Does the Underrepresentation of Young People in Political Institutions Matter for Social Spending?

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Abstract

Young people are underrepresented in most political institutions. While studies have investigated the causes behind the shortage of younger politicians, the potential consequences for the substantive representation of young people's interests in policy outcomes remains under-researched. I argue that younger politicians will be more likely than older politicians to allocate social spending toward child welfare for young families. Using an original dataset of over 12,000 mayoral candidates in Japan (2006–2019) and a regression discontinuity design, supplemented by interviews with 15 mayors, I find that municipalities that elect younger mayors increase spending on child welfare, especially through long-term investments in infrastructure. Mechanism tests and interviews suggest these effects stem from younger mayors' different life stages and longer time horizons rather than greater electoral incentives to court younger voters. Notably, younger mayors do not cut elderly welfare spending, suggesting increased youth representation can benefit young families without exacerbating intergenerational conflict over welfare.

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Young people are underrepresented in most political institutions. Over half of the world's eligible voters are under 40 years old, compared to 15% of national legislators (Inter-Parliamentary Union 2018). In many advanced democracies such as Japan, this disparity is even greater. Less than 5% of members of Japan's House of Representatives are under 40, compared to nearly a third of the voting-age population. Local politicians play a critical role in the provision of social services, yet they too tend to be older than most of their constituents. The average municipal assembly member begins their four-year term at 59 and the average mayor at 62. Just 6% of assembly members and 2% of mayors are under 40.[1]

Although scholars have studied the *causes* of the age bias in political institutions (Lawless and Fox 2015; Stockemer and Sundström 2022), there is a lack of research on the potential *consequences* for the substantive representation of young people's interests in policy outcomes. This is surprising given that there are well-developed literatures on how other characteristics such as a politician's race, gender, class, and sexual orientation can influence the extent to which they advocate on behalf of groups who share similar characteristics (e.g., Broockman 2013; Carnes 2012; Reynolds 2013; Schwindt-Bayer 2006). Moreover, the shortage of younger politicians across all levels of government may be concerning for several reasons. There are many issues that disproportionately affect the young, from policies on education, unemployment, and childcare to those addressing longer-term challenges such as climate change, public debt, and social welfare reform. Without the greater presence of younger politicians in elected office, the policies implemented by mostly older politicians may be detrimental to both the short- and long-term interests of younger generations.

In this article, I examine how the age of mayors in Japan affects the welfare policies they enact in office. Intergenerational conflict over welfare is an especially salient issue in many advanced democracies that confront the challenges of declining birth rates and aging populations, as shrinking workforces struggle to support rising welfare costs for growing elderly populations. Japan, as the world's oldest country, is at the forefront of this demographic

[1] Japan Municipal Elections Dataset (introduced later).

trend. It thus provides an ideal setting to analyze how politicians of different ages allocate scarce resources between competing priorities for social spending. On the one hand, spending on child welfare for young families can increase fertility rates and female labor force participation, which addresses the labor shortage and long-term sustainability of the welfare system (Boling 2015; Iversen and Rosenbluth 2010). On the other hand, spending on elderly welfare can help governments keep up with the pressing financial and healthcare needs of an increasing number of senior citizens (Harper 2014; Muramatsu and Akiyama 2011).

I argue that younger politicians will be more likely than older politicians to promote spending on child welfare. In addition to testing this overall argument, I examine three potential mechanisms. First, younger politicians may be more motivated to advocate for child welfare spending because they are at a different life stage compared to older politicians—specifically, many are in the midst of raising young children themselves—which can significantly influence their policy priorities and preferences. Second, younger politicians may prioritize child welfare more due to their longer time horizons, recognizing that young people will disproportionately face the long-term consequences of declining birth rates on future economic growth and prosperity. Third, younger politicians may seek to enhance child welfare benefits because they are driven by stronger electoral incentives to respond to younger voters, who could form a critical support base for them in elections.

I test these hypotheses using a regression discontinuity design (RDD) and an original dataset of Japanese mayoral elections matched with detailed municipal expenditures data. Younger mayors are not randomly distributed across municipalities, which can differ in their welfare needs and preferences. By leveraging close elections between younger and older candidates, the advantage of my design is that I can estimate the causal effect of a municipality electing a younger mayor on social spending while holding constant the demographic composition, ideology, and socioeconomic characteristics of municipalities. Focusing on Japan offers further advantages because mayors have considerable discretion to implement their preferred welfare policies, and the municipal expenditures data allow me to identify spend-

ing targeted at different age groups and time periods. However, there is a lack of data on municipal elections. To fill in this gap, I use web scraping to assemble an original dataset of 12,191 mayoral candidates competing in 6,371 elections (2006–2019). I then supplement the findings from this new dataset with insights from interviews with 15 mayors and 20 municipal bureaucrats working inside social welfare departments.

I find that municipalities that elect younger mayors increase their spending on child welfare, particularly through long-term investments in infrastructure, such as constructing daycare centers. Mechanism tests and interviews suggest the effects emanate from the different life stage and longer time horizons of younger mayors rather than their greater electoral incentives to court younger voters. Importantly, while this increased emphasis on child welfare does divert resources from other policy areas, it does not result in cuts to elderly welfare. This underscores a nuanced understanding of intergenerational conflict, suggesting that greater youth representation can shape budgetary allocations benefiting young families without necessarily exacerbating tensions between the welfare needs of the young and old.

In sum, I provide evidence that young people's descriptive representation in elected office can lead to their substantive representation in social spending. In addition to adding age to the broader literature on elite characteristics and representation, I highlight two mechanisms unique to age: life stage and time horizons. In doing so, I show how younger politicians are more likely to allocate government resources both toward their younger constituents at a similar life stage and toward the future through greater long-term investment in child welfare infrastructure. My work also contributes to research on the age orientation of welfare programs, which has traditionally emphasized the role of electoral institutions (Estévez-Abe 2008; Lynch 2006). I find that even under the same majoritarian system, the age of politicians can make a substantial difference in spending that affects the public's well-being, especially individuals at the child-rearing life stage. My results further suggest that the extent to which young people are represented in political institutions will have ramifications for how societies respond to the challenges posed by declining birth rates and aging populations.

The Consequences of Youth Underrepresentation

In most countries, elected officials tend to be older than most of the constituents they represent. Recently, this common feature of political institutions has attracted significant scholarly attention. However, studies to date have predominantly focused on exploring the causes behind young people's underrepresentation in elected offices. For instance, scholars point to factors such as a lack of political ambition among youth (Lawless and Fox 2015; Shames 2017) and institutional barriers like high minimum age requirements and electoral systems favoring experienced candidates (Joshi 2013; McClean 2020; Stockemer and Sundström 2022). Conversely, there is less evidence that voter biases are to blame. In fact, most work finds that voters harbor strong negative biases against elderly candidates but are quite supportive of younger candidates (Eshima and Smith 2022; McClean and Ono 2024).

Despite this progress in identifying the causes driving young people's descriptive underrepresentation, there is a significant lack of research on the potential consequences for the substantive representation of young people's interests in policy outcomes. On the one hand, there are reasons to believe that youth underrepresentation does have important implications for public policy. There is extensive evidence that politicians are more likely to advocate for policies important to those who share their personal characteristics, including their gender, race, class, and sexual orientation. Scholars reliably find that descriptive representatives provide greater substantive representation for groups with whom they share identities, whether measured by constituency service (Broockman 2013; Butler and Broockman 2011), speeches (Clayton, Josefsson and Wang 2017; O'Grady 2019), bill sponsorships (Schwindt-Bayer 2006; Volden, Wiseman and Wittmer 2018), roll-call voting (Burden 2007; Carnes 2012), or even policy outcomes (Franck and Rainer 2012; Reynolds 2013), including social spending (Chattopadhyay and Duflo 2004; Funk and Philips 2019). While age is understudied, we might anticipate that younger politicians will similarly be more likely than older politicians to advance the interests of young people when it comes to deciding on welfare priorities.

On the other hand, there are reasons to doubt whether the relationship between the descriptive and substantive representation of young people will be as strong and robust as it is for other underrepresented groups. Research on gender and race, for instance, points to the unique experiences associated with being a woman or minority as a key mechanism behind substantive representation (Mansbridge 1999; Swers 2002). Youth, by contrast, is a universally shared experience among elected officials, in the sense that all older representatives were themselves young at some point in the past. The temporary and fleeting nature of youth further means that the exclusion of young people from public office seems on its face to be less unfair than the exclusion of women and minorities, as the latter groups expect to be underrepresented throughout their entire lives while the former need only to wait their turn (Bidadanure 2021; Phillips 1995). Younger politicians may therefore be relatively less motivated to advance youth-favored policies because they expect to one day become old.

Even if younger politicians are inclined to prioritize the interests of younger constituents, their effectiveness in doing so may be hampered by their relative lack of experience. Indeed, the rationale for minimum age requirements in political offices often hinges on the assumption that a certain level of life and professional experience is indispensable for effective governance (Bidadanure 2021; Stockemer and Sundström 2022). Although younger candidates by definition must have at least reached the minimum age of eligibility, they may still lack the experience, knowledge, and networks that can be crucial for navigating the political landscape. Such experience can be particularly important in legislative bodies, where seniority norms can significantly restrict the influence of newer, younger members on policy formulation and decision-making processes (Cox and McCubbins 1993; Epstein et al. 1997). Similarly, in executive roles, inexperience may impede a younger leader's ability to effectively liaise with the bureaucracy and collaborate with other politicians, who are often older and more experienced, to advance their policy agenda (Lee and McClean 2022).

Younger politicians may also be less likely to promote young people's interests in office because of the outsized influence of their older constituents. In advanced democracies, older

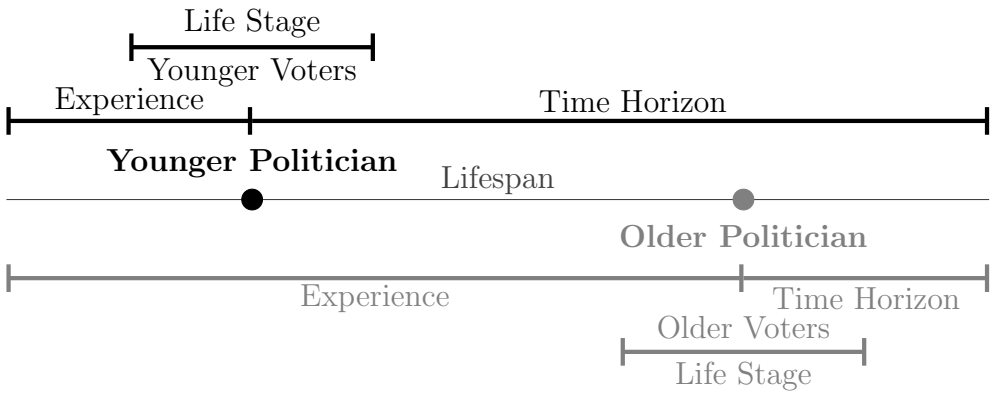
people are not only becoming more numerous, due to population aging, but also turn out to vote at higher rates, are better organized, and donate more to political campaigns than younger people (Goerres 2009; Vlandas 2018; Wattenberg 2007). The growing "grey power" of elderly voters may make it too electorally risky for younger politicians to substantially increase social spending that targets young families, as those funds could instead be directed toward the elderly. The effects of younger politicians may therefore only be observable in less visible forms of representation, such as responding to constituent communication (Broockman 2013; Butler and Broockman 2011), but not on more public acts such as those that affect the distribution of government resources.

While there is a lack of work on the policy consequences of youth underrepresentation, the closest study to this one is Curry and Haydon (2018), who investigate the impact of older lawmakers (aged 65 and over) on bill introductions in the US Congress.[2] They find only small, conditional effects of age on substantive representation. Older members of Congress are marginally more likely to introduce low-salience bills important to seniors, but for high-salience legislation, the determining factor is instead the size of the senior constituency in a lawmaker's district. While these weak effects could cast further doubt on the relationship between age and substantive representation, they may be a result of the authors' decision to study a group (older people) that is already descriptively and substantively overrepresented in politics. The lack of stronger findings may also stem from the authors' focus on a legislative setting, where representatives can face significant cross-pressures from other lawmakers, their party leadership, and the executive branch in the policymaking process.

This study empirically tests the unresolved question about whether young people's descriptive presence in political institutions can lead to their substantive representation in policy outcomes. Using original data and a novel approach, I estimate the causal effect of electing a younger representative on the allocation of social spending toward young families.

[2]Alesina, Cassidy and Troiano (2019) do not focus on representation but find that younger elected officials are more likely to participate in political businesss cycles by increasing spending in election years.

Figure 1: Younger and Older Politicians



Younger Politicians and Social Spending

In many contexts, younger and older people have distinct preferences regarding how politicians should distribute limited government resources for social welfare.[3] Younger people tend to favor more public spending on childcare, parental leave, maternity care, and family allowances, which can ease their ability to raise children and remain in the labor force (Busemeyer, Goerres and Weschle 2009; Iversen and Rosenbluth 2010). Older people, in contrast, typically prefer greater spending on pensions, senior services, and healthcare, which disproportionately benefit elderly retirees (Goerres 2009; Vlandas 2018).

I argue that younger politicians will bring these distinct preferences into office with them, which will consequently shape their policy choices. Assuming that politicians are in a position of power to influence social spending, my main expectation is that,

> **H1:** Younger politicians will be more likely than older politicians to increase spending on child welfare relative to spending on elderly welfare

In addition to testing for an overall effect of younger politicians on social spending, I investigate three potential mechanisms that could underpin this effect. While concerns about younger politicians' fleeting youth identity, relative lack of experience, and the influence of

[3]The extent of intergenerational differences in welfare preferences varies by country and policy issue (Busemeyer, Goerres and Weschle 2009). We might expect young people's descriptive representation to matter more for substantive representation in cases where preferences differ more across age groups.

elderly voters might suggest limitations, I propose a different perspective by considering the age of politicians as presenting a unique set of trade-offs. As illustrated in Figure 1, younger politicians, despite having less lived experience, bring three significant characteristics to office that may profoundly shape their approach to social policies: 1) they are at a different life stage; ii) they have longer time horizons; and iii) they are closer in age to younger voters, which may increase their electoral incentives to address this demographic's interests.

First, I expect younger politicians to be stronger advocates for child welfare spending because they are more likely to be at a life stage where they are raising young children themselves. Older politicians may have raised young children in the past, but younger politicians are much more likely to be raising them now in the present. For younger politicians who are parents, issues such as restrictive parental leave policies, limited daycare availability, and rising childcare costs may therefore represent key challenges that they confront in their daily lives, putting these issues at the forefront of their mind.

The nature of child-rearing challenges has also changed over time. Compared to when many older politicians had their children, younger politicians who are raising children are doing so at a time when there is much greater demand for public support for childcare, due in part to the substantial increase over time in the number of households where both parents work (Iversen and Rosenbluth 2010). Likewise, in many advanced democracies, a sense that governments have failed to keep up with demand for childcare is one reason cited for the decline in birth rates (Fukai 2017; Lynch 2006). While younger politicians with small children at home may be attuned to these issues, older politicians may feel that their own parental experience offers fewer insights into the challenges faced by present-day young families.[4]

The different life stage of younger politicians may thus shape the extent to which they see child welfare as a priority and their preferences regarding the need for greater childcare spending. If life stage is an important mechanism, then we might expect to see relatively larger effects on child welfare spending among younger politicians raising children.

[4]While this study focuses on the contemporary effects of age, we might also expect to observe generational differences in the policies advocated by younger politicians across different time periods and age cohorts.

H2: Younger politicians raising children will be more likely than younger politicians without children to increase spending on child welfare

A second potential mechanism is that younger politicians may be more motivated to invest in children because they have longer time horizons than older politicians in terms of their longer remaining careers and lifespans.[5] This means that younger politicians stand to be disproportionately affected, whether politically or personally, by the long-term consequences of declining birth rates for social welfare. As the populations of advanced democracies grow older, and the ratio of retirees to workers increases, there is a risk that benefits for future generations will have to be reduced for welfare systems to remain sustainable. Younger politicians may therefore be more favorable toward child welfare spending because it can lead to an increase in fertility rates and female labor force participation, which in turn can reduce the financial burdens borne by younger generations and improve the health of the future welfare system (Iversen and Rosenbluth 2010; Lynch 2006).[6]

If younger politicians discount the future less, then they may be more willing to increase not only overall child welfare spending, but also the amount dedicated to investment. One challenge with making choices about child welfare policy is that politicians confront what Jacobs (2011) calls an "intertemporal dilemma," as current decisions on spending are likely to have far-reaching social and economic implications. On the one hand, elected officials want to minimize taxes and maximize child welfare payouts in the short term. On the other hand, politicians want to dedicate some resources toward long-term investment to enhance the long-run viability of the welfare system and realize potentially greater child welfare payoffs

[5]Several studies explore whether the public's time preferences differ by age. Evidence in support comes from formal models (Alesina and Passarelli 2019), observational studies of consumption and investment patterns (Jianakoplos and Bernasek 2006; Palsson 1996), and experimental work that simulates lottery or gambling scenarios (Albert and Duffy 2012; Gächter, Johnson and Herrmann 2007). For a discussion of the empirical challenges in measuring time preferences, see Jacobs (2011).

[6]Younger politicians may also feel a sense of solidarity with other members of their age group because of their shared life stage and a sense of a common future, which could create a kind of group consciousness that is often associated with women and racial and ethnic minorities (Burden 2007; Mansbridge 1999; Swers 2002). For example, new work in the U.S. context suggest that young people have an age identity, particularly on issues that disproportionately affect younger generations such as climate change (Munger and Plutzer 2023; Munger 2022; Trachtman, Anzia and Hill 2021).

in the future. I expect that the longer time horizons of young politicians will lead them to place relatively greater weight on the long term by increasing investment in child welfare.[7]

> **H3:** Younger politicians will be more likely than older politicians to increase long-term investment in child welfare relative to short-term spending

Finally, a third possible mechanism is that younger politicians will favor greater spending on child welfare due to their closer age to younger voters, which in turn may strengthen their electoral incentives to advocate for policies that appeal to this demographic. Recent work on representation has sought to distinguish between whether politicians promote their groups' interests to a greater extent because of differing internal concerns or external incentives (Broockman 2013; Butler and Broockman 2011; Lowande, Ritchie and Lauterbach 2019). Younger politicians' welfare policies in office may stem from their different life stages and longer time horizons. However, it may also be the case that younger politicians view securing support from younger voters as their best chance at winning an election because they expect it will be more difficult for them to win support from older voters. Younger politicians may therefore strategically increase spending on child welfare to encourage younger voters to turn out and vote for them in the next election.

It is also possible that the impetus for increasing social spending could come more from younger voters rather than younger politicians. Studies have found that voters are more likely to contact representatives who share their descriptive characteristics (Broockman 2014; Gay 2002). There is also evidence that voters prefer candidates closer to them in age (Sevi 2021; Webster and Pierce 2019), and that younger voters in particular are more likely to turn out and support younger candidates in elections (McClean and Ono 2024; Pomante and Schraufnagel 2015). A win by a younger politician could galvanize younger voters

[7]Previous studies have typically treated reelection-minded politicians as gravitating toward short-termism unless institutions such as term lengths, seniority systems, and safe seats can extend their expected time horizons in office (e.g., Dal Bó and Rossi 2011; Jacobs 2011; Simmons 2016). While these studies do not directly address age, some have argued that older politicians will be more favorable toward long-term policies because they are more likely to be protected by seniority systems and safe seats (Kato 1994; Naoi 2015). Holding institutions constant, my expectation is that younger politicians will be more likely to increase long-term investment in child welfare.

into contacting their representative with more welfare requests, which could lead younger politicians to be more supportive toward younger voters' spending priorities.

If younger politicians face stronger electoral incentives to court younger voters, then we might expect the effect of younger politicians on child welfare spending to be conditioned by the relative number of younger voters in their constituency.

> **H4:** Younger politicians in younger constituencies will be more likely than younger politicians in older constituencies to increase spending on child welfare

Research Design

Japan offers an ideal setting to test these hypotheses because of the salience of intergenerational conflicts over welfare, the discretion that mayors have over welfare spending, and the puzzle posed by the variation in welfare services across municipalities that otherwise share similar institutions and socioeconomic characteristics.

Due to its declining birth rate and rapidly aging population, social welfare has become one of the most pressing issues in Japanese politics. Since the 1970s, people who are 65 and over have increased fourfold and now account for over a quarter (28%) of the population. By comparison, the number of children under 15 has fallen by half from 24% to 13% over the same period (Ministry of Internal Affairs and Communications 2020*b*).[8] Assuming these trends continue, Japan's welfare expenditures, already the largest part of the budget, are projected to increase by 60% over the next two decades while the number of workers is set to shrink by 20% (Cabinet Office of Japan 2018).[9] Understanding how politicians allocate welfare resources between people at different life stages is thus crucially important, not only because it affects individual decisions about family planning, savings, investment, and retirement, but also because it has broader consequences for Japan's labor market, economic growth, and fiscal sustainability (Iversen and Rosenbluth 2010; Lynch 2006; Rosenbluth 2007).

[8]While there used to be nine working-age people per person 65 and over in 1970, there are now just two workers to support each senior citizen.

[9]Japan's overall population is also expected to decline from 127 million to 107 million by 2040.

Although the demographic challenges that Japan faces loom large, many scholars agree that the country has been slow to reform the welfare system, that the current system favors the elderly, and that, as a result, many young people are concerned with intergenerational inequality (Estévez-Abe 2008; Kweon and Choi 2022; Lynch 2006; McClean and Ono 2024; Umeda 2022). Some studies have suggested that Japan's elderly-biased welfare system may be related to the large elderly share of the population (Eschker 2003), but others have failed to find a clear link between population aging and expenditures on elderly welfare (Lynch 2006; Tepe and Vanhuysse 2009). In contrast, other scholars have instead pointed to political institutions such as welfare regimes and electoral systems as the primary reasons for why countries like Japan have devoted more benefits toward the elderly than young families (Boling 2015; Estévez-Abe 2008; Lynch 2006).

While prior work has focused on Japan's national government, mayors are centrally involved in nearly every aspect of welfare policy, with the exception of pensions, and municipalities distribute more than half (57%) of all welfare expenditures (Ministry of Internal Affairs and Communications 2020*c*).[10] Higher tiers of government do require that municipalities provide a minimum level of welfare services, but mayors otherwise have significant powers to implement their preferred welfare agenda. In principle, mayors share budget-making responsibilities with municipal assemblies, but in practice, they have broad authority over social spending (Bessho 2012; Tsuji 2017).[11] Mayors are also relatively free to enact their preferred policies because parties are less involved in local than in national politics, and nearly all mayors run as independents during elections.[12] The level of autonomy afforded to mayors thus makes it easier to estimate the effect of a politician's age on social spending without having to account for significant constraints imposed by other political actors.[13]

[10]Although private companies also provide welfare services, most age-related care is either provided or heavily subsidized by the government (Estévez-Abe 2008).

[11]Mayors have the exclusive right to draft the annual budget and can introduce legislation, veto assembly resolutions, and modify the budget when the assembly is not in session.

[12]Over 99% of mayors are ethnically Japanese and 98% are men, making age one of the clearest social cleavages.

[13]In contrast, measuring the effect of a legislator's age on their social policies is more challenging because they have to work closely with other legislators, their party, and often the executive to pass legislation.

Studying the link between the age of mayors and social spending also offers an opportunity to address a puzzle not readily explained by existing theories. Under Japan's unitary government structure, mayors across the country have similar institutional powers and are elected through the same plurality system to serve four-year terms with no term limits. Prior research on institutional incentives would thus suggest that these mayors should pursue similar welfare policies (Estévez-Abe 2008; Lynch 2006). In contrast to these expectations, however, Japanese mayors differ significantly in the level of welfare benefits they provide for young families and the elderly, even across municipalities that otherwise share very similar income levels and age demographics (Fukai 2017; Murayama et al. 2011).

In fact, this combination of mayoral budget authority and variation in municipal welfare services often puts mayors on the front lines of responding to perceived generational inequalities in social welfare. In particular, many young families complain about the substantial variation in childcare availability across municipalities. Despite Japan's declining birth rate, demand for publicly provided childcare has risen sharply in recent years due in large part to the increased participation of women in the workforce (Fukai 2017; Rosenbluth 2007). While some mayors have managed to keep up with demand, however, others have shied away from making the necessary long-term investments in childcare capacity. As a result, long waitlists for public daycare have become a major issue of contention in many municipalities, with some estimates suggesting that as many as 600,000 to 850,000 children have been unable to find spots in recent years (Funakoshi 2013).[14]

The idea that younger mayors in particular promote investing in children matches well with the observed behavior of several mayors who have recently attracted national attention. For instance, when Shuhei Azuma, 28, managed to defeat a 61-year-old incumbent in Shijonawate to become the youngest mayor in Japan, he differentiated himself from his opponent during the campaign primarily by pledging to make increased support for child-rearing the center of his policy platform. Naomichi Suzuki, 31, in his first year as mayor of Yubari,

[14]The Japanese government typically estimates that only 30,000 to 45,000 children are on daycare waitlists, although this number does not include parents who have given up waiting.

abolished the vice mayor position and pressured the central government to restructure the aging mining town's debt repayment schedule to free up money to fund medical care for the city's infants. Suzuki went on to become Japan's youngest governor in 2019. Finally, Naomi Koshi, 37, as mayor of Otsu, built 20 new nurseries to house 2,000 children, a program that successfully eliminated long waitlists for daycare spots in her city. She is also the first mayor in Japan to institute mandatory parental leave for both male and female city employees.

Japan Municipal Elections Dataset

One challenge to the study of local politics in Japan has been the lack of existing datasets on either candidates or outcomes in municipal elections. This absence of systematic data on municipal politicians makes it impossible for researchers to answer questions such as whether the age of mayors affects social spending.

I fill in this gap by building an original, candidate-level dataset of municipal elections held between 1999 and 2021, which I call the Japanese Municipal Elections Dataset (JMED). To construct JMED, I first used web scraping to collect information on elections from a variety of online platforms in Japan that seek to aggregate data from newspapers, election returns, individual users, and candidates themselves.[15] I then supplemented this information by searching through newspaper archives as well as candidate and municipal websites to correct errors and further fill out the demographic information of candidates.

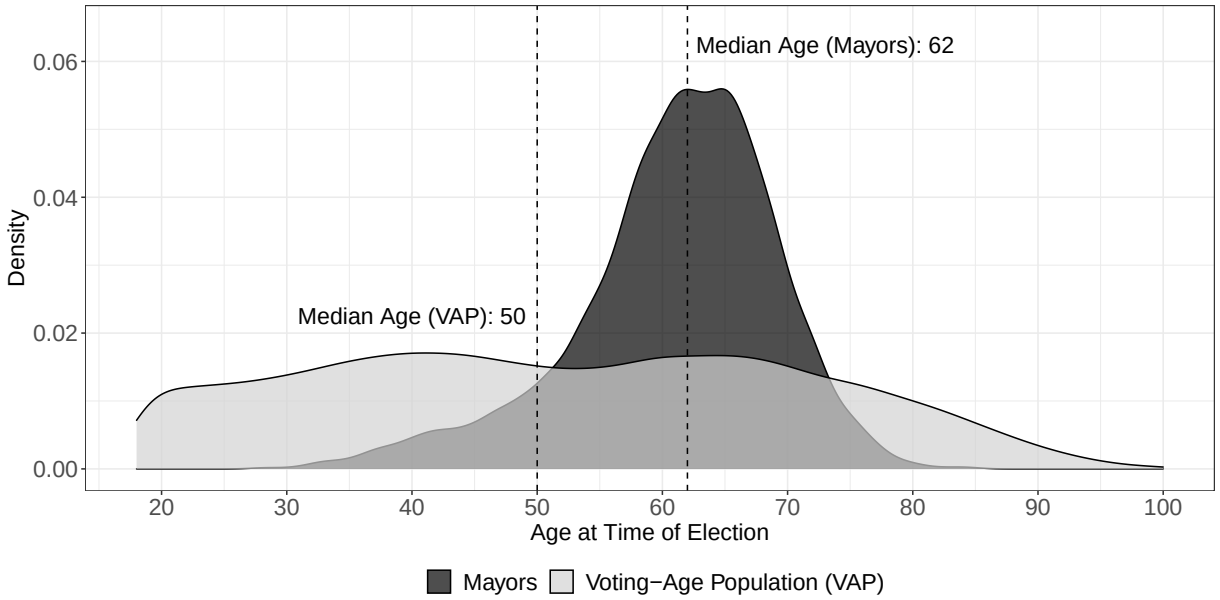
In this article, I focus only on mayoral elections held from 2006 to 2019, which include 6,371 elections across Japan's 1,741 municipalities. I exclude elections between 1999 and 2005, a period in which a significant number of municipalities merged, and also those held after 2019, because of the COVID-19 pandemic's impact on elections and social spending. Both of these factors complicate efforts to link the age of mayors to their social policies.[16]

My final dataset includes information on the names, ages, gender, incumbency, partisan-

[15]The two major online portals that I used are Ichini, *Senkyo dotto komu* (Election Dot-Com), https://go2senkyo.com, and Spiral Co., Ltd., *Seijiyama* (Political Mountain), https://seijiyama.jp.

[16]The Junichiro Koizumi administration also implemented the "Trinity Reforms" in the early 2000s, which changed the nature of municipal finances, including how they funded social welfare programs (Gan 2009).

Figure 2: Age Distribution of Voters and Mayors in Japan



Notes: The figure shows the age distribution of the voting age-population (grey) and elected mayors (black) in Japan (2006–2019). An individual must be 18 to vote and 25 to run for mayor. Sources: JMED; Ministry of Internal Affairs and Communications (2020*b*).

ship, and vote totals for the 12,191 candidates who ran for mayor between 2006 and 2019. As discussed later, I further compile biographical information for a subset of politicians who competed in close races between younger and older candidates, including their education, family structure, party support, and prior experience in politics or government.

Figure 2 compares the age distribution of mayors to that of the voting-age population. To run for mayor, an individual must be at least 25 and eligible to vote in the municipality. Mayors elected during this period range in age from 28 to 85, although most are much older than the minimum age requirement. The median age among mayors is 62 at the time of their election, 12 years older than that of the voting-age population.[17]

Mayors thus tend to be older than most of their constituents. As Figure 2 shows, the greatest gap in descriptive representation occurs for people under 50, who make up half the voting-age population but just 10% of mayors. By contrast, people in their late 50s, 60s, and early 70s are significantly overrepresented in mayor's offices. For example, the number

[17]The median age of candidates is also 62, and the age distribution is very similar to Figure 2 (Figure A1).

Figure 3: Geographic Distribution of Mayors Under 50 in Japan

Notes: Map shows the 341 of 1,741 municipalities that elected a mayor under 50 (2006–2019). See Figure A3 for larger map including Okinawa. Sources: JMED; Database of Global Administrative Areas (2018).

of mayors elected between the ages of 60 and 65 (2,088) during this period was almost 700 times greater than the number of mayors under 30 (three), over 18 times greater than the number under 40 (113), and nearly four times greater than the number under 50 (569).[18]

While young people are underrepresented in mayoral positions, many in Japan have experienced living in a municipality governed by a younger mayor. As shown in Figure 3, 341 (20%) of Japan's 1,741 municipalities (spanning across 46 of 47 prefectures) elected at least one mayor under 50 between 2006 and 2019.[19] Compared to municipalities with mayors in their 50s or older, municipalities with younger mayors tend to have younger populations,

[18]There was a slight increase in the percentage of mayors under 50 over this period (Figure A2).

[19]More than twice as many municipalities (739, or 42%) had at least one candidate under 50 (Table A1).

are more populous, and are more likely to be located in metropolitan areas.[20] The decisions made by mayors in their 20s, 30s, and 40s have thus affected a large swath of Japan's population, including approximately 48 million (38%) of the country's 126 million residents.

Municipal Social Welfare

To study how a mayor's age affects their social spending, I merge JMED with detailed municipal budget reports published by the Japanese government (Ministry of Internal Affairs and Communications 2020*a*).[21] A benefit of this data is that municipalities distinguish between discretionary spending, which is allocated during the annual budget process, and mandatory spending, which is typically ongoing and includes entitlement programs set by the central government (such as the child allowance system), interest payments on debt, and salaries for government personnel.[22] This level of detail enables me to focus only on discretionary spending, where the mayor has more influence.[23]

Another benefit is that municipalities use discrete budget categories to account for discretionary social spending targeted at different age groups. The "Child Welfare" category includes spending on parental leave benefits, centers for maternity and daycare support, subsidies for parents, and benefits for children with disabilities. The national government disburses pensions, but the "Elderly Welfare" category includes public expenditures on nursing services, subsidies, and facilities for the elderly.[24]

To test the time horizons mechanism (H3), I use the two largest categories within discretionary spending, "Subsidies" and "Investment," as my proxies for short-term spending and long-term investment. These subsidies typically take the form of direct payments to resi-

[20] Candidates and mayors under 50 are significantly more common in the Kanto and Kansai regions, which include Japan's two largest metropolitan areas surrounding Tokyo and Osaka, respectively, but are relatively less common in the less dense regions of Hokkaido, Tohoku, and Shikoku (Tables A1 and A2).

[21] Social welfare is the largest expenditures category of municipal budgets (36%).

[22] Under the central government's child allowance system, parents of children under 15 can receive monthly payments (*jidou teate*). While the rules governing these payments have changed over time, the amount that parents receive depends on the number of children, their age(s), and the household's income level.

[23] Municipal spending on welfare is typically evenly divided between mandatory and discretionary spending.

[24] Although Japan's overall welfare system is biased toward the elderly (Lynch 2006), municipalities on average spend more per capita on child welfare than elderly welfare, though there is significant heterogeneity.

dents or funds used to reduce the costs that the public pays to access welfare services, which mayors can use to deliver quick social gains to their constituents. In contrast, the investment category consists almost entirely of public works spending used to construct, expand, or upgrade childcare and elderly care centers. These projects are costly in the short term and can take several years (and multiple terms) to complete, but have the potential of greater long-term social returns by expanding the quality and capacity of welfare infrastructure.

Given the wide variation in social spending and population demographics across municipalities, I focus on the natural logarithm of spending per capita to reduce the possibility that a few outliers could drive my results.[25] Using the government's age cutoffs for who qualifies for welfare benefits, I divide child welfare expenditures by the population under 15 years old and elderly welfare expenditures by the population 65 years and older.

Regression Discontinuity Design

Identifying the causal effect of a municipality electing a younger mayor on social spending is no easy task. As discussed earlier, municipalities with younger mayors differ in observable characteristics (e.g., population size and age demographics) from those with older mayors. While these factors could be controlled for using multivariate regression, it is unlikely that such an analysis would be able to account for other, unobservable differences between these municipalities that could affect both the age of mayors and welfare expenditures.

To address these concerns, I use a regression discontinuity design (RDD) to analyze close elections between younger and older mayoral candidates. The core assumption of this design is that in close single-member district elections, in which the winner changes discontinuously at 50% of the top-two candidate vote share, which candidate wins is thought to be as-if randomly assigned so long as there is some unpredictability in the ultimate vote (Lee 2008). Because of this as-if random assignment, municipalities that narrowly elect the younger candidate should be largely similar to municipalities where the older candidate barely wins

[25] I adjust spending into 2015 yen using the consumer price index. The results are similar for non-logged values of spending.

in both observable and unobservable characteristics. As a result, this design enables me to causally identify the local average treatment effect of a municipality electing a young mayor on future outcomes such as social spending.[26]

While close-election RDDs have been used to estimate the effects of municipalities electing mayors that vary by gender (Ferreira and Gyourko 2014), partisanship (De Benedictis-Kessner and Warshaw 2016; Gerber and Hopkins 2011), and race (Hopkins and McCabe 2012) on policy outcomes, one challenge to adapting this design to study age is that identifying who qualifies as a relatively "young" candidate can vary depending on the cultural and institutional setting (Joshi 2013; Stockemer and Sundström 2022). In the context of Japanese mayoral elections, I begin with an age cutoff of 50 because it has several nice features. As discussed earlier, 50 represents the median age of the voting-age population and the youngest 10% of elected mayors (Figure 2). A cutoff at 50 also marks a salient age for preferences regarding social spending, as candidates in their late 20s, 30s, and 40s represent the typical age range of young parents who receive child welfare benefits.

In the main analyses, I estimate the effect of electing a mayoral candidate under 50 rather than a candidate 50 or older on social spending, where the average age gap between candidates is 19.4 years. After presenting these results, I then test how the effect size varies across alternative age cutoffs for younger mayors. Following the best practices outlined in Cattaneo, Idrobo and Titiunik (2019), I model these relationships using local linear regression, an optimal bandwidth chosen to minimize the mean square error, standard errors clustered by municipality, and robust confidence intervals adjusted to account for remaining bias. To increase statistical efficiency, I estimate the effect of a mayor's age on changes in spending rather than on levels (Lee and Lemieux 2010). The results for the first difference of my logged dependent variable can be interpreted approximately as the percentage change in expenditures due to electing a mayor under 50.[27] My main analyses focus on the differences

[26]An important distinction is that this design enables me to identify the effect of electing a younger mayor, holding constant other characteristics of the municipality, but not the effect of a mayor's age, holding constant other characteristics of the mayor (Bertoli and Hazlett 2023; Marshall 2022).

[27]Table A3 provides summary statistics for the RD analyses.

in spending on child and elderly welfare between the year before the election and the year after the election.[28]

Interviews With Mayors and Bureaucrats

Finally, I draw on interviews conducted with mayors and municipal bureaucrats during fieldwork in Japan between October 2018 and July 2019 to supplement the RD analyses. Interview subjects were randomly selected via JMED, although I oversampled municipalities that met three criteria: i) municipalities with younger mayors (under 50 at the time of their election); ii) municipalities with mayors whose election was part of my RD analyses; and iii) municipalities within a few hours train ride from Tokyo or Osaka (for practical purposes). I contacted the offices of local officials by email to request an appointment and continued until I reached my target goal of at least 30 participants. In total, I interviewed 15 mayors and 20 bureaucrats working in social welfare departments across 20 municipalities. All interviews were conducted in Japanese and lasted an average of 45 minutes.[29]

Results

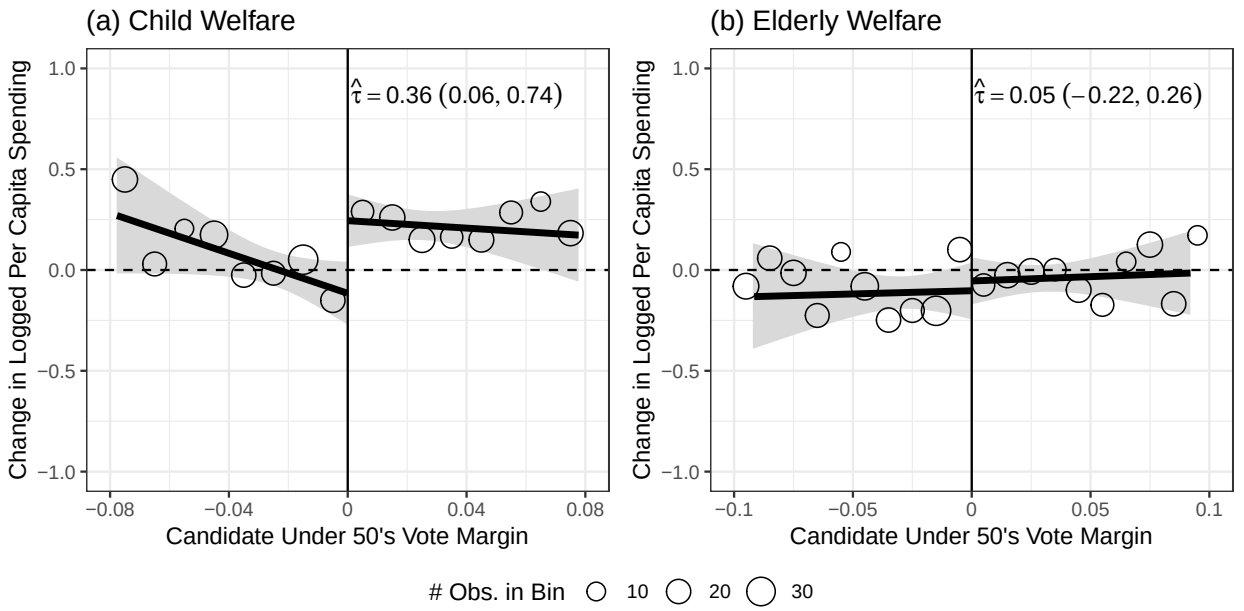
Do municipalities that elect younger mayors allocate more government resources than those with older mayors toward meeting the welfare needs of their younger constituents? Figure 4 presents a graphical representation of the main RD results.[30] The results for child welfare are in panel (a) and for elderly welfare in panel (b). The y-axis in each plot is the change in logged per capita spending for each welfare category from the year before to the year after the mayoral election, and the x-axis is the vote margin for the candidate under 50 in that election. The circles represent bins of the raw data and are sized according to the number of observations. On each side of the hypothesized discontinuity, where the margin of victory is equal to zero, I fit lines using a local linear smoother. The grey shaded areas represent

[28]Following De Benedictis-Kessner and Warshaw (2016), I focus on the year after the election to balance between giving the new mayor time to have an impact on the budget and endogenous responses from other political actors to the mayor's influence that may arise later in the term.

[29]See Appendix for additional details on interviews.

[30]I take inspiration from De Benedictis-Kessner and Warshaw (2016) in plotting my RD results.

Figure 4: Effect of Electing a Mayor Under 50 on Social Spending



Notes: The figure presents the RD estimates ($\hat{\tau}$) of electing a mayor under 50 on the change in logged per capita discretionary spending on (a) child welfare and (b) elderly welfare.

95% confidence intervals. Lastly, the RD estimate ($\hat{\tau}$) is provided for each figure with robust confidence intervals in parentheses.

Looking first at panel (a), I find that municipalities that elect younger mayors increase discretionary spending on child welfare relative to those with older mayors. Visually, this effect of electing a mayor under 50 can be seen in the large positive "jump" between the two fitted lines at the election threshold. Municipalities that narrowly elect the candidate under 50 increase their spending on child welfare by about 36% relative to municipalities that barely elect the candidate 50 or older. This increase represents a little over one half of a standard deviation, an effect size typically viewed as moderate (Cohen 1992). In the average municipality in the RD analysis, it is equivalent to spending nearly 21,000 yen ($192) more per child under 15 or 365 million yen ($3.4 million) more in total.[31]

By comparison, panel (b) indicates that the election of a mayor under 50 does not lead to a corresponding decrease in a municipality's discretionary spending on elderly welfare.

[31]Conversions from yen to dollars are calculated using the average exchange rate in 2019 (1$ = 109¥).

Unlike panel (a), there is no noticeable jump at the election threshold. The RD estimate is actually positive, although it is not statistically significant.

Do these effects vary greatly depending on the selected age cutoff for a younger mayor? In the Appendix, I find that the results are largely consistent across alternative modeling choices (Figure A5). The RD estimates of younger mayors on child welfare spending remain statistically significant for cutoffs between the ages of 42 and 52, with the effect size ranging from 25% (cutoff: 52) to 42% (cutoff: 43), although below age 42 the number of observations starts to become too small to reliably estimate an RD effect. Similarly, the estimated effect of electing a young mayor on elderly welfare spending remains insignificant across age cutoffs. Additional tests also show that the results are not driven by candidates close to one another in age who happen to fall just on either side of the chosen age cutoff (Table A6).

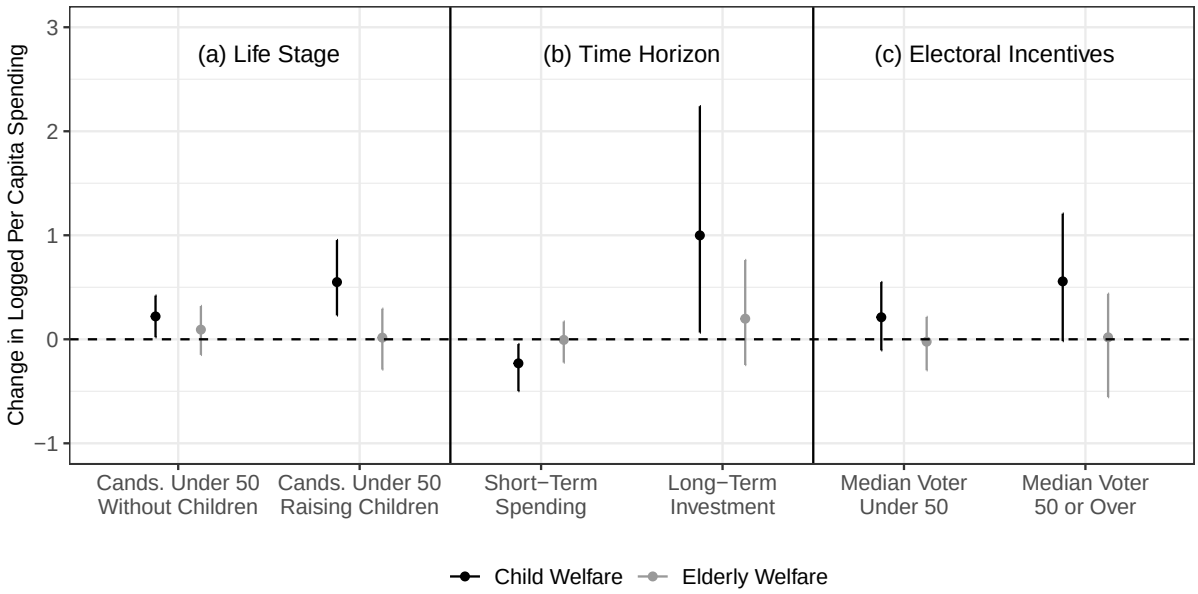
Together, these results offer support for H1. Municipalities with younger mayors are more likely than those with older mayors to shift social spending toward increased benefits for young families. However, it is notable that this shift is primarily driven by younger mayors increasing spending on child welfare rather than taking support away from elderly welfare.

Mechanisms

Next, I turn to evaluating the three proposed mechanisms. For life stage, I first divide the full sample in two by whether the candidate under 50 has children and then test whether the RD estimates differ across subgroups. For time horizons, I continue with the full set of elections and contrast the effect of narrowly electing a mayor under 50 on short-term spending with the corresponding effect on long-term investment. For electoral incentives to target young voters, I again split my sample of elections by whether the median voter in the municipality is under 50 and then compare the two RD estimates.

Figure 5 shows the results for child welfare (black) and elderly welfare (grey) spending. To conserve space and ease interpretation, I plot only the RD estimates and robust 95% con-

Figure 5: Mechanisms



Notes: The figure presents the RD estimates of electing a mayor under 50 on the change in logged per capita spending on child welfare (black) and elderly welfare (grey) across three panels. Panel (a) divides the main sample by whether the candidate under 50 has children. Panel (b) compares expenditures that were directed toward short-term spending with that toward long-term investment. Panel (c) divides the main sample by whether the median voter in the municipality is under 50.

fidence intervals for each analysis across three separate panels. As with the earlier analyses, these models all use local linear regression, an optimal bandwidth selected to minimize the mean square error, and standard errors clustered by municipality.

Beginning first with child welfare expenditures, panel (a) indicates that whether a younger mayor is raising young children has consequences for their spending priorities (H2). Mayors under 50 raising children increase spending on child welfare by approximately 55%. This estimate is over two times larger than that for mayors under 50 without children (22%), and the difference between the two estimates is statistically significant.

Second, panel (b) suggests that the longer time horizons of younger mayors are also important (H3). Municipalities that elect mayors in their 20s, 30s, and 40s double their long-term investment in child welfare relative to those with mayors 50 and older (RD estimate: 100%). In doing so, municipalities with younger mayors also decrease short-term spending

by about 23% relative to those with older mayors.[32] These results suggest that younger mayors are even willing to reduce short-term benefits for young families in order to better fund long-term investments in infrastructure.

Third, panel (c) does not find that having a relatively greater number of younger voters in the municipality increases the effect of younger mayors on child welfare spending (H4). Contrary to the hypothesized relationship, the RD estimate is actually larger for mayors under 50 when the median voter in their municipality is 50 or over (56%) than when the median voter is also under 50 (21%), although the difference between the two groups is not statistically significant.[33]

Finally, it is notable that the effect of younger mayors on elderly welfare spending remains insignificant across the subgroups featured in panels (a), (b), and (c). In other words, whether a younger mayor is raising young children, is focused on short-term spending or long-term investment, or is in a younger or older municipality does not have a differential effect on the attention they pay to elderly welfare compared to older mayors.

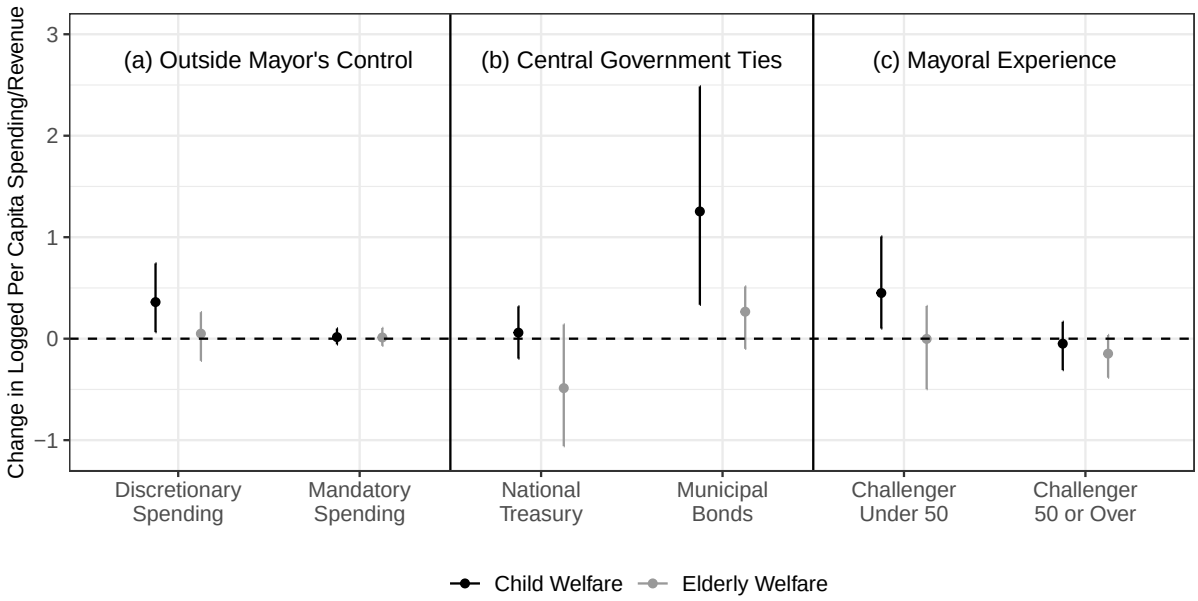
In sum, I find more evidence for mechanisms related to characteristics of the mayors than their municipalities. The results suggest that younger mayors increase child welfare spending because of the personal concerns they bring to office (i.e., a different life stage and longer time horizon) rather than a greater electoral incentive to cater to young voters.

Ruling Out Alternative Explanations

In the Appendix, I conduct several analyses to assess the sensitivity of the main findings. The RD results are robust to alternative modeling choices such as using higher-order polynomials, different bandwidths, and including control variables and year fixed effects (Tables A5 and A7). As a falsification test for the as-if random assumption of the RDD, I also show that municipalities on either side of the election threshold are balanced in terms of their pre-existing population size, age demographics, and social welfare infrastructure and

[32]These correspond to medium-size standardized effects of 0.53 and 0.40 standard deviations, respectively.
[33]The interaction effect remains insignificant if the continuous version of voter median age is used instead.

Figure 6: Ruling Out Alternative Explanations



Notes: The figure presents the RD estimates of electing a mayor under 50 (panels a and b) or a challenger candidate (panel c) on the change in logged per capita spending (or revenue) for child welfare (black) and elderly welfare (grey) across three panels. Panel (a) compares discretionary and mandatory spending. Panel (b) compares revenues from national treasury disbursements with that from municipal bonds. Panel (c) estimates the effect of electing a challenger candidate using a new sample of close elections between challengers and incumbents, which has been divided by whether the challenger is under 50.

expenditures (Table A4). A McCrary (2008) density test further indicates that there is no evidence of sorting near the threshold, which suggests that younger and older candidates do not differ in their ability to manipulate their vote share in close elections (Figure A4).

In addition to the standard RD robustness checks, I seek to rule out three potential alternative explanations. Figure 6 shows the results of these tests, using a similar presentational style as Figure 5.

The first possibility is that the narrow election of a younger mayor could coincide with social changes outside of the mayor's control that affect welfare spending. To address this potential threat, I use placebo tests to show that younger mayors only affect changes in discretionary spending and not mandatory spending (panel a), the latter of which is predominantly determined by the central government according to formulas based on municipal income and demographics. The lack of any significant effects for mandatory spending suggest

that my findings capture the discretion of younger mayors as opposed to some coinciding change in national welfare policy or the socioeconomic characteristics of municipalities.

Another possible explanation is that younger and older mayors may differ in their ties to the central government, which represent a key revenue source for municipalities (Catalinac, Bueno de Mesquita and Smith 2020) and could affect each mayor's ability to fund welfare programs. However, in panel (b), I do not find that mayors under 50 receive significantly more disbursements from the national treasury than mayors 50 or older for either child welfare or elderly welfare.[34] Instead, younger mayors support their increased spending and investment in child welfare by reallocating money within the budget and issuing municipal bonds to fund infrastructure development, the latter of which I highlight in panel (b) (see also Table A11).[35]

Finally, the last potential threat relates to the recognition that age, like other politician characteristics, is a bundled treatment (Bertoli and Hazlett 2023; Marshall 2022). Mayors of different ages may also share other characteristics in common, and it could be these factors rather than age that drive the observed effects on social spending. In the Appendix, I again rely on RD tests to assess whether there are any discontinuities in mayoral-level covariates at the election threshold. While younger and older mayors do differ in ways apart from their age, most differences are not significant.[36] The one exception, as suggested by Figure 1, is that younger mayors are more likely to be entering office with less experience serving as mayor.

Is this difference in mayoral experience the main driver of the observed age differences in social spending? To assess this possibility, I first focus only on elections where the top-two candidates featured an incumbent facing off against a challenger candidate, and then

[34]More generally, I find no evidence that a mayor's age significantly affects other budget categories, whether expenditures or revenues (Table A10).

[35]The greater willingness to issue municipal bonds is notable because it suggests that younger mayors are also more likely to shift some of the costs of their child welfare policies toward the longer term.

[36]Compared to mayors 50 and older, mayors under 50 are less likely to be women, tend to be more educated, receive less party support, and have more experience serving as a bureaucrat in national as opposed to municipal government. The lack of significant differences along these dimensions in the RD tests, however, means that it is unlikely that they are behind the observed patterns in welfare expenditures.

estimate the RD effect of narrowly electing a challenger (i.e., new mayor) over an incumbent. In panel (c), I then split this sample by whether the challenger candidate is under 50 years old. I find that electing a challenger under 50 has a significant and positive effect on child welfare spending, whereas electing a challenger that is 50 or older has no similar effect. As a result, it is unlikely that the effect of age is purely a proxy for past mayoral experience.[37]

Evidence from Interviews with Mayors and Bureaucrats

Lastly, interview evidence collected during fieldwork in Japan offers further insights into the findings from the quantitative analyses.

The idea that a mayor's age can shape their social policies resonated with both the mayors and municipal bureaucrats who spoke with me. In fact, local officials were near unanimous in emphasizing the central role of mayors in determining a municipality's welfare expenditures. As one mayor put it, "Mayors have four key powers concerning welfare policy: making policy decisions, directing human resources to carry out that decision, organizing the budget to fund it, and, perhaps most critically, convincing the public that the policy is necessary."[38] In another interview, local bureaucrats praised the leadership of their younger mayor in successfully increasing investment in child welfare, "from finding the necessary funds, land, and teachers to open a new childcare center to addressing concerns from nearby residents about increased noise and traffic."[39] Other bureaucrats spoke about daycare projects that "never got past the planning stages or failed partway through" in neighboring municipalities, where older mayors were "not sufficiently concerned with the daycare shortage problem to take on the political risk of upsetting older homeowners."[40]

As for potential mechanisms, the importance of a mayor's life stage came through often in my interviews. As one younger mayor succinctly put it, "I feel that my age gives me insights into the challenges faced by young parents. I myself had difficulty finding a daycare spot for

[37]Table A7 further shows that the main RD results hold when controlling for past mayoral experience.
[38]Author interview, October 25, 2018.
[39]Author interview, October 18, 2018.
[40]Author interview, July 10, 2019.

my child, as did many of my friends."[41] In contrast, the older mayors I met with seemed to draw different conclusions from their own experiences as parents. One older mayor, for instance, acknowledged that they did not understand "why young people are complaining about a lack of child care support" given that the "current welfare benefits are already much more generous than they were when we raised our children."[42]

In many of my interviews, when mayors discussed how their ages affect their preferences and priorities, their focus was more on time horizons rather than the allocation of welfare between age groups. Younger mayors reported feeling that their age gives them a "stronger sense of crisis about Japan's population shrinking in the future."[43] They talked about "implementing policies that are sustainable for the next 20 to 30 years" and the "downstream benefits to investing in child welfare not only for the low birth rate problem, but also for increasing the number of women who work and encouraging more people to move to [their] municipality."[44] Older mayors, on the other hand, felt that their "age and life experience gave [them] a clearer sense of what is achievable within a mayor's term," and said that they could have the "greatest impact by focusing on the immediate needs of their constituents" in confronting the challenges associated with an aging population.[45]

Finally, interviews also helped to shed light on some of the findings that contradicted my initial hypotheses. For example, regarding the null effect of younger mayors on elderly welfare spending, every mayor spoke openly about the disproportionate power of older voters in elections and the difficulty in attempting to transfer welfare resources from the elderly to young families. One younger mayor even described directly asking a group of older residents if they would be willing to accept less welfare to free up funds for children but found "such strong opposition that [they] decided to find money in other areas of the budget instead."[46] As for the lack of support for the electoral incentives mechanism, several younger mayors

[41] Author interview, July 8, 2019.
[42] Author interview, July 11, 2019.
[43] Author interview, October 31, 2018.
[44] Author interviews, October 11 and 15, 2018.
[45] Author interviews, October 5 and 26, 2018.
[46] Author interview, October 24, 2018.

that I interviewed did recognize that they have a comparative advantage in appealing to younger voters in elections, such as through their greater use of social media.[47] At the same time, even younger mayors acknowledged that they were contacted much more often by older voters, that it was mostly older voters who turned out at their campaign events, and that it was mostly older constituents who were members of their official support groups (*koenkai*).[48]

Discussion

There is significant evidence that a politician's race, gender, class, and sexual orientation can affect the extent to which they advocate on behalf of groups who share similar characteristics. In this article, I provide evidence that the descriptive representation of young people in political institutions can also matter for the substantive representation of their interests in policy outcomes. The election of a younger mayor in Japan can lead municipalities to greatly increase their discretionary spending on child welfare, especially through long-term investments in young families, but does not appear to affect elderly welfare spending.

These findings suggest that the age bias of political institutions deserves further attention, particularly in societies that confront the challenges of declining birth rates and aging populations. On the one hand, individuals who are worried about intergenerational conflicts over social welfare might view the asymmetric effects of a politician's age on welfare policies as good news. Younger mayors do not seek to defund programs for the elderly to increase benefits for young families. On the other hand, the results and interviews reinforce past studies on the disproportionate power of the elderly in elections, casting doubt on whether young people can garner sufficient support for issues that are important to them in settings where they lack descriptive representation—as is often the case.

This article also contributes to the literatures on elite behavior and representation by showing how a politician's characteristics can affect how they allocate government resources not only between groups with similar characteristics but also over time. Age is thus unique

[47] Author interview, July 2, 2019.
[48] Author interviews, October 24, 2018; July 8, 2019.

from other elite characteristics in its effect on the time horizons of politicians. Future studies should investigate the extent to which age can similarly affect the decision making of politicians on other issues that involve trade-offs between short-term costs and long-term social returns such as climate change, government debt, and trade protectionism. Similarly, researchers should explore how the age of elected officials interacts with institutions that affect their time horizons, such as term limits.

In drawing broader lessons for policy making and existing theories, it is important to address the generalizability of these findings. Concerns about generalizability are common to RDDs, which have high internal validity but can struggle with external validity. The advantage of my design is that I can estimate the causal effect of electing a younger mayor on welfare expenditures among municipalities that otherwise should be very similar in observable and unobservable characteristics. However, the disadvantage is that the RDD only estimates the local average treatment effect for a subset of close elections between younger and older candidates.[49] In the Appendix, I test whether similar patterns emerge if I instead analyze the full sample of 6,371 elections using fixed effects regression (Table A12). Similar to the RD results, I find that mayors under 50 increase spending on child welfare by over 7% but do not have a significant effect on expenditures for elderly welfare. While these estimates are not causally identified, they corroborate the external validity of the RD findings by suggesting that younger mayors in settings beyond close elections between younger and older candidates can have a significant, if smaller impact on social spending for young families.

With that being said, more research is needed to explore the extent to which the results are generalizable beyond Japan. Japan is a rapidly aging society where social welfare is an especially salient issue and politicians tend to be much older than the average constituent. Like Japan, other advanced democracies such as Germany and Italy have rapidly aging populations, while South Korea and the United States have few young people in public office.

[49]Notably, prior research has suggested that the uncertainty of competitive elections should shorten the expected time horizons of politicians and discourage investment. Finding a substantial effect of a mayor's age on child welfare investment following close elections in Japan, an arguably demanding test, may indicate that age differences among politicians will translate to other settings.

A question for future studies is whether we see similar age differences among elected officials in their welfare policies in these settings, and how this compares to politicians in countries with much younger populations, such as Brazil and India, or countries where younger people have much greater descriptive representation in political institutions, such as Sweden and Denmark.

Similarly, researchers should look into the influence of age on elite behavior across other political offices and issue areas. While I focus on mayors to better estimate the causal effect of a constituency electing a younger representative on social spending, other studies could test whether younger legislators are more likely than their older colleagues to serve on committees that oversee childcare issues or respond to requests for welfare services from younger citizens. Beyond welfare, we know from other research that individuals of different ages often have different views on a wide range of issues, including same-sex marriage, immigration, gender equality, global governance, and environmental protection (Munger 2022; Wattenberg 2007). Future work should explore the extent to which younger politicians adopt different positions on these issues in office than older politicians.

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Appendix

Contents

1 Mayoral Elections in Japan

1.1 Candidates and Mayors

Figure A1: Age Distribution of Candidates and Mayors (2006–2019)

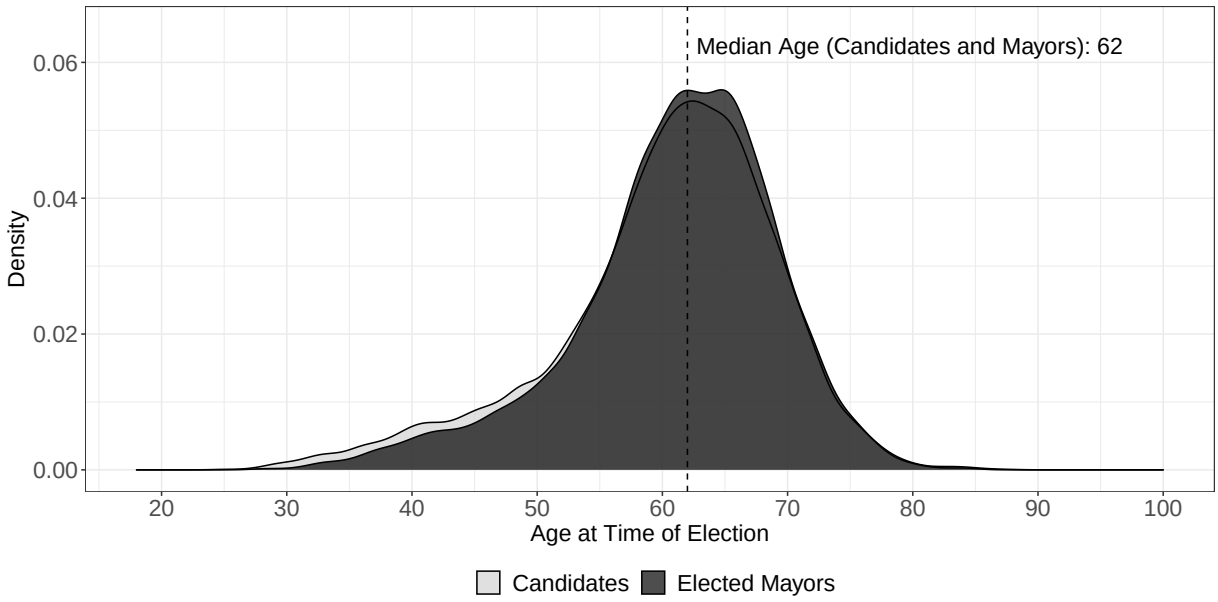
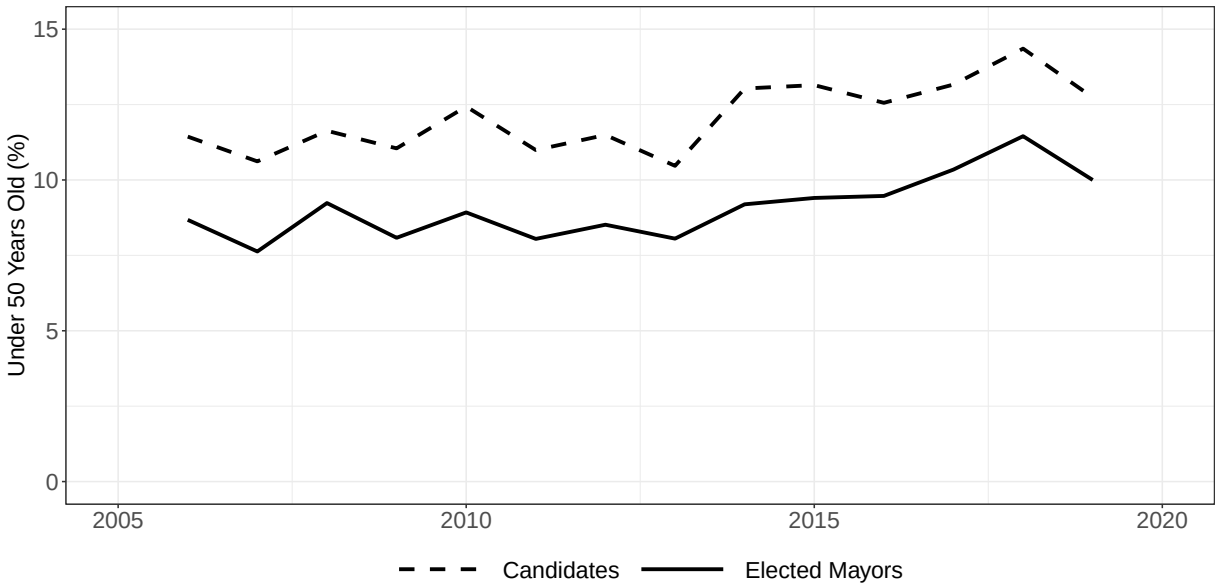


Figure A2: Candidates and Mayors Under 50 (2006–2019)



Notes: JMED.

Figure A3: Geographic Distribution of Mayors Under 50 in Japan (Including Okinawa)

Notes: Map shows the 341 (of 1,741) Japanese municipalities that elected at least one mayor under 50 (2006–2019). Sources: JMED; Database of Global Administrative Areas (2018).

1.2 Municipalities

Table A1: Municipalities With Candidates Under 50 (2006–2019)

	At Least One Candidate Under 50					
	Yes		No			
	Mean	Std. Dev.	Mean	Std. Dev.	Diff. in Means	Std. Error
Population						
Total (thousands)	127.623	(270.175)	31.981	(55.196)	95.642***	(10.091)
% Under 15	0.119	(0.023)	0.113	(0.026)	0.007***	(0.001)
% 15 to 64	0.572	(0.052)	0.544	(0.052)	0.029***	(0.003)
% 65 and Over	0.308	(0.068)	0.342	(0.071)	–0.035***	(0.003)
Region						
Hokkaido	0.064	(0.244)	0.130	(0.337)	–0.067***	(0.014)
Tohoku	0.077	(0.267)	0.170	(0.375)	–0.092***	(0.015)
Kanto	0.261	(0.440)	0.122	(0.328)	0.139***	(0.019)
Chubu	0.184	(0.388)	0.181	(0.385)	0.003	(0.019)
Kansai	0.168	(0.374)	0.103	(0.305)	0.064***	(0.017)
Chugoku	0.057	(0.232)	0.065	(0.247)	–0.008	(0.012)
Shikoku	0.039	(0.194)	0.066	(0.249)	–0.027**	(0.011)
Kyushu	0.150	(0.358)	0.162	(0.369)	–0.012	(0.018)
Municipalities	739		998		1,741	
Prefectures	47		47		47	

Notes: JMED; Ministry of Internal Affairs and Communications (2020*b*). *p<.1; **p<.05; ***p<.01.

Table A2: Municipalities With Mayors Under 50 (2006–2019)

	At Least One Mayor Under 50					
	Yes		No			
	Mean	Std. Dev.	Mean	Std. Dev.	Diff. in Means	Std. Error
Population						
Total (thousands)	133.752	(306.158)	57.878	(140.441)	75.874***	(17.047)
% Under 15	0.120	(0.023)	0.114	(0.025)	0.006***	(0.001)
% 15 to 64	0.573	(0.049)	0.552	(0.054)	0.021***	(0.003)
% 65 and Over	0.307	(0.066)	0.332	(0.072)	–0.026***	(0.004)
Region						
Hokkaido	0.071	(0.257)	0.110	(0.312)	–0.039**	(0.016)
Tohoku	0.077	(0.267)	0.143	(0.350)	–0.066***	(0.017)
Kanto	0.245	(0.431)	0.166	(0.372)	0.079***	(0.025)
Chubu	0.159	(0.366)	0.188	(0.390)	–0.028	(0.022)
Kansai	0.204	(0.403)	0.113	(0.317)	0.090***	(0.023)
Chugoku	0.050	(0.219)	0.064	(0.246)	–0.014	(0.014)
Shikoku	0.047	(0.212)	0.057	(0.231)	–0.009	(0.013)
Kyushu	0.147	(0.355)	0.160	(0.366)	–0.012	(0.022)
Municipalities	341		1,400		1,741	
Prefectures	46		47		47	

Notes: JMED; Ministry of Internal Affairs and Communications (2020*b*). *p<.1; **p<.05; ***p<.01.

2 Regression Discontinuity Design

2.1 Summary Statistics

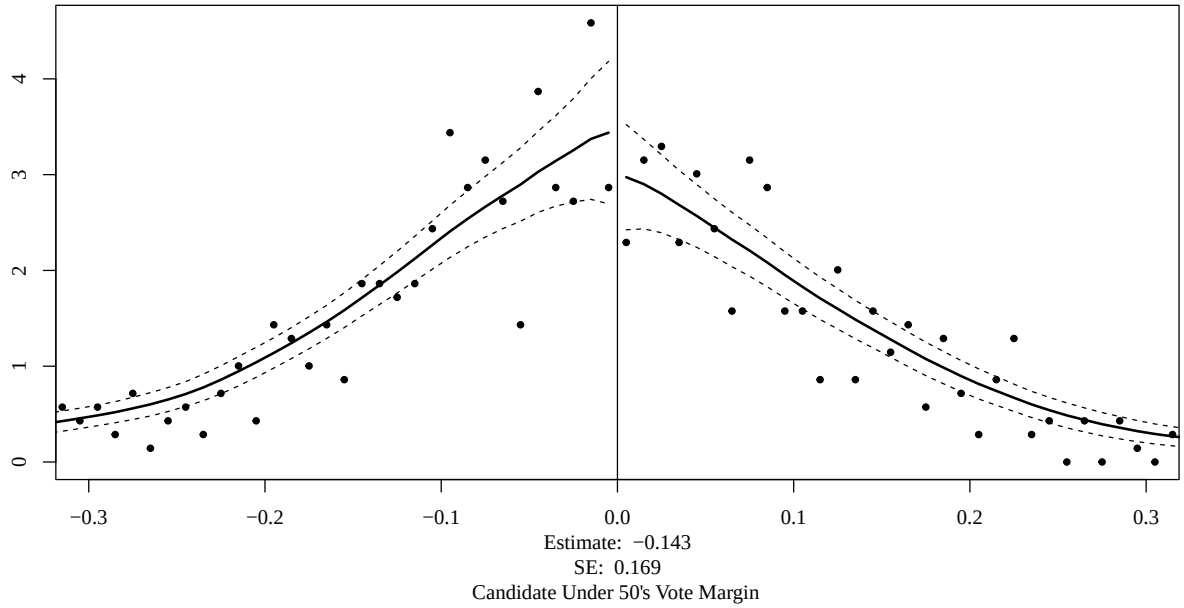
Table A3: Summary Statistics for Regression Discontinuity Analysis

	Mean	SD	Min	Max	N
Candidate Under 50's Vote Margin	−0.016	(0.148)	−0.424	0.440	698
Δ Child Welfare Spending	0.144	(0.533)	−2.070	3.188	698
Δ Short-Term Spending	0.126	(0.556)	−4.917	2.621	698
Δ Long-Term Investment	0.220	(1.746)	−6.229	6.115	698
Δ Elderly Welfare Spending	−0.060	(0.495)	−2.588	2.262	698
Δ Short-Term Spending	−0.044	(0.417)	−2.961	3.076	698
Δ Long-Term Investment	0.023	(1.026)	−3.959	3.940	698

Notes: Mayoral elections where one candidate is under 50 years old. Variables show the change in logged per capita spending on child and elderly welfare from the year before to the year after the election.

2.2 Robustness Checks

Figure A4: McCrary Density Test



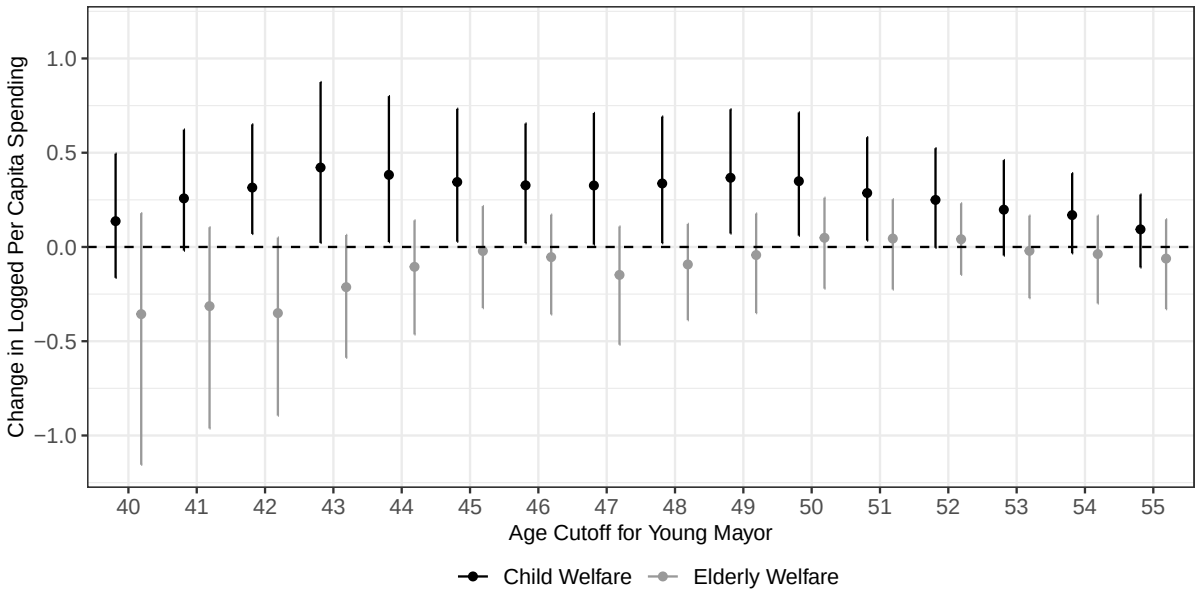
Notes: Plot shows the density of the candidate under 50's vote margin is continuous at the threshold.

Table A4: Balance Checks for Pre-Treatment Covariates

	Mayors Under 50 vs. Mayors 50 and Over			
	RD Estimate	SE	Bandwidth (h)	N
Population				
Total (thousands)	−66.741	(82.202)	0.104	410
% Under 15	−0.005	(0.006)	0.067	264
% 15–64	−0.010	(0.011)	0.078	310
% 65 and Over	0.015	(0.016)	0.073	288
Region				
Hokkaido	0.003	(0.072)	0.085	335
Tohoku	–0.039	(0.050)	0.109	419
Kanto	–0.004	(0.095)	0.089	348
Chubu	–0.225	(0.105)	0.061	247
Kansai	0.068	(0.094)	0.097	384
Chugoku	0.038	(0.041)	0.128	462
Shikoku	–0.049	(0.040)	0.073	286
Kyushu	0.097	(0.086)	0.096	382
Social Spending (millions ¥)				
Child Welfare	−563.950	(542.075)	0.086	339
Short-Term Spending	−72.980	(135.318)	0.093	370
Long-Term Investment	−189.625	(158.523)	0.088	345
Elderly Welfare	−363.050	(390.140)	0.104	409
Social Infrastructure				
Daycare Centers	−3.221	(11.275)	0.106	347
Elderly Care Centers	−0.722	(2.588)	0.104	373

Notes: All models use local linear regression, where h represents the optimal bandwidth chosen to minimize mean square error. Standard errors clustered by municipality are in parentheses. Social spending and infrastructure are for the year before the election. *p<.1; **p<.05; ***p<.01.

Figure A5: Effect of Young Mayor on Social Spending Across Age Cutoffs



Notes: The figure presents the RD estimates of electing a mayor under a given age cutoff on the change in logged per capita spending on child welfare (black) and elderly welfare (grey).

Table A5: Effect of Electing a Mayor Under 50 on Social Spending

DV:	Δ Child Welfare Spending				Δ Elderly Welfare Spending			
Specification:	Local Linear		Quad.	Cubic	Local Linear		Quad.	Cubic
Bandwidth:	h	$2h$	.2	.2	h	$2h$	.2	.2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mayor Under 50	.361**	.290***	.367***	.457**	.050	.098	.091	−.071
	(.146)	(.098)	(.133)	(.194)	(.105)	(.082)	(.111)	(.145)
Bandwidth	.078	.156	.200	.200	.092	.184	.200	.200
N	305	503	568	568	362	542	568	568

Notes: The optimal bandwidth chosen to minimize mean square error is represented by h. Standard errors clustered by municipality are in parentheses. *p<.1; **p<.05; ***p<.01.

Table A6: Effect of Electing a Mayor Under 50 on Social Spending (10+ Year Age Gap)

DV:	Δ Child Welfare Spending				Δ Elderly Welfare Spending			
Specification:	Local Linear		Quad.	Cubic	Local Linear		Quad.	Cubic
Bandwidth:	h	$2h$	.2	.2	h	$2h$	.2	.2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mayor Under 50	.349***	.309***	.368***	.402**	.014	.049	.014	−.166
	(.129)	(.091)	(.118)	(.162)	(.099)	(.078)	(.115)	(.150)
Bandwidth	.075	.150	.200	.200	.116	.232	.200	.200
N	261	352	519	519	382	547	519	519

Notes: Sample limited to candidates who are at least 10 years apart in age. The optimal bandwidth chosen to minimize mean square error is represented by h. Standard errors clustered by municipality are in parentheses. *p<.1; **p<.05; ***p<.01.

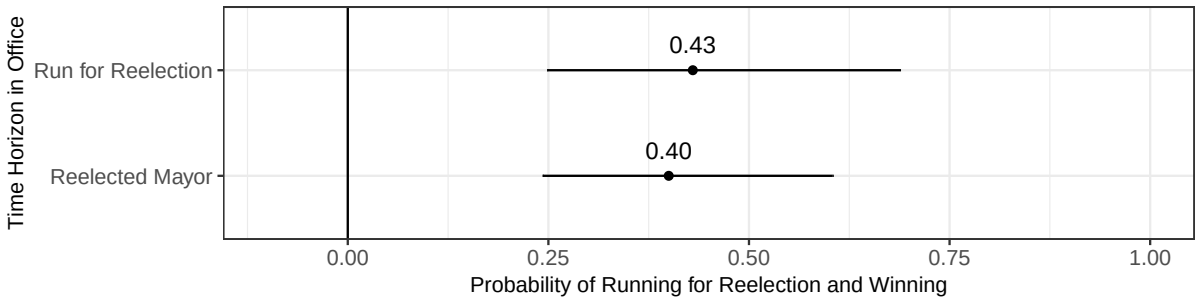
Table A7: Effect of Electing a Mayor Under 50 on Social Spending (With Controls)

DV:	Δ Child Welfare Spending				Δ Elderly Welfare Spending			
Specification:	Local Linear		Quad.	Cubic	Local Linear		Quad.	Cubic
Bandwidth:	h	$2h$	.2	.2	h	$2h$	.2	.2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mayor Under 50	.303**	.265***	.347***	.428**	−.015	.080	.065	−.107
	(.146)	(.098)	(.132)	(.193)	(.107)	(.083)	(.110)	(.145)
Bandwidth	.077	.154	.200	.200	.087	.174	.200	.200
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
N	299	502	568	568	335	528	568	568

Notes: Controls include incumbency, gender, population demographics, and lagged expenditures. The optimal bandwidth chosen to minimize mean square error is represented by h. Standard errors clustered by municipality are in parentheses. *p<.1; **p<.05; ***p<.01.

2.3 Mechanisms

Figure A6: Effect of Electing a Mayor Under 50 on Time Horizon in Office



Notes: RD estimates of electing a mayor under 50 with robust 95% confidence intervals.

2.4 Ruling Out Alternative Explanations

Table A8: Other Characteristics and Experiences of Mayors Under 50

	Mayors Under 50 vs. Mayors 50 and Over			
	RD Estimate	SE	Bandwidth (h)	N
Characteristics				
Female	–0.014	(0.032)	0.114	429
Education	0.084	(0.081)	0.118	332
Liberal Democratic Party	–0.037	(0.038)	0.081	320
Any Political Party	–0.063	(0.050)	0.060	241
Experience				
Mayor	-0.587^{***}	(0.080)	0.103	407
Municipal Assembly	0.035	(0.030)	0.067	264
Prefectural Assembly	0.009	(0.021)	0.086	340
Municipal Bureaucrat	−0.105	(0.107)	0.094	414
National Bureaucrat	0.055	(0.087)	0.116	431

Notes: Education is coded by the highest level of school completed: 0 (high school), 1 (college), 2 (graduate school). More than 99% of mayors officially ran as independents, but party here refers to whether mayors received recommendations or support from a political party during their campaigns. All models use local linear regression, where h represents the optimal bandwidth chosen to minimize mean square error. Standard errors clustered by municipality are in parentheses. *p<.1; **p<.05; ***p<.01.

Table A9: Mandatory Expenditures Placebo Check

	Effect of Electing a Mayor Under 50			
	RD Estimate	SE	Bandwidth (h)	N
Child Welfare				
Δ Social Assistance	0.007	(0.046)	0.077	299
Δ Personnel	0.013	(0.045)	0.060	237
Elderly Welfare				
Δ Social Assistance	0.040	(0.062)	0.119	425
Δ Personnel	−0.030	(0.086)	0.085	327
Δ Transfers	−0.008	(0.040)	0.066	257

Notes: All models use local linear regression, where h represents the optimal bandwidth chosen to minimize mean square error. Standard errors clustered by municipality are in parentheses. *p<.1; **p<.05; ***p<.01.

Table A10: Effect of Electing a Mayor Under 50 on Municipal Expenditures and Revenues

	Effect of Electing a Mayor Under 50			
	RD Estimate	SE	Bandwidth (h)	N
Expenditures				
Δ General	−0.063	(0.061)	0.107	403
Δ Welfare	0.044*	(0.022)	0.101	391
Δ Child	0.361**	(0.146)	0.078	305
Δ Elderly	0.050	(0.105)	0.092	362
Δ Social	0.027	(0.025)	0.078	306
Δ Protection	0.072	(0.053)	0.085	331
Δ Disaster	0.078	(0.102)	0.076	292
Δ Sanitation	0.036	(0.060)	0.080	309
Δ Labor	0.057	(0.106)	0.119	425
Δ Agriculture	−0.003	(0.073)	0.084	323
Δ Industry	−0.106	(0.093)	0.114	417
Δ Civil	0.047	(0.058)	0.068	264
Δ Fire	−0.010	(0.047)	0.102	392
Δ Education	0.121	(0.101)	0.073	286
Revenues				
Δ Local Allocation Tax	0.042	(0.092)	0.132	446
Δ Local Taxes	−0.017	(0.012)	0.088	340
Δ National Treasury Disbursements	0.045	(0.093)	0.081	316
Δ Prefectural Treasury Disbursements	0.088	(0.159)	0.078	300
Δ Local Bonds	0.097	(0.143)	0.071	275

Notes: All models use local linear regression, where h represents the optimal bandwidth chosen to minimize mean square error. Standard errors clustered by municipality are in parentheses. *p<.1; **p<.05; ***p<.01.

Table A11: Effect of Electing a Mayor Under 50 on Revenues for Child Welfare

	Effect of Electing a Mayor Under 50			
	RD Estimate	SE	Bandwidth (h)	N
Δ General Resources	0.048**	(0.024)	0.066	259
Δ National Treasury Disbursements	0.059	(0.106)	0.086	333
Δ Prefectural Treasury Disbursements	0.061	(0.055)	0.103	398
Δ Local Bonds	1.254***	(0.467)	0.061	243
Δ Other	−0.010	(0.128)	0.088	340

Notes: All models use local linear regression, where h represents the optimal bandwidth chosen to minimize mean square error. Standard errors clustered by municipality are in parentheses. *p<.1; **p<.05; ***p<.01.

2.5 External Validity

Table A12: Effect of Electing a Mayor Under 50 on Social Spending (Fixed Effects)

	Effect of Electing a Mayor Under 50		
	Estimate	SE	N
Δ Child Welfare	0.074**	(0.034)	6,371
Δ Elderly Welfare	0.027	(0.043)	6,371

Notes: All models use linear regression with municipality and year fixed effects. Standard errors clustered by municipality are in parentheses. *p<.1; **p<.05; ***p<.01.

3 Interviews with Mayors and Bureaucrats

3.1 Structure and Ethical Considerations

Semi-structured interviews were conducted under the University of California, San Diego's Human Research Protections Program's Protocol (Project 181763). The project was deemed exempt from full IRB review because the subjects are all public officials and the confidentiality of the interviewees will be maintained throughout the research and thereafter.

The interviewees were informed about the aims of the project, interview process, confidentiality, and informed consent procedures. All interviews were audio-recorded, conducted

in the Japanese language, and lasted an average of 45 minutes. All participants were made aware during consent that they had the right to stop the recording or erase the recording at any time during the interview. The audio files were professionally transcribed by someone who signed a non-disclosure agreement. I then personally translated the selected quotes in this article into English.

To protect the confidentiality of my participants, all of the interview notes and recordings are kept in password-protected files on a private computer and labelled using date and unique identification numbers. There is no electronic record of interviewee names, and the key linking identification numbers to interviewee names is kept in my locked office. In the main text, I list interview dates but not locations to protect the anonymity of interviewees.

3.2 Verbal Consent Protocol

Hello, my name is Charles McClean, and I am a PhD Candidate in the Department of Political Science at the University of California, San Diego. I am the principal investigator conducting a research study to find out about the effect of age on the behavior and policy preferences of elected officials. You have been asked to participate in this study because you are either a mayor or municipal bureaucrat in Japan. There will be approximately 30 participants in this study.

If you agree to be in this study, you will engage in a one-time interview ranging from 30 to 60 minutes. The interview will be audio-recorded and transcribed. The audio-recording is optional, and you may still participate without being recorded. During the interview, we will discuss [your/your mayor's] policy priorities, campaign activities, leadership style, and connection with [your/their] constituents.

Research records will be kept confidential to the extent allowed by law. In my written reports, small excerpts from the interview may be quoted. I will make sure to use a pseudonym to keep your identity confidential in my written reports, digital recordings, and transcriptions.

Participation in this study is entirely voluntary. Some risks of being interviewed are that you may, at times, experience feelings of anxiety, fatigue, or embarrassment. I want to assure you that should you experience discomfort during this interview you can refuse to answer the questions or ask to stop/withdraw from the interview without any adverse consequences.

If you have any questions about this study, you may contact me through the information listed on this page. This page also includes the contact information for the Human Research Protections Program Office at my university, which provides oversight for this study.

Do you have any questions at this time? Do you agree to participate?