focus on investment grant receipts. Mayors in Hesse are in charge of investment grant applications and these grants finance projects that are visible to voters. Third, our hand-collected dataset allows us to determine mayors' background with e.g. the tertiary degree *Diplom-Verwaltungswirt/in* specifically dedicated to public administration. Our paper is the first to evaluate the relevance of mayors' background in public administration for municipal outcomes. Fourth, we also investigate how the effect on investment grant receipts varies with the political environment (e.g. unified/divided local government, political alignment with state government). Since some previous RD studies do not find significant effects of mayors' characteristics, the specific political setting and resulting incentives likely matter.

We find that mayors' public administration background has no causal effect on investment grants receipts. A number of robustness tests confirm this null result. First, we show that the results are not sensitive to the scaling of the outcome. Second, the inclusion of controls does not affect the results, confirming the successful randomization in our RD design. Third, beyond the data-driven optimal bandwidths that we use in our main estimations, we also obtain a null result using various bandwidths between 5 and 15%. Finally, we conduct power calculations indicating that our study is sufficiently powered to detect moderate to large effect sizes.

In two extensions, we analyze heterogeneity in the treatment effect according to the ideological composition of councils and alignment of the mayor's party with the state government. First, our results suggest that political alignment with the state government plays no role, confirming that the state government and its ministries

have little discretion in rejecting/approving applications for investment grants based on political preferences. As described in Hessami (2018), applications are typically successful if there is money left in a specific year and if the application is complete and documents compliance with the funding guidelines.

Second, we find that public administrator mayors receive more grants when they belong to the ideological camp that has the council majority (i.e. unified local governments). Public administrator mayors attract more than twice as many investment grants than outsider mayors when they have the support of the council majority. This corresponds to 38 Euros per capita more per year for a median-sized Hessian municipality with about 10,000 inhabitants and can therefore be considered as a substantial effect. While this effect is not based on explicit randomization of horizontal alignment and should thus be interpreted with caution, we can show that horizontal alignment is not systematically correlated with various municipality characteristics.

We conclude that the competence of public administrator mayors appears to only make a difference for their performance when they are sufficiently (politically) motivated to use it. As investment transfers are highly visible to voters and at the same time it is difficult for voters to correctly attribute outcomes to political bodies, one interpretation is that public administrator mayors have a greater incentive to attract additional funds if they are supported by the council. Any electoral benefit in the next election will accrue to both the mayor and will spill over to his/her politically aligned council.[8] Outsider mayors, on the other hand, have less competence/experience in dealing with bureaucratic application procedures and thus, even if the council is aligned, it does not matter for their effort/success in attracting grants.

To test for mechanisms, we run additional estimations. Given diverse historical trajectories, mayor elections may take place at any point in time throughout council terms. Council terms, on the other hand, are synchronized across all Hessian municipalities. This allows us to test whether mayors are motivated to attract additional funds to ensure the reelection of ideologically aligned councils.[9,10] Our results show

[8] An additional explanation could be that public administrator mayors are more motivated to apply for investment grants when the council is politically aligned because it is easier to agree on projects of interest and because these grants are matching grants and for every approved grant the council needs to provide additional financing. Given our data, we are unfortunately not able to test this explanation.

[9] We also test for political cycles in grant receipts across mayor terms. For mayors politically aligned with councils, we do not observe higher grant receipts before mayor elections (see Table A.10 in the online appendix). Thus, mayors in our sample are not so concerned about their own reelection, which is not surprising given that the reelection rate of recontesting incumbent mayors is 87.3% and 78.9% for public administrator and outsider mayors, respectively. In contrast, Hessami (2018) finds that elected mayors (compared to appointed mayors) in Hesse attract more investment grants when a mayor election is imminent. The main difference is that she applies a DiD approach including all mayor elections and focuses on the difference between the two types of selection for mayors, while we rely on a much smaller RD sample and compare public administrator with outsider mayors.

[10] A referee pointed out that the higher electoral success of public administrator mayors may positively correlate with council alignment, creating endogeneity. For this to be the case, public administrator mayors would need to be more often affiliated with one of the major parties likely to hold council majorities. In our complete dataset, public administrator mayors (outsider mayors) are affiliated with one of the major parties in 62.4% (61.1%) of the cases (difference not statistically significant, p-value 0.57), while they run as independent candidates in 33.9% (31.5%) of the elections. The remaining share (<5%) are

that indeed in the subsample of unified governments public administrator mayors attract more grants when a council election is imminent. In a second set of estimations, we also show that these grant receipts are positively correlated with the reelection likelihood of existing council majorities.

Our findings have important implications for our understanding of the role of politicians' characteristics for their motivation and performance in office. While on average it appears that a background in local administration is irrelevant, there are circumstances that give rise to differences in the extent to which mayors make an effort and successfully attract investment grants. Even though we only look at one specific outcome, most of the duties of mayors in Hesse (or elsewhere) involve bureaucratic tasks. Hence, prior experience with local administration may indeed be helpful for doing a good job in office. Since descriptively the share of public administrator candidates and mayors is already high (69.3% of elected mayors have a public administration background), it does, however, not follow that a compulsory requirement for a public administration background is needed. Voters appear to be aware of this advantage and seem to take this into account in their voting decision.

As a more general contribution to the literature, our results highlight that competence and experience in bureaucratic tasks (or broadly speaking political selection, i.e. politicians' characteristics) only matter for politicians' performance and municipal outcomes when politicians are sufficiently (politically) motivated to use them. Thus, our results can be seen as an example where political selection and (indirect) electoral incentives interact, while the existing literature typically studies these concepts in isolation.

Finally, we illustrate that politicians' incentives may go beyond their own reelection motive. In a setting where some degree of collaboration between two (or more) political bodies is helpful to be successful, politicians (who in any case enjoy a high incumbency bonus) may be motivated to create cycles in their performance that create positive spillovers for ideologically aligned political bodies. While previous literature argues, that these types of spillovers may exist within one office and within one party, we show that they also exist across offices and potentially across parties (but within an ideological camp in the left/right sense).[11]

Footnote 10 (continued)
minor parties not consistently aligning with either of the major parties. Thus, the proposed mechanism likely does not threaten our identification.

[11] For instance, Fowler and Hall (2014) and Lopes da Fonseca (2017) distinguish between personal and partisan incumbency advantages in the context of US state legislature and Portuguese mayor elections. Both find that partisan incumbency advantages (i.e. spillovers to candidates other than the incumbent) are not empirically relevant. Note, however, that in these settings incumbency advantages are much smaller than in our context.

2 Background

2.1 Municipal finances

Located in the center of Germany, Hesse represents the German average in terms of size and prosperity. In 2019, the population size was 6.3 million equalling 7.5% of the German population. Hesse consists of 421 regular municipalities, out of which 416 are organized into 21 counties, and five large cities which hold a special status.[12]

Local administrations substantially impact citizens' daily lives. Municipalities provide a wide range of mandatory and voluntary public goods. Compulsory public goods include municipal childcare, primary schools, and civil protection. Voluntary provision includes swimming pools and sports venues, cultural and historical sites, theaters or public libraries. The provision of public goods at the municipal level is financed through a combination of municipal taxes, user fees, and transfers from higher levels of government.

State-level transfers make up a large share of municipal revenues. Yet, municipalities are also granted considerable fiscal autonomy to generate own tax revenues by setting local business and local property tax rates or introducing new taxes (e.g. secondary home tax, tourist tax, dog tax). In 2019, Hessian municipalities in total had 52.2 billion Euros at their disposal.

2.2 State-level investment grants

The Hessian state government provides municipalities with several types of rule-based and discretionary grants. In this paper, we focus on investment transfers *(Zuweisungen und Zuschüsse für Investitionen und Investitionsförderungsmassnahmen)* intended for specific projects, such as the construction/modernization of local infrastructure (e.g., hospitals, childcare facilities, municipal elderly care facilities, public transportation, road construction, municipal drinking water systems, libraries, museums, and sport facilities). In 2019, the Hessian state government allocated 301.4 million Euros in total as investment grants.

Investment grants are allocated annually via a formal application procedure *(Antrags- und Bewilligungsverfahren)*. In the second half of the previous year, the state government publishes calls for proposals via the state government gazette *(Staatsanzeiger)*, detailing program objectives, eligible projects, and required documentation. To receive funding, mayors must submit complete applications. Grants are awarded if eligibility requirements are met and funds are available, with decisions made by the responsible ministry within weeks. Though earlier applications are more likely to be successful, unfunded but eligible applications can be carried forward to the next year. Municipalities may receive grants for several projects per year.[13]

[12] These five cities (*Darmstadt, Frankfurt, Kassel, Offenbach, Wiesbaden*) fulfill both municipal and county responsibilities are therefore excluded from our analysis.

[13] For more details on the grant application procedure, please refer to Hessami (2018).

Mayors are responsible for the preparation and submission of grant applications and can increase the likelihood that their municipality receives an investment grant (Hessami, 2018). First, mayors can stay informed about new funding opportunities by regularly checking the calls for grants. Second, preparing and submitting an application (or several ones) in the first place is necessary for obtaining any grant. Third, mayors can impact the likelihood of grant receipt by ensuring that the application is complete and meets all funding guidelines.[14]

While investment grants on average only account for 19.4% of total transfers, individual payments to municipalities can be substantial. For example, in 2019, the highest amount granted to a municipality was 435 Euros per capita. For a municipality with 10,000 inhabitants, this amounts to 4.35 million Euros. Despite being project-specific, these grants clearly enhance the financial possibilities of a receiving municipality.

2.3 Mayors and local politics

There are two political institutions at the local level: the mayor and the council. Voters elect a municipal council at a uniform state-wide date every five years in March. Council size depends on municipal population size and varies which between 15 and 105 seats. The municipal code of Hesse *(Hessische Gemeindeordnung)* stipulates that the local council monitors the local administration and decides autonomously on all policy areas assigned by the federal and state constitutions to the municipal tier. Council seats are allocated to parties via a proportional rule.

The party landscape in Hessian local council and mayor elections is dominated by the centre-right Christian Democratic Union (CDU) and the centre-left Social Democrats (SPD). Several smaller parties also compete in local council elections, including the Greens (environmental, socially liberal), the FDP (fiscally conservative, socially liberal), and the Left Party (socialists). Also, several far-right/-left parties, independent candidates and candidates backed by local voter initiatives contest in local elections. Multiple voter initiatives may run in a single municipality and tend to be successful, in rare cases securing seat majorities. Typically, multiple parties win seats, requiring coalitions to secure majorities. Even absent formalized coalitions, parties must cooperate to reach council decisions (Baskaran & Hessami, 2018).

Councilors hold significant political power, while the mayor remains an important political figure. Since 1993, mayors in Hesse are directly elected for a six-year term.[15] A state-wide election date does not exist. Instead, a mayor election is held

[14] Note that the allocation of these grants does not include a built-in equalization scheme across municipalities.

[15] A reviewer has pointed out that the transition phase (1993-1997) from appointments to direct elections of mayors falls within the observation period. However, our close-election RD design ensures that we exclusively compare municipalities governed by directly elected mayors. It might in principle be that during the transition phase directly elected administrative mayors perceived heightened competition with neighboring municipalities led by appointed mayors, potentially increasing their reelection incentives and influencing their decision to apply for investment grants. To address this concern, we conduct an

when the incumbent steps down because her term ends, because she wants to pursue other activities, because she reaches the pension age, or because of unforeseen events such as death/illness (Baskaran & Hessami, 2018). Typically, candidates are supported by one of the mainstream parties. Roughly 1/3 of mayors in Hesse are independent or supported by one of the small local voter associations.

Mayor elections are held by majority vote, where each voter has one vote per round. The candidate who receives more than 50% of the valid votes is elected. If the required majority is not reached in the first round, a run-off election is held between the first- and second-placed candidate. The mayor is appointed for a term of six years as a full-time official, assisted by two additional officials who serve in an honorary capacity (*Erste und Zweite Beigeordnete*).[16] Generally, incumbent mayors in Hesse are very likely to be reelected if they decide to recontest.[17]

3 Data

3.1 Data collection and coverage

Our dataset encompasses all direct mayor elections in Hesse between 1993 and 2020.[18] The Statistical Office of Hesse provides information on the name, gender, party, and number of valid votes per candidate. The official data, however, does not include information on candidates' educational or professional background. We therefore hand-collect this information from various internet sources including municipality/party/candidate websites as well as social media profiles (e.g. Facebook, LinkedIn) and local newspaper articles. For further details on our data collection, see Section A.1 in the online appendix.

Figure 1 illustrates our sample coverage in terms of mayor background and the number of mayor elections over time. Our hand-collected information on candidates' professional background covers 89% of all first- and second-ranked candidates. While we were successful in gathering information for most candidates, some information is missing. Since it is more difficult to find information on candidates further back in time, the coverage declines the further we go into the past. Subfigure (a) also illustrates that the share of candidates with an outsider background has

Footnote 15 (continued)
additional robustness check by restricting the sample period to 1998-2019, i.e. excluding the transition phase. The results are unchanged (available upon request).

[16] In municipalities with less than 5,000 inhabitants, the mayor position may be on an honorary basis. A request for a change must be approved by a 2/3 majority of municipal representatives (§44 HGO). In January 1, 2017, Bromskirchen became the first (and up to now the only) Hessian municipality to make use of this exception.

[17] In 23.2% of elections in our sample, there were no challengers and only the incumbent stood for election.

[18] Our dataset builds on Baskaran and Hessami (2018) and Hessami (2018). First, we extended the dataset on mayor elections for 2016 to 2020. Then, we added information on the characteristics of first- and second-placed candidates in mayor elections. Data on first-placed candidates until 2010 is taken from Hessami (2018).

increased over time. Subfigure (b) illustrates that a considerable number of mayor elections take place every year (about 45–90 per year), while the council elections take place every five years at a statewide uniform date. This variation in the timing of elections is an advantage of our dataset which we exploit later in the paper.

To estimate the effect of mayors' public administration background on investment grant receipts, we focus on elections in which a candidate with a background in public administration competed against a candidate with a non-administrative background ("mixed-background elections"). We define candidates with a public administration background as those having completed vocational training in the administration, holding a degree in public administration (*Diplom-Verwaltungswirt*) or having worked in the local public administration.[19]

The key variable for our analysis is the margin of victory of the public administrator candidate in a mayor election. Consider the following case: in the mayor election in Groß-Umstadt in 2005, a candidate with a business background competed against a candidate with a public administration background. The business candidate won with 53.5% of the votes (vs. 46.5% for the administrator candidate). Thus, for this observation the margin of victory is −3.5% for 2005–2010 in which grant receipts are attributed to the newly elected mayor.

As Table A.1 shows, altogether 1,933 mayor elections were held in the 1993–2020 period in Hesse. We exclude all elections with only one candidate and all elections in which an incumbent runs for reelection.[20] Due to our mixed-background RD design, we also limit our analysis to mayor elections where among the top-two candidates one has a background in public administration and the other does not.[21] This results in 372 mixed-background races of which 97 were decided with a margin of victory $\leq 10\%$. Victories of public administrator and outsider candidates are relatively balanced within this margin: 46 vs. 51.

We then merge the electoral dataset with administrative data on municipal finances from the Hessian State Statistical Office. This dataset includes information on the amount of investment transfers per municipality and year. In addition, the data includes information on municipal expenditures, revenues, and population indicators which we use as controls. Our final dataset is an unbalanced panel for 1993–2020 resulting in 2,082 municipality-year observations. The dataset starts with the introduction of direct mayor elections in Hesse in 1993.

[19] The typical career path in the German local administration begins with an apprenticeship or a dual-degree program at a University of Applied Sciences *(Diplom-Verwaltungswirt)* Before running for mayor (the highest local administration office), administrators usually gain multiple years of work experience in different departments (e.g. public order office, residents and registration office, public health department). Thus, "prior employment in administration" strongly overlaps with "administrative apprenticeship" and "public administration degree".

[20] We exclude all candidates with prior experience in office, as incumbent mayors may have already gained experience in attracting investment grants during their prior term(s), which could bias our results.

[21] When more than two candidates compete (and none receives an absolute majority of votes), we use the results for the run-off election to calculate the margin of victory.

3.2 Data description

3.2.1 Mayors and mayor candidates in Hesse

Table 1 summarizes descriptive statistics on personal characteristics of all Hessian mayor candidates (columns 2–4) and elected mayors (columns 5–7) averaged across the 1993–2020 period. Comparing these two groups, women are less likely to get elected as mayors than to run as mayor candidates (6.3% vs. 10.9%),[22] CDU candidates perform disproportionately worse than their candidate share (25.2% elected mayors vs. 30.8% candidates), voters have a preference for public administrator mayors (63.9% elected mayors vs. 50.7% candidates).

Focusing on elected mayors, on average, they get elected approximately at age 46. 69.7% of mayors hold a university degree, while in comparison in 2018, the share of adults aged 25–65 with a university degree in Germany was at 22%.[23] The majority of mayors in our sample is supported by one of the mainstream parties: SPD (38.9%) or CDU (25.2%). Candidates from minor parties, such as the Free Democratic Party (FDP) or the Greens, hardly win mayor elections, while 28.9% of mayors are independent and do not belong to a party.

While most mayors in our sample (63.9%) have a public administration background, the share of mayors with a non-administrative background has increased over time (see Fig. 1). In 1993, only 22% of mayors had a non-administrative background and by 2020 the share of mayors with an outsider background more than doubled to 47%. Among these outsider mayors, 10.9% have a background in business/finance, 7.1% in law, 5.2% in teaching/social work, 5% in police/military, 3.6% in industry and 2.8% are self-employed.

3.2.2 Investment grants in Hesse

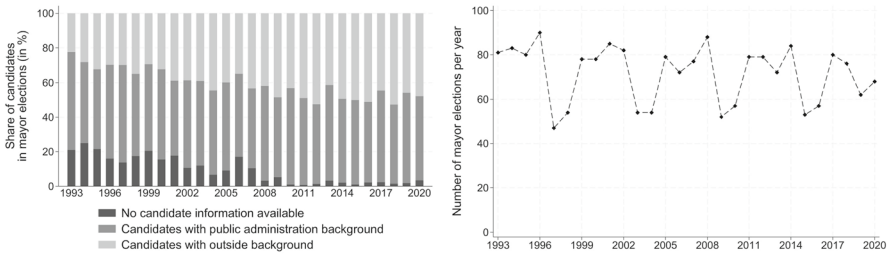
As outcome variable in our RD analysis, we use the log of investment grants per capita received by a municipality per year (i.e. we have municipality-year observations) from the Hessian State Statistical Office.[24] To adjust for inflation, we transform the data using the GDP deflator from the German Federal Statistical Office with 2015 as base year. In Fig. 2, we provide descriptive statistics on investment grants per capita.

Subfigure (a) shows the distribution of investment grants per capita over the observation period, i.e. a right-skewed distribution with relatively large outliers at the top.

[22] The underrepresentation of women as mayors in Germany is well-documented in the literature (see for instance Baskaran and Hessami (2018) and Freier and Thomasius (2015)).

[23] Source: Education Report 2020 of the German Federal Ministry of Education and Research.

[24] To be able to distinguish between intensive and extensive margins, it would, of course, be desirable to (additionally) use data on the number of applications submitted by mayors as a more direct measure of effort. However, since this data is not available (even after directly contacting several Hessian Ministries), we are not able conduct this type of analysis. It should be noted, however, that grant receipts are positively correlated with the number of (successful) applications and therefore in large parts capture our desired outcome.



(a) Mayor candidate background **(b)** Mayor elections over time

Fig. 1 Data coverage: Mayor candidate background and mayor elections, 1993–2020. Subfigure (**a**) shows the share of candidates in our sample for mayor elections in Hesse between 1993 and 2020. The darkest shade indicates the subsample of mayor candidates for which we were not able to find information on their background. The slightly brighter shade indicates the number of public administrator candidates, while the brightest shade indicates the number of outsider candidates for the mayor's office in our sample. Subfigure (**b**) shows the number of total mayor elections in Hessian municipalities in each year of the observation period. Direct mayor elections were first introduced in Hesse in 1993; however, not in all municipalities simultaneously

Table 1 Summary statistics: Candidate and mayor characteristics

Sample	Mayor candidates			Elected mayors		
	Obs	Mean	SD	Obs	Mean	SD
Personal characteristics						
Age	1946	45.962	8.242	1043	45.755	7.783
Female	2505	0.109	0.312	1095	0.063	0.243
High school degree	2505	0.095	0.293	1095	0.119	0.324
University degree	2027	0.703	0.457	1039	0.697	0.460
Political affiliation						
CDU (conservative)	2505	0.308	0.462	1095	0.252	0.434
SPD (left-wing)	2505	0.358	0.480	1095	0.389	0.488
Other party	2505	0.107	0.309	1095	0.079	0.271
Independent	2505	0.250	0.433	1095	0.289	0.454
Professional background						
Public administration	2193	0.507	0.500	1060	0.639	0.481
Business	2165	0.080	0.271	1055	0.063	0.242
Finance	2165	0.059	0.235	1055	0.046	0.211
Industry	2165	0.044	0.205	1055	0.036	0.186
Lawyer	2165	0.071	0.256	1055	0.071	0.257
Police/military	2165	0.061	0.239	1055	0.050	0.219
Self-employed	2165	0.070	0.256	1055	0.028	0.166
Teaching/social work	2165	0.065	0.247	1055	0.052	0.222
N	2505			1095		

This table shows summary statistics for various candidate characteristics, both for all mayor candidates and only elected mayors. Note that the values on "professional background" do not sum up to 100% as there are various "other" occupations and types of employment that we do not explicitly report

Therefore, in our empirical analysis, we use the *log* of investment grants per capita to reduce the influence of outliers in our estimations. Subfigure (b) shows the development of investment grants per capita over the 1993–2020 period differentiating between public administrator and outsider mayors that were in charge. First, the plots indicate considerable yearly fluctuations which is why we include year fixed effects in our estimations later on. Second, public administrator mayors on average attract more investment grants than outsider mayors. This is in line with our initial hypothesis that public administrator mayors are more competent in writing applications. To test whether this is a causal effect, we conduct RD estimations in our main analysis.

3.2.3 Further municipal data for Hesse

We also obtain official data on a variety of fiscal indicators (i.e., different municipal spending items, tax rates and revenues, and municipal deficits and debt), as well as demographic variables (i.e., population size and density, female population share, population age structure) from the Statistical Office of Hesse (see online appendix Table A.2 for summary statistics).

4 Empirical strategy

4.1 Baseline specification

We want to explore whether mayors with and without a public administration background differ in their ability to attract additional funds for their municipality in the form of investment grants. Using municipality-year data, the underlying structural relationship is:

$$Investment\ grants_{i,t+1} = \alpha + \beta Pubadmin\ mayor_{i,t} + \delta \mathrm{X}_{i,t} + \lambda_i + \gamma_t + \epsilon_{i,t} \quad (1)$$

where $Investment\ grants_{i,t+1}$ is the log of investment transfers per capita[25] received by municipality i in year $t+1$.[26] $Pubadmin\ mayor_{i,t}$ is a dummy that indicates whether a municipality i has a mayor in office with a background in public administration in year t. $X_{i,t}$ includes various control variables. λ_i and γ_t account for time-invariant municipal characteristics and year-specific effects. Standard errors are clustered at the municipality level.

OLS estimation would likely bias our estimates of β. A key concern is that unobserved municipality characteristics affect both the election of specific types of mayors as well as investment grant receipts. For instance, voters in poorer or more rural

[25] Out of 980 municipality-year observations, our dataset includes only 19 cases where a municipality received 0 Euros in a given year. Following common convention, we add +1 before taking logs. As an alternative, we have dropped these observations from the sample. The results do not change (available upon request).

[26] To account for the fact that grant receipts occur with a lag (i.e. typically when construction starts) following the submission of the application, we apply a one-year lag to the outcome.

areas might strategically elect public administrators as mayors anticipating that they are better able to secure grants. This would create an upward bias in β. On the other hand, it could be that richer or more urban municipalities more likely elect outsider mayors as there are more businesspeople running as candidates in larger municipalities, while larger municipalities require more infrastructure and face higher demands by a richer, urban population. This, in turn, would downward bias β.

To identify a causal effect, we implement a sharp RD design for close mixed-background elections following Lee et al. (2004). We compare investment grants receipts in municipalities where public administrator candidates barely won against outsider candidates with outcomes in municipalities where outsider candidates barely won against public administrator candidates. Following Gelman and Imbens (2018), we rely on local linear and quadratic regressions with optimal bandwidths for the subsample of mixed-background mayor elections as follows:

$$\begin{aligned} \textit{Investment grants}_{i,t+1} = &\alpha + \beta \textit{Pubadmin mayor}_{i,t} + f(\textit{Vote margin})_{i,t} \\ &+ \textit{Pubadmin mayor}_{i,t} \times g(\textit{Vote margin})_{i,t} + \epsilon_{i,t}, \end{aligned} \tag{2}$$

where *Vote margin* is the margin of victory of the public administrator candidate in the last election and represents the forcing variable on a scale from −100 to 100. While we have yearly outcomes, $\textit{Pubadmin mayor}_{i,t}$ and *Vote margin* are constant over mayor terms. $f(.)$ and $g(.)$ are functions of the vote margin whose slope may vary at the threshold. We follow Calonico et al. (2019) and use the *MSERD* algorithm to construct optimal data-driven bandwidths.[27]

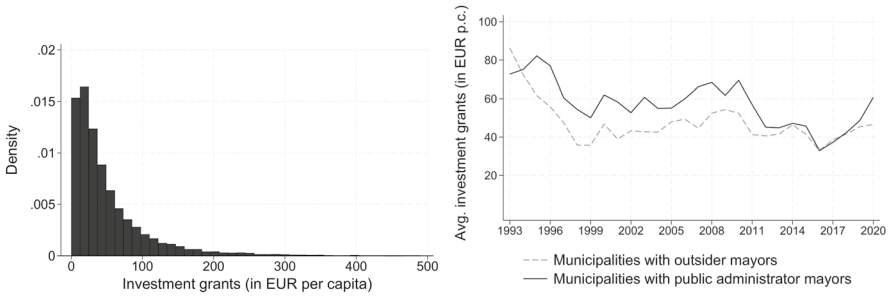
4.2 RD validity

The identifying assumption is that all municipality characteristics change continuously at the threshold such that the only discrete shift is the change in mayors' background. We perform several tests to support the validity of our identification strategy.

4.2.1 Discontinuity in density

We test whether there is a discontinuity in the density of the running variable at the threshold. It would suggest that municipalities manipulate their treatment, calling into question local randomization. Public administrator candidates may e.g. more likely win close races than outsider candidates. In addition to the histogram in Subfigure 3a, we test for a jump in the density of the running variable, using the McCrary (2008) method in Subfigure 3b. We also use the more recently proposed non-parametric manipulation test by Cattaneo et al. (2018) and Cattaneo et al. (2019a), which provides improvements in both size and power and does not require prebinning the data. None of the three graphs in Fig. 3 shows a discontinuity in the

[27] We apply the Stata packages *rdbwselect* and *rdrobust* provided by Calonico et al. (2017).



(a) Distribution across municipalities **(b)** Averages over time, by mayor background

Fig. 2 Descriptive statistics: Investment grants per capita. This figure illustrates descriptive statistics for investment grants per capita. Subfigure (**a**) shows the distribution of per-capita investment grants across municipalities. Subfigure (**b**) shows the development of average investment grants during the 1993–2020 period for municipalities governed by outsider mayors (dashed line) and municipalities governed by public administrator mayors (solid line)

density of the margin of victory at the threshold, suggesting that there is no manipulation of the treatment status.

4.2.2 Balance tests for municipality characteristics

A second assumption is that the selection of candidates close to the cutoff is uncorrelated with municipal characteristics that may matter for investment grant receipts. Thus, municipalities in which a public administrator candidate barely wins against an outsider candidate should not systematically differ from municipalities where an outsider candidate barely wins against a public administrator candidate. To formally test the success of our local randomization at the municipal level around the cutoff, we repeat our baseline estimations with eight different municipality characteristics as dependent variables (see Table A.3). None of the differences between municipalities with a public administrator and an outsider mayor are significant.

4.2.3 Unconfoundedness with other mayor characteristics

A further concern are confounding effects due to other personal attributes of elected mayors. For instance, public administrator candidates might be concentrated in specific parties. Hence, the results that we obtain may be due to mayors' party affiliation rather than mayors' background. We test whether in close races victorious public administrator candidates differ from victorious outsider candidates in various attributes. Although "ability" cannot be measured directly, it is at least partly related with observable characteristics such as education. In Table A.4, we test for a discontinuity at the threshold for the following characteristics of elected mayors: education, gender, age, and party affiliation. We do not find any significant differences between public administrator and outsider mayors who were elected in close races.

5 Results

5.1 Baseline

We first graphically explore the relationship between mayors' background and investment grant receipts. Figure 4 plots investment grant receipts at different margins of victory. Positive values of the margin of victory imply that the public administrator candidate wins the election, whereas negative values imply that the outsider candidate wins the election. The dots are binned averages of the outcome variable. The solid lines plot flexible polynomials on both sides of the cutoff with 95%-confidence intervals shaded in grey. There is no discontinuity in investment grant receipts between municipalities with and without a public administrator mayor.

Next, we explore the effect of public administrator mayors on investment grants with regressions based on Equation (2). Table 2 collects RD estimates for both non-parametric (Model 1 and 2) and parametric (Model 3) specifications. Again, there is no significant difference.[28]

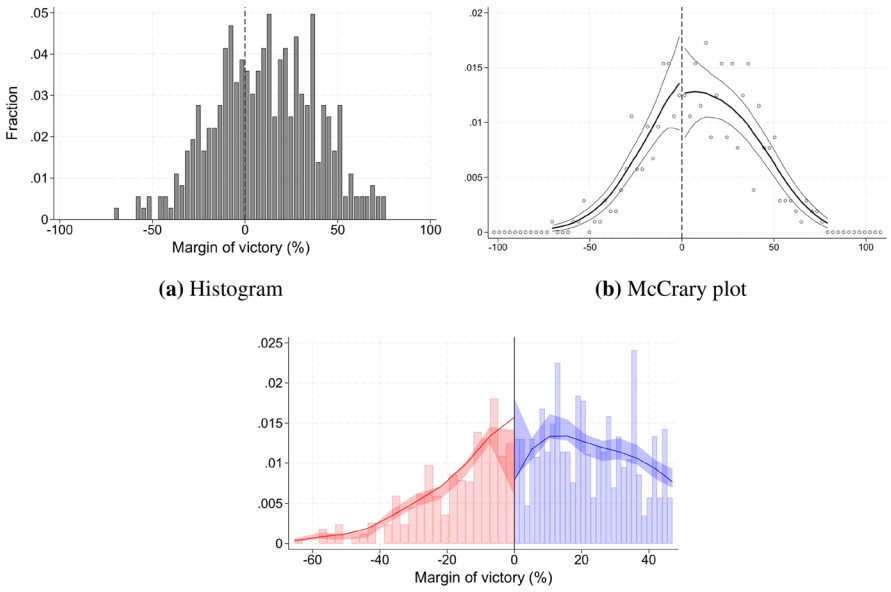
In the online appendix (see Table A.5), we also report results from OLS estimations based on the full sample. While the simple bivariate relationship between public administrator mayors and investment grant receipts is significantly positive, including controls (e.g. population size, population density, etc.) and municipality and year FE leads to insignificant results. This indicates that OLS estimation leads to an upward bias in the relationship. As stated in Sect. 4, this might for instance be due to voters in poorer or more rural municipalities strategically electing public administrator candidates as mayors as they are likely better able to secure grants for investment projects. The fact that the significant relationship disappears once population controls are included indicates that these characteristics play a key role.

5.2 Robustness

5.2.1 Bandwidth choice

We test the sensitivity of our results to bandwidth selection in Figure A.1 in the online appendix based on a variety of bandwidths, franging from 5% to 15% margins of victory. All estimated coefficients for the public administrator mayor dummy are close to zero and insignificant.

[28] Even though the estimates are far from conventional significance level, the coefficients are slightly positive and of moderate size, ranging between 11% and 26% additional grants being attracted by public administrator mayors. In Sect. 5.2.4, we conduct further tests to investigate whether our analyisis is underpowered and whether we would be able to detect small, moderate and large effects given our RD sample.



(a) Histogram **(b)** McCrary plot

(c) Cattaneo et al. plot

Fig. 3 RD validity: Density tests for running variable. This figure presents a histogram of the running variable "Margin of victory" (Subfigure (**a**)) and the results of local density estimation according to McCrary (2008) and Cattaneo et al. (2018) (see Subfigures (**b**) and (**c**)). The solid line in Subfigures (b) and (c) represents the density of the running variable, while the shaded areas indicate confidence intervals

5.2.2 Scaling of outcome variable

We test whether the null effect for investment grant receipts is sensitive to the scaling of the outcome variable using five alternative scalings (see Table A.7 in the online appendix). Models (1)–(5) present results for the extensive margin (dummy = 1 if a municipality received non-zero grants in a year), total investment grants, per capita investment grants, total per capita investment grants acquired during the entire term, and the difference in per capita investment grants between the last and first year in office. None of the coefficients are statistically significant.

5.2.3 Inclusion of controls

We also rerun our baseline RD model by including municipal controls (i.e., population size, population density, female population share and share of working-age population) in Table A.8. As expected, adding controls reduces standard errors. Model (2) is our preferred specification including fixed effects and controls. The coefficient is close to zero, confirming the baseline null result.[29]

[29] We also repeat our baseline estimation with additional economic controls capturing the potential demand for investment grants, i.e. local employment share, local business tax revenues per capita, number of firms per capita, municipal debt per capita, and total grants received. The results remain

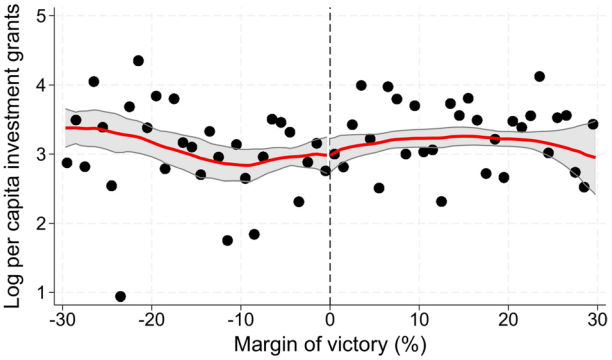


Fig. 4 Baseline RD plot. This figure shows the RD plot for the log of per capita investment grant receipts per municipality when the mayor in office has a public administrator vs. outsider background. The forcing variable is the margin of victory of the public administrator candidate for the mayor's office in mixed-background races (where the top-two candidates have a background in public administration vs. outside of it). Observations to the right of the cutoff imply that a public administrator holds the mayor's office. Each dot is the binned local average of investment grants raised by the municipality for the margin of victory. The solid lines are from a local linear smooth of the underlying observations. The grey-shaded areas are the 95% confidence intervals (Color figure online)

Table 2 Baseline: Public administrator mayors and investment grants

Dep. var.: Log(inv grants p.c.)	(1)	(2)	(3)
Public admin mayor	0.110	0.264	0.189
	(0.368)	(0.328)	(0.518)
Bandwidth type	MSE optimal	MSE optimal	MSE optimal
Bandwidth size	11.712	11.712	11.712
Polynomial	Linear	Linear	Quadratic
Time FE	No	Yes	No
N	605	605	605
Elections	105	105	105
Municipalities	103	103	103
Mean (SD)	3.17 (1.52)	3.17 (1.52)	3.17 (1.52)

This table reports estimates from sharp RD estimations that relate the background of elected mayors to investment grant receipts. The sample covers all mayor elections in Hesse where the top-two candidates were of opposite backgrounds ("mixed-background elections"). The dependent variable is the log of investment grants per municipality, measured in constant (2015) per-capita values. The treatment variable is a dummy which equal to one if the candidate with an administrative background won the last election. We report local linear (Model 1 and 2) and quadratic (Model 3) regressions applying MSERD optimal bandwidths proposed by Calonico et al. (2019). Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality of the candidate. Stars indicate significance levels at 10% (*), 5% (**) and 1%(***)

Footnote 29 (continued)
unchanged (available upon request). Since these economic variables are not consistently available across all periods, their inclusion reduces the number of observations. For this reason, we do not include these additional controls in our baseline estimation.

5.2.4 Statistical power

One concern could be that our analysis lacks statistical power. Therefore, we conduct ex-post power calculations for RDDs following Cattaneo et al. (2019b) in Table A.9 in the online appendix. In more conservative scenarios e.g., if the true effect of mayors' background at the threshold were 20% of the standard deviation, we would be able to detect it with a 9.7% probability. However, we have sufficient statistical power to identify larger effect sizes. For instance, if the true effect were 80% of the standard deviation, we would detect it with a 72% probability. Thus, although we cannot rule out minor effects of mayors' background on investment grants, our study is adequately powered to detect moderate to large effects.

6 Effect heterogeneity

We explore extensions to our main regression to test for effect heterogeneity. We rerun our baseline RD model estimating fully interacted specifications, i.e. we interact "public administration mayor" and the "margin of victory" with a dummy that relates to the political environment.[30]

6.1 Vertical alignment: state governments

State governments might allocate grants to politically aligned municipalities for electoral reasons. Baskaran and Hessami (2017) find that aligned municipalities receive more discretionary transfers in Hesse, specifically when the degree of local support for the state government is strong. Quinckhardt (2023) shows for eight German states that party alignment between a mayor and the state government increases transfers to municipalities by 20% per year.

One could thus hypothesize that municipalities with a public administrator mayor who is from the same party as the state government receive more grants. We explore the role of partisan alignment with the state government and rerun our baseline RD model including and interacting a dummy equal to one if the mayor‘s party is in the state government with "public administrator mayor" and "margin of victory". The results are collected in Table 3.[31]

The interaction effect is insignificant in all models and this null finding is robust across different bandwidth choices (see Figure A.2 in the online appendix). Hence,

[30] Note that the political environment is of course not randomly assigned in the following analysis. Both state government alignment and unified local governments are more likely to emerge in a setting where there is less polarization and specific partisan preferences are more pronounced within a state or municipality. Nevertheless, it is of interest to analyze whether the baseline effect varies with the political environment.

[31] Overall, for 177 municipality-year observations in our close mixed-background races, the mayor's party is politically aligned with the state government (i.e. 33% of the sample). 103 and 74 observations refer to public administrator mayors and outsider mayors, respectively.

investment grant receipts do not depend on party ties between the mayor's party and the state government,[32]

These results represent correlational evidence. In online appendix Table A.13, we show that vertically aligned municipalities are statistically different from non-aligned municipalities in several observable characteristics (population size, population density, debt, and local tax rates). Although we explicitly control for population size and density in Model(3), we acknowledge that (un)observed confounders could still introduce endogeneity.[33]

6.2 Horizontal alignment: local councils

Mayors with a public administration background may be more motivated to attract investment grants if their party also holds the majority in the council (unified government). On the other hand, public administrator mayors may not be willing to leverage their administrative skills if faced with an opposing council majority (divided government). Our mixed-background RD sample ($\leq 10\%$ margin of victory) includes 51 municipality-year observations (24 and 27 observations for public administrator and outsider mayors) where the mayor's party is aligned with the ideological camp of the council majority ($\approx 9.5\%$ of the sample).[34]

One concern is that municipalities in which the mayor and the council majority align ideologically might differ in their characteristics from municipalities without horizontal alignment and these differences could affect grant receipts. To address this issue, we compare municipalities with aligned local governments to all other municipalities in Table A.12: the only significant difference is in terms of population age structure, which we control for in our model. There are no differences in other characteristics, particularly fiscal indicators. Note that our results still need to be interpreted with caution and as mostly correlational since we cannot explicitly test for political strategies and other unobservables determining horizontal alignment.

Next, we rerun our baseline RD model including and interacting a dummy equal to one if the mayor belongs to the ideological camp (left/right) which holds the

[32] One possible reason why, in contrast to Baskaran and Hessami (2017), we do not find a significant difference in the amount of transfers between municipalities according to state government alignment is that we use *investment grants* while Baskaran and Hessami (2017) focus on budget support transfers *(Zuweisungen und Zuschüsse für laufende Zwecke)*. Mayors do not apply for budget support transfers and therefore the personal effort and competence of mayors plays no role for the allocation of these transfers.

[33] In additional estimations (available upon request), we also control for the fiscal variables mentioned here. The results are unchanged. Since these are simultaneously determined (endogenous) variables considered as "bad controls", we prefer not to include them in the main estimations.

[34] As mayor and council elections vary in their timing, council majorities may change during a mayor term.

Table 3 Effect heterogeneity I: Aligned state governments

Dep. var.: Log(inv grants p.c.)	(1)	(2)	(3)	(4)
Public admin mayor	0.021	−0.112	−0.060	0.335
	(0.435)	(0.298)	(0.335)	(0.607)
State govt alignment	0.095	−0.135	−0.159	0.492
	(0.601)	(0.330)	(0.368)	(0.801)
Public admin mayor x	0.239	0.293	0.284	−0.388
State govt alignment	(0.759)	(0.497)	(0.532)	(1.031)
Bandwidth type	MSE optimal	MSE optimal	MSE optimal	MSE optimal
Bandwidth size	11.712	11.712	11.712	11.712
Polynomial	Linear	Linear	Linear	Quadratic
Time FE	No	Yes	Yes	No
Controls	No	No	Yes	No
N	605	605	605	605
Elections	105	105	105	105
Municipalities	103	103	103	103
Mean (SD)	3.17 (1.52)	3.17 (1.52)	3.17 (1.52)	3.17 (1.52)

This table reports estimates from sharp RD estimations that relate the background of the elected mayor to investment grant receipts. The sample covers all mayor elections in Hesse where the top-two candidates were of opposite backgrounds ("mixed-background elections"). The dependent variable is the log of investment grants per municipality, measured in constant (2015) per-capita values. The treatment variable is a dummy equal to one if the candidate with an administrative background won the last election. We interact the treatment dummy as well as the control function with a dummy for whether the mayor's party belongs to the state government. Overall, in 177 municipality-year observations, the mayor's party is politically aligned with the state government. Of these, 103 (74) observations refer to public admin (outside) mayors respectively. We report local linear (Model 1, 2, and 3) and quadratic (Model 4) regressions using MSERD optimal bandwidths proposed by Calonico et al. (2019). Municipal controls include population size, population density, and the working-age population share. Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality of the candidate. Stars indicate significance levels at 10% (*), 5% (**) and 1%(***)

council majority with "public administration mayor" and "margin of victory".[35] The results are collected in Table 4.

The positive and statistically significant coefficient for the interaction suggests that public administrator mayors attract more than twice as many investment grants than outsider mayors when they have the support of the council majority. This corresponds to 38 Euros per capita more per year for a median-sized Hessian municipality with about 10,000 inhabitants. The coefficient for the interaction effect is robust

[35] We categorize the SPD and the Greens as left-wing, and the CDU and the FDP as right-wing. Even though smaller parties and voter communities contribute to coalition building, the ideological positions at the local level are often more "pragmatic" and cannot be clearly classified into a particular camp. The dummy variable is equal to one if the camp of the mayor's party also has the majority (50%+η) of seats in the council. Note that by definition independent mayors can not be aligned with a local council majority.

to including time fixed effects (Model (2)), and municipal controls (Model (3)).[36] In addition, Figure A.3 in the online appendix shows that the positive interaction term is robust to different bandwidths.[37,38]

7 Mechanism: Mayors' indirect electoral incentives

In this section, we run additional estimations to analyze why public administrator mayors that face an ideologically aligned local council attract more investment grants.

7.1 Investment grant cycles over council terms

Mayors in Hesse (and in other German states) are reelected at a very high rate and once in office they often stay there until retirement. This makes it unlikely that mayors are primarily motivated by their personal electoral incentives to apply for investment grants. Moreover, this would not explain why the competence of public administrator mayors (compared to outsider mayors) only makes a difference for grant receipts when the council is politically aligned. What seems more likely is that mayors have an interest in helping the ideologically aligned local council stay in power. This does not only reflect their personal ideological preferences as citizens of the municipality but also matters for the direction of future local policy choices.

We test whether the amount of investment grants that public administrator mayors attract when faced with an aligned council varies over the council term, i.e. whether they are higher just before the next council election. Table 5 collects the results for specifications where we include a dummy for one year and two years before the council election and interact this with the public administrator mayor dummy.[39] Even though the sample is of course smaller and we therefore have to be careful in interpreting the results, we find that the baseline effect heterogeneity is driven

[36] For the quadratic polynomial (Model (4), the interaction is insignificant. However, due to the concerns expressed by Gelman and Imbens (2018), we focus on the linear specification as our preferred model.

[37] For the sake of completeness, we also explore divided local governments (see Table A.6 in the online appendix). Our RD sample includes 53 municipality-year observations (≈ 9.8% of the sample) with a divided government. The results are, as expected diametrically opposed to those for unified governments: public administrator mayors who face an opposing council majority are less successful in securing investment grants. The interaction is robust to the inclusion of fixed effects (Model (2)) and controls (Model (3)), and the use of quadratic polynomials (Model (4)). Figure A.3 illustrates the robustness to different bandwidth choices.

[38] A reviewer has pointed to the negative *Council alignment* coefficient in Model (3) in Table 4. This result is not directly related to our main hypothesis but is indeed interesting. One potential explanation could be that outsider mayors jointly governing with an aligned council are complacent and even reduce their effort in raising additional funds. However, note that the effect is only significant at the 10%-level in one of the four models (Model 3), and coefficient signs vary across specifications. Therefore, any interpretation must be treated with caution.

[39] Figure A.4 in the online appendix illustrates this more clearly in an event-study plot going back up to four years before council elections: the effect indeed only kicks in one year before council elections.

Table 4 Effect heterogeneity II: Unified local governments

Dep. var.: Log(inv grants p.c.)	(1)	(2)	(3)	(4)
Public admin mayor	0.020	0.159	−0.254	0.199
	(0.390)	(0.341)	(0.292)	(0.560)
Council alignment	−0.203	−0.210	−0.558*	0.782
	(0.505)	(0.413)	(0.322)	(0.545)
Public admin mayor x	1.333**	1.667**	1.102**	1.155
Council alignment	(0.656)	(0.663)	(0.463)	(0.903)
Bandwidth type	MSE optimal	MSE optimal	MSE optimal	MSE optimal
Bandwidth size	11.712	11.712	11.712	11.712
Polynomial	Linear	Linear	Linear	Quadratic
Time FE	No	Yes	Yes	No
Controls	No	No	Yes	No
N	605	605	605	605
Elections	105	105	105	105
Municipalities	103	103	103	103
Mean (SD)	3.17 (1.52)	3.17 (1.52)	3.17 (1.52)	3.17 (1.52)

This table reports estimates from sharp RD estimations that relate the background of the elected mayor to investment grant receipts. The sample covers all mayor elections in Hesse where the top two candidates were of opposite backgrounds ("mixed-background elections"). The dependent variable is the log of investment grants per municipality, measured in constant (2015) per-capita values. The treatment variable is a dummy equal to one if the candidate with an administrative background won the last election. We interact the treatment dummy as well as the control function with a dummy for whether the mayor belongs to the ideological camp (left/right) which holds the council majority. Overall, in 51 municipality-year observations, the mayor's party is politically aligned with the council majority. Of these, 24 (27) observations refer to public admin (outsider) mayors respectively. We report local linear (Model 1, 2 and 3) and quadratic (Model 4) regressions using MSERD optimal bandwidths proposed by Calonico et al. (2019). Municipal controls include population size, population density, and the working-age population share. Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality of the candidate. Stars indicate significance levels at 10% (*), 5% (**) and 1%(***)

by higher grant receipts one year before council elections. The relevant interaction term coefficient is significant at the 10% level. Mayors may be uncertain about when grants will be received and therefore may submit applications "too early" which in some cases may lead to receiving the money earlier. For this reason, we also consider the effect two years before the council election: the coefficient is positive but insignificant.[40]

7.2 Investment grants and the reelection of council majorities

In a second step, we test whether this hike in investment grant receipts matters for the electoral success of aligned councils. This requires that voters indeed are not

[40] On the other hand, if mayors do not consider potential lags, it could be that the money is accidentally received in the year of the council election or even one year later. If anything, this would mean that we underestimate the true effect as the investment grant receipts in the "control" period are inflated.

Table 5 Mechanism: Budget cycles in investment grants across council terms

Dep. var.: Log(inv grants p.c.)	(1)	(2)	(3)	(4)
Period	*t-1*	*t-1*	*t-2 & t-1*	*t-2 & t-1*
Public admin mayor	0.419	0.435	0.372	0.320
	(0.389)	(0.449)	(0.585)	(0.594)
Period before council election	−0.734	−0.591	−0.157	−0.088
	(0.517)	(0.487)	(0.500)	(0.514)
Public admin mayor x	0.938	1.026*	0.462	0.681
Period before council election	(0.689)	(0.616)	(0.784)	(0.722)
Bandwidth type	MSE optimal	MSE optimal	MSE optimal	MSE optimal
Bandwidth size	12.229	12.229	12.229	12.229
Polynomial	Linear	Linear	Linear	Linear
Controls	No	Yes	No	Yes
N	102	102	102	102
Elections	28	28	28	28
Municipalities	27	27	27	27
Mean (SD)	2.92 (1.44)	2.92 (1.44)	2.92 (1.44)	2.92 (1.44)

This table reports estimates from sharp RD estimations that relate the background of elected mayors to investment grant receipts. The sample covers candidates all mayor elections in Hesse where the top-two candidates were of opposite backgrounds ("mixed-background elections"). The sample is limited to the subsample of unified governments. i.e. where the mayor and the majority of councilors belong to the same ideological camp. The dependent variable is the log of investment transfer per municipality, measured in constant (2015) per-capita values. The treatment variable is a dummy equal to one if the candidate with an administrative background won the last election. We interact the treatment dummy as well as the control function with a dummy for whether the local council is in the last two years (Model 3 and 4) or final year of the legislative period (Model 1 and 2). We report local linear regressions using MSERD optimal bandwidths proposed by Calonico et al. (2019). Municipal controls include the population size, population density, and the working-age population share. Heteroscedasticity- and cluster-robust standard errors are in parentheses. The unit of clustering is the municipality of the candidate. Stars indicate significance levels at 10% (*), 5% (**) and 1%(***)

aware of who has written and submitted the grant application and therefore voters give the incumbent council majority credit for this success. In Table 6, we investigate the relation between the investment funds raised and the probability of reelection for the ruling council majority. We use a linear probability model, with a dummy as dependent variable equal to one if the council majority defends its majority in the subsequent council election. The independent variable is the log of investment grants per capita; the estimated coefficients can therefore be interpreted as semi-elasticities.

We find that a 1% increase in investment grants leads to a 4.4% increase in the reelection probability of the council majority.[41] This suggests that the mayor indeed increases the reelection probability of the aligned local council majority in the

[41] In additional estimations, we repeat the analysis using a binary probit model. The estimated effects are similar. See Table A.11 and Figure A.5 in the online appendix.

next municipal election by raising investment grants before an upcoming council election.

8 Conclusion

Is a public administration background for mayors an advantage for their performance in office? We address this question using a sharp RD design in the context of Hessian municipalities for the subsample of mayor elections in which a candidate with a public administration background barely won or lost against a candidate with an outsider background. As outcome, we use investment grants from the state government, which mayors acquire via extensive applications.

Our baseline results indicate that there is on average no difference between mayors with and without administrative experience with regard to investment grant receipts. We conduct a number of robustness tests that confirm this result. We investigate heterogeneity in the treatment effect according to the composition of the local councils, and the alignment of the mayor‘s party with the ruling state government. We find that public administrator mayors attract more investment grants than outsider mayors when they have the support of the council majority.

We run additional estimations to test for mechanisms. Given diverse historical trajectories, mayor elections may take place at any point in time throughout council terms. Council terms, on the other hand, are synchronized across all Hessian municipalities. This allows us to test whether mayors are motivated to attract investment grants to ensure the reelection of ideologically aligned councils. Our results show that indeed in the subsample of unified governments public administrator mayors attract more grants when a council election is imminent. In a second set of estimations, we also show that these grant receipts are positively correlated with the reelection likelihood of existing council majorities.

We conclude that the competence of public administrator mayors only matters for their performance when they are sufficiently (politically) motivated to use it. As investment transfers are highly visible to voters and at the same time it is difficult for voters to correctly attribute outcomes to political bodies, one interpretation is that public administrator mayors have a greater incentive to apply for grants if they are supported by the council majority. Any electoral benefit in the next election will accrue to both the mayor and will spill over to the politically aligned council. Outsider mayors, on the other hand, have less competence and experience in dealing with bureaucratic application procedures and thus, even if there is a politically aligned council, it does not matter for their effort/success in attracting grants.

In view of our results, should all mayors have an administrative background? On the one hand, our results indicate that administrative training can be advantageous, particularly when mayors are incentivized to apply this expertise. On the other hand, these skills do not appear to enhance overall efficiency, suggesting that prior administrative experience offers limited benefits. While reelection incentives for aligned councils may result in higher investment grants, this does not imply that drafting grant applications is the best use of a mayor's time (Hessami, 2018). In contrast, mayors might create more welfare by engaging in less visible but more

Table 6 Mechanism: Investment grants and aligned council reelection

Dep. var.: Aligned council reelected	(1)	(2)	(3)	(4)
Investment grants (log p.c.)	0.028**	0.040***	0.036***	0.044***
	(0.011)	(0.011)	(0.011)	(0.010)
Population controls	No	Yes	Yes	Yes
Fiscal controls	No	No	Yes	Yes
Municipality & Year FE	No	No	No	Yes
N	795	795	789	789

This table reports estimates from linear probability models. The dependent variable is a dummy equal to one if the ideological camp which holds the council majority retains the council majority in the subsequent council election. Estimated coefficients can be interpreted as semi-elasticities. The sample includes all public administration mayors elected in mixed-background races (RD sample) which are politically aligned with the council majority (i.e., the mayor is from the same party as the majority of councilors). Standard errors in parentheses are robust to heteroscedasticity and clustered at the municipality level. Control variables include share of population over 65 years, share of working age population (15 to 65), log of population size, log of municipal expenditures per capita, log of municipal tax revenues per capita, and log of municipal debt per capita. Stars indicate significance levels at 10% (*), 5% (**) and 1%(***)

impactful activities. Overall, our results do not provide a definitive answer regarding the necessity of an administrative background for mayors. Also, further research is needed to understand the circumstances under which administrative expertise matters for performance. For instance, along the lines of Bordignon et al. (2020) it is of interest whether the effectivenss of administrative skills differs between large urban centers and smaller rural municipalities.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s10797-025-09882-z.

Acknowledgements We are grateful for funding from the German Research Foundation (DFG): project "Political selection in Germany" (Grant no. DFG-405960810). We thank the editor, two anonymous reviewers, Thushyanthan Baskaran, Kim Leonie Kellermann, Abhinav Khemka, Francesco Porcelli and participants at the 2023 EPCS conference in Hannover, the 2023 ZEW-ifo Young Scholars Political Economy Workshop in Mannheim, a PhD seminar at the Ruhr University Bochum and the 2024 IIPF conference in Prague for helpful comments and suggestions. Tom Berwe and Yannick Ollesch provided excellent research assistance. Maximilian Thomas thanks Jürgen Kleine-Frauns for valuable insights into the daily administrative work of German mayors.

Funding Open access funding enabled and organized by Projekt DEAL.

References

Alesina, A., Cassidy, T., & Troiano, U. (2018). Old and young politicians. *Economica, 86*(344), 689–727.

Alesina, A., & Tabellini, G. (2007). Bureaucrats or politicians? Part I: A Single policy task. *American Economic Review, 97*(1), 169–179.

Alpino, M., Asatryan, Z., Blesse, S., & Wehrhöfer, N. (2022). Austerity and distributional policy. *Journal of Monetary Economics, 131*, 112–127.

Avellaneda, C. N. (2009). Mayoral quality and local public finance. *Public Administration Review, 69*(3), 469–486.

Baskaran, T., & Hessami, Z. (2025). Women in deliberative bodies as policymakers. *Review of Economics and Statistics*, forthcoming.

Baskaran, T., & Hessami, Z. (2017). Political alignment and intergovernmental transfers in parliamentary systems: Evidence from Germany. *Public Choice, 171*, 75–98.

Baskaran, T., & Hessami, Z. (2018). Does the election of a female leader clear the way for more women in politics? *American Economic Journal: Economic Policy, 10*(3), 95–121.

Baskaran, T., Hessami, Z., & Schirner, S. (2024). Young versus old politicians and public spending priorities. *Journal of Economic Behavior and Organization, 225*, 88–106.

Beach, B., & Jones, D. B. (2016). Business as usual: Politicians with business experience, government finances, and policy outcomes. *Journal of Economic Behavior and Organization, 131*, 292–307.

Besley, T., Montalvo, J. G., & Reynal-Querol, M. (2011). Do educated leaders matter? *Economic Journal, 121*(554), F205-227.

Bordignon, M., Gamalerio, M., & Turati, G. (2020). Manager or professional politician? Local fiscal autonomy and the skills of elected officials. *Regional Science and Urban Economics, 83*, 103529.

Calonico, S., Cattaneo, M. D., & Farrell, M. H. (2019). Optimal bandwidth choice for robust bias-corrected inference in regression discontinuity designs. *The Econometrics Journal, 23*(2), 192–210.

Calonico, S., Cattaneo, M. D., Farrell, M. H., & Titiunik, R. (2017). Rdrobust: Software for regression-discontinuity designs. *Stata Journal, 17*(2), 372–404.

Cattaneo, M. D., Jansson, M., & Ma, X. (2018). Manipulation testing based on density discontinuity. *Stata Journal, 18*(1), 234–261.

Cattaneo, M. D., Jansson, M., & Ma, X. (2019). Simple local polynomial density estimators. *Journal of the American Statistical Association, 115*(531), 1449–1455.

Cattaneo, M. D., Titiunik, R., & Vazquez-Bare, G. (2019). Power calculations for regression-discontinuity designs. *Stata Journal, 19*(1), 210–245.

Coate, S., & Knight, B. (2011). Government form and public spending: Theory and evidence from US municipalities. *American Economic Journal: Economic Policy, 3*(3), 82–112.

Deno, K. T., & Mehay, S. L. (1987). Municipal management structure and fiscal performance: Do city managers make a difference? *Southern Economic Journal, 53*, 627–642.

Dreher, A., Lamla, M. J., Lein, S. M., & Somogyi, F. (2009). The impact of political leaders' profession and education on reforms. *Journal of Comparative Economics, 37*(1), 169–193.

Enikolopov, R. (2014). Politicians, bureaucrats, and targeted redistribution. *Journal of Public Economics, 120*, 74–83.

Fowler, A., & Hall, A. B. (2014). Disentangling the personal and partisan incumbency advantages: Evidence from close elections and term limits. *Quarterly Journal of Political Science, 9*, 501–531.

Freier, R., & Thomasius, S. (2015). Voters prefer more qualified mayors, but does it matter for public finances? Evidence for Germany. *International Tax and Public Finance, 23*(5), 875–910.

Gelman, A., & Imbens, G. (2018). Why high-order polynomials should not be used in regression discontinuity designs. *Journal of Business and Economic Statistics, 37*(3), 447–456.

Hessami, Z. (2018). Accountability and incentives of appointed and elected public officials. *Review of Economics and Statistics, 100*(1), 51–64.

Hessami, Z., & da Fonseca, M. L. (2020). Female political representation and substantive effects on policies: A literature review. *European Journal of Political Economy, 63*, 101896.

Kirkland, P. A. (2021). Business owners and executives as politicians: The effect on public policy. *Journal of Politics, 83*(4), 1652–1668.

Kuliomina, J. (2021). Do personal characteristics of councilors affect municipal budget allocation? *European Journal of Political Economy, 70*, 102034.

Lee, D. S., Moretti, E., & Butler, M. J. (2004). Do voters affect or elect policies? evidence from the US. House. *The Quarterly Journal of Economics, 119*(3), 807–859.

Lopes da Fonseca, M. (2017). Identifying the source of incumbency advantage through a constitutional reform. *American Journal of Political Science, 61*(3), 657–670.
McCrary, J. (2008). Manipulation of the running variable in the regression discontinuity design: A density test. *Journal of Econometrics, 142*(2), 698–714.
Quinckhardt, M. (2023). The value of a party: Local politics and the allocation of intergovernmental transfers. *European Journal of Political Economy, 80*, 102470.
Rogoff, K. (1990). Equilibrium political business cycles. *American Economic Review, 80*, 21–36.
Rogoff, K., & Sibert, A. (1988). Elections and macroeconomic policy cycles. *Review of Economic Studies, 55*, 1–16.
Szakonyi, D. (2021). Private sector policy making: Business background and politicians' behavior in office. *Journal of Politics, 83*(1), 260–276.
Vlaicu, R., & Whalley, A. (2016). Hierarchical accountability in government. *Journal of Public Economics, 134*, 85–99.