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Silver Democracy: Youth Representation in an Aging Japan

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by

Charles T. McClean

Committee in charge:

Professor Megumi Naoi, Co-Chair
Professor Kaare Strøm, Co-Chair
Professor Daniel Butler
Professor Gordon Dahl
Professor Margaret Roberts

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The dissertation of Charles T. McClean is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

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Co-Chair

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Co-Chair

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DEDICATION

For Angela

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Nobody writes a dissertation alone. Or at least they shouldn't.

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VITA

2008	B. A. in International Relations and Japanese, Tufts University
2011	M. A. in Regional Studies: East Asia, Harvard University
2020	Ph. D. in Political Science, University of California San Diego
2020–2021	Postdoctoral Fellow, Program on U.S.-Japan Relations, Harvard University

ABSTRACT OF THE DISSERTATION

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by

Charles T. McClean

Doctor of Philosophy in Political Science

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Professor Megumi Naoi, Co-Chair
Professor Kaare Strøm, Co-Chair

Young people are under-represented in most political institutions, from local assemblies and mayoral offices to national legislatures. While studies have long shown that characteristics such as race, gender, class, and sexual orientation influence politicians' choices in office, however, we lack research on whether the age bias of institutions has similar consequences for policy outcomes. Understanding whether a policymaker's age affects their decision-making is especially important in rapidly aging societies such as Japan, where politicians confront soaring social welfare costs and tough decisions about allocating resources between efforts to encourage younger people to have more children and support a growing elderly population. Without the presence of

more young people in public office, there is a concern that the decisions made by mostly older politicians will lead to welfare policies that favor the elderly at the expense of younger families. Older politicians may also be less willing than younger politicians to address long-term issues such as social welfare reform, which will have a greater impact on younger generations.

This dissertation is about the causes and consequences of youth under-representation in democracies. I examine the institutional factors that help explain the variation in the age of politicians across elected offices, and whether voters have preferences concerning their representatives' ages. I also analyze whether the age of politicians affects the welfare policies they pursue in office. To do so, I draw on months of fieldwork in Japan and an original, candidate-level dataset of Japanese mayoral and municipal assembly elections over the past twenty years (1999–2019). Through chapters that utilize text analysis, regression discontinuity designs, and survey experiments, I provide evidence that age influences elected officials' behavior along two key dimensions. First, age affects elite preferences for the redistribution of welfare between age groups: younger politicians promote and implement policies that benefit younger families more than older politicians. Second, I find that the age of representatives shapes how they allocate welfare resources over time: younger politicians with longer time horizons are more willing to make long-term investments in child welfare infrastructure, whereas older politicians are more likely to increase short-term benefits for the elderly.

Chapter 1

Silver Democracy

> There is a gap between the meaning of 'young' and the meaning of 'young' in politics. I'm frustrated about my age. I want to get old.[1]
>
> (Shinjiro Koizumi, Member, House of Representatives, February 4, 2019)

On August 30, 2009, Shinjiro Koizumi was elected to Japan's House of Representatives at the age of 28, representing Kanagawa's 11th district as a member of the Liberal Democratic Party (LDP). He took over the seat from his retiring father, Junichiro Koizumi, who served as prime minister from 2001 to 2006. After taking office, Shinjiro easily won reelection in 2012, 2014, and 2017, each time with between 78% and 83% of the vote in his district. As he climbed the party ranks, Shinjiro often became the public face of policies at odds with the mostly middle-aged and senior members of the LDP, from social security reform to free preschool education. In 2019, Shinjiro became the youngest member of the cabinet as the minister of environment, and in 2020, he raised eyebrows when he became the first cabinet member to take paternity leave.[2] Despite still being just 39 in 2020, Shinjiro regularly tops public opinion polls for who should succeed Shinzo Abe, who is 65, as Japan's next prime minister.[3] However, few observers believe that

[1] Robin Harding and Lionel Barber, "'I Want to Get Old': Shinjiro Koizumi on His Political Frustration," *Financial Times*, Febuary 4, 2019.

[2] Koizumi was praised for the symbolic move, even though he took just two weeks off over three months. Motoko Rich, "A Japanese Politician is Taking Paternity Leave. It's a Big Deal." *New York Times*, January 15, 2020.

[3] Abe will turn 66 on September 21, 2020. See, for example, "Poll Shows Shinjiro Koizumi is Public's Favorite to Be Next Prime Minister of Japan," *Jiji News*, October 13, 2018.

members of the LDP would ever select someone so young to lead their party and the country.[4]

In many democracies such as Japan, young people that can succeed in politics are rare, and the few that make it are often the children of former elites, such as Shinjiro. In the last House of Representatives election in 2017, just 33 (7%) of the 465 members that won seats were under 40 years old, compared to nearly a third of the voting-age population in Japan. In the twenty-person cabinet of Prime Minister Abe, Shinjiro is the only member under 50, and the average age is 62. The oldest member is Deputy Prime Minister Taro Aso, who is 79.[5]

However, there are several countries where young people are much more likely to be elevated to positions of power. Voters in Norway, Sweden, and Denmark routinely elect legislators in their 20s and 30s to parliament in large numbers, such that more than a third of members are usually under 40. The average cabinet member in these countries is typically in their 40s and 15 years younger than the average cabinet member in Japan.[6] Moreover, the trend in many advanced democracies is for the age of leaders to be falling rather than rising.[7] Shinjiro may thus be seen as "too young to lead" in Japan, but elsewhere young leaders have become increasingly common, from Sebastian Kurz (33) in Austria to Sanna Martin (34) in Finland, Jacinda Acern (37) in New Zealand, Leo Varadkar (38) in Ireland, and Emmanuel Macron (39) in France.[8]

Why are younger politicians so rare in some electoral contexts, but not others? Moreover, does the shortage of young people in public office matter for representation and policy outcomes?

In Japan, the perception that younger people's influence over politics is in decline has led some to label the country a "silver democracy" (*shiruba minshu shugi*). All advanced democracies have aging populations, but Japan is leading the pack as the world's oldest country. As the proportion of senior citizens among voters continues to grow, young people in Japan are turning out to vote at lower and lower rates. Without more input from younger citizens

[4]The youngest LDP prime minister was Shinzo Abe in his first term (2006–2007) at 52 years old.

[5]Aso will turn 80 on September 20, 2020.

[6]Jacob Nyrup and Stuart Bramwell, The WhoGov Dataset, 2017.

[7]The average age of heads of government in the 37 OECD countries has fallen from 60 in 1950 to 54 in 2020. Ian Prasad Philbrick, "Why Does America Have Old Leaders?" *New York Times*, July 16, 2020.

[8]The number in parentheses denotes the leader's age when they became head of government.

into the policymaking process, there is a concern that vital reforms to social security will be postponed; spending on pensions, healthcare, and elderly welfare will skyrocket; and expenditures for education and childcare will suffer as a result. The demographic disparity between generations, which increases the burden on a shrinking number of younger workers to support the benefits for a growing number of elderly retirees, is only set to widen in the decades ahead. If leaders in Japan do not address rising social security costs, the welfare system may no longer remain sustainable, creating a dire situation for future generations.

In discussing the consequences of Japan's rapidly aging population, some older policymakers in the country have recently blamed young people for not having enough children or turning out to vote to make their voices heard.[9] Rarely has the problem been conceptualized, however, in terms of why there are so few younger people in public office, and whether electing more young politicians might influence the direction of social welfare policy.

1.1 The Puzzle

This dissertation is about the causes and consequences of youth under-representation in democracies. It examines the institutional factors that help explain the variation in the age of politicians across elected offices, and whether voters themselves have preferences concerning their representatives' ages. It also considers whether the age of politicians has consequences for policy outcomes, such as how government resources for social welfare are distributed between age groups and over time. More specifically, this dissertation draws on months of fieldwork in Japan and an original, candidate-level dataset of Japanese mayoral and municipal assembly elections over the past 20 years (1999–2019). Through chapters that utilize survey experiments,

[9]For example, on February 3, 2019, Deputy Prime Minister and Finance Minister Taro Aso said that younger, childless people should be blamed for Japan's shrinking population and growing social security costs. Aso said, "Some people blame the elderly. But it's wrong. It's more problematic that people did not have enough babies." See also Mike Ives, "Official Apologizes After Blaming Childless People for Japan's Shrinking Population," *New York Times*, February 5, 2019.

text analysis, and regression discontinuity designs, I aim to improve our understanding of why young people are often excluded from positions of power in Japan, why this exclusion matters, and what insights can be gleaned for other democracies around the world.

Defining what constitutes "youth representation" can be complicated compared to the representation of other groups, such as women, for several reasons. First, who is considered a "youth" varies across cultures and countries. Someone seen as young in Japan, where the median age is 47, may be viewed differently in Nigeria, where the median age is 18. Second, within the context of political representation, voter beliefs about whether a candidate is "young" may differ depending on the office in question, such as whether it is a local or national office, or for a legislative or executive position. The few studies that have explicitly analyzed the age of representatives have alternatively defined younger politicians as those under 30, 35, 40, 45, or 50 years old (Joshi 2013; Stockemer and Sundstrom 2018; Inter-Parliamentary Union 2018). Following the example of these studies, I will generally use the most popular cutoff of 40 years old when discussing younger representatives in this dissertation.[10] However, I also take care to discuss how the age of politicians compares to the age demographics of voting-age populations.

By this definition, Japan stands out among OECD countries for its relatively low number of younger people in government. Figure 1.1 shows the percentage of legislators under 40 in the lower (or unicameral) chambers of parliament for the 37 member countries of the OECD, using the most recent data available. The average percentage of members of parliament (MPs) under 40 is 21%, while the median is 22%. Japan (7%) has the third-fewest younger legislators among OECD countries, following South Korea (2%) and the United States (6%).

There is considerable variation in the number of MPs under 40 across countries, yet this variation has little to do with the differences in the age composition of societies. South Korea, for example, has a younger population than that of Denmark, yet Denmark's percentage of younger

[10]The one exception is for Chapter 6, where I use the cutoff of 50 for a younger mayor in Japan given the higher average age of candidates for this local, executive office. I also discuss any instances where the results differ according to alternative age cutoffs.

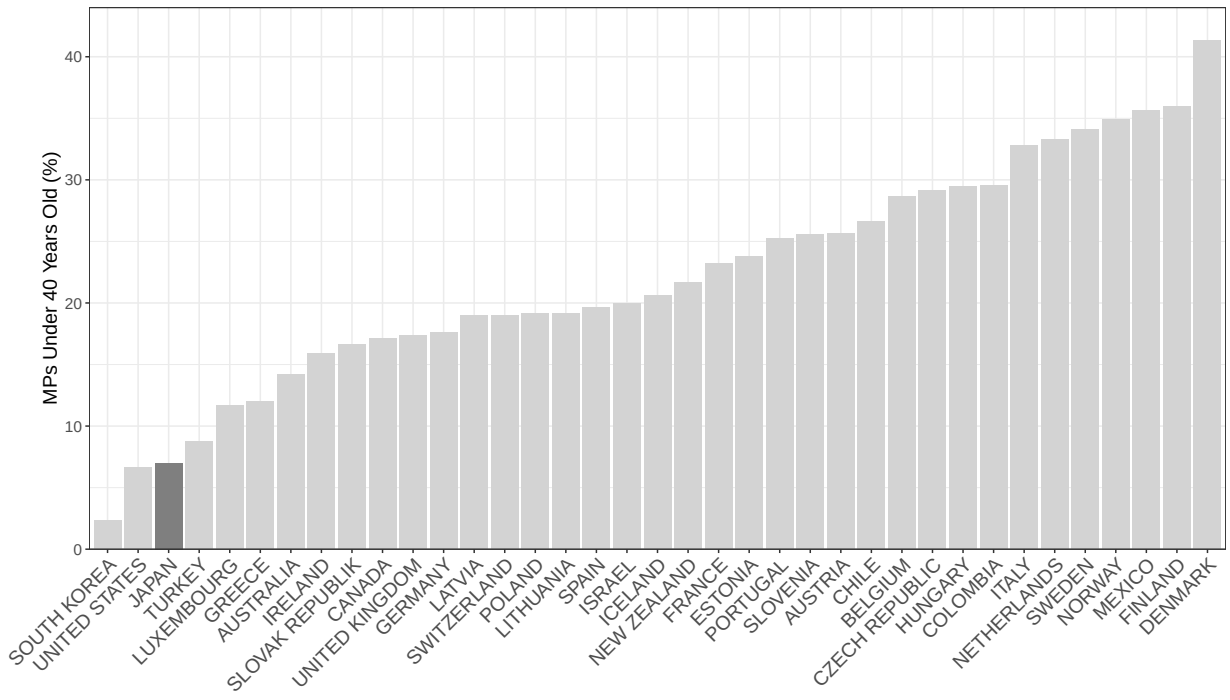


Figure 1.1: MPs Under 40 Years Old in 37 OECD Countries

Notes: Data collected by the author from parliamentary websites and the Inter-Parliamentary Union (2018). The y-axis shows the percent of MPs under 40 in the lower or unicameral chamber of each country's national legislature.

legislators (41%) is more than 20 times that of South Korea (2%).[11] Japan and Italy are two of the oldest advanced democracies, yet Italy (33%) has nearly five times as many younger MPs as Japan (7%).[12] In fact, among OECD countries, there is no correlation between the percentage of the voting-age population and MPs that are under 40 years old.[13]

The United States is another example of a country that is younger than most advanced democracies, yet it ranks second to last in youth representation, just below Japan.[14] In 2016, millennials (born between 1981 and 1996) surpassed baby boomers (born between 1946 and

[11] In South Korea, 38% of the voting-age population is under 40 years old compared to 34% in Denmark. United Nation Population Division (2020).

[12] In Italy, 29% of the voting-age population is under 40 compared to 30% in Japan. *Ibid.*

[13] The correlation is –0.03 (p=0.87). In Chapter 2, I show that this correlation becomes negative and significant when including a wider set of democracies, as many young, developing democracies have fewer younger legislators than older, advanced democracies.

[14] With a median age of 38.2, the United States is the 9th youngest OECD country. In terms of its voting-age population, 39% is under 40. United Nation Population Division (2020).

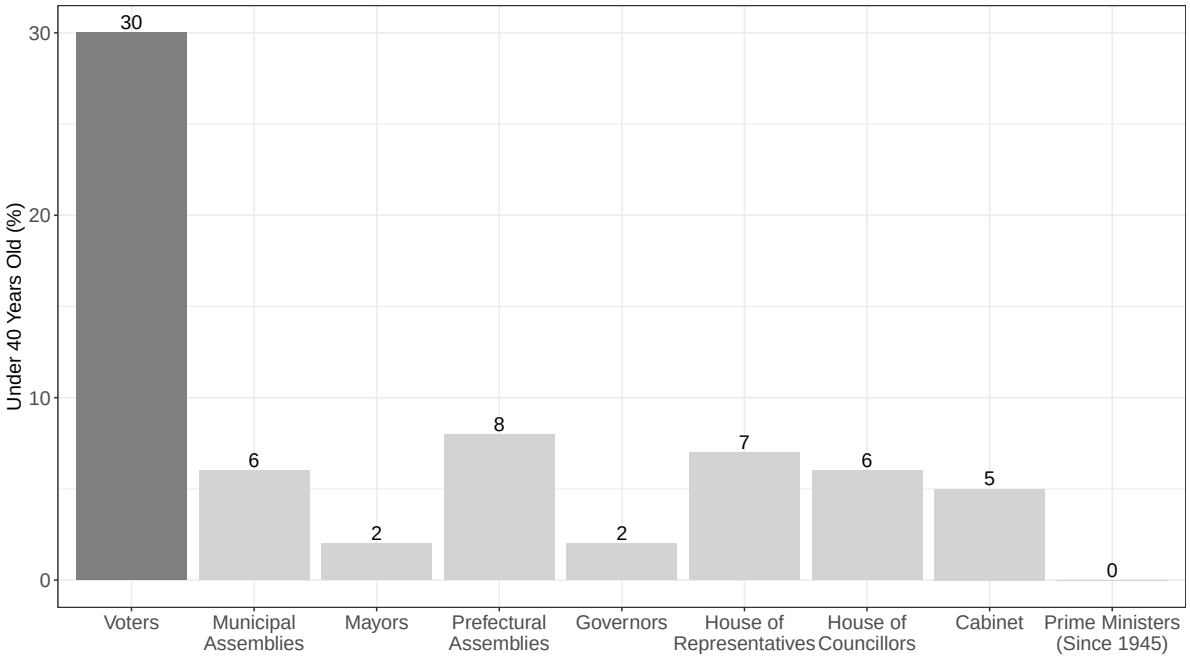


Figure 1.2: The Age Bias of Political Institutions in Japan

Notes: JMED (2020); Horiuchi and Natori (2019); Reed and Smith (2018); Maeda (2016).

1964) as the nation's largest living generation and the largest share of the electorate (31%).[15] Yet for all their potential voting power, just 26 (6%) of the 435 House of Representatives members of the 116th Congress (2019–2020) are millennials, compared to boomers who outnumber them nearly 9 to 1 at 233 members.[16] Much of the senior political leadership in the United States is also older, as in Japan. Speaker of the House Nancy Pelosi is 80, Senate Majority Leader Mitch McConnell is 78, the average cabinet member is 62, and the average Supreme Court Justice is 68. The two major-party presidential candidates for the 2020 election, Joe Biden (77) and Donald Trump (74), are the oldest in history, and the winner will become the oldest president.[17]

[15]Richard Fry, "Millennials Match Baby Boomers as Largest Generation in U.S. Electorate, But Will They Vote?" Pew Research Center, May 16, 2016, http://www.pewresearch.org/fact-tank/2016/05/16/millennials-match-baby-boomers-as-largest-generation-in-u-s-electorate-but-will-they-vote/.

[16]In the previous 115th Congress (2017–2018), the age disparity in the House was even worse, with boomers (270 members) outnumbering millennials (5 members) more than 50 to 1. Dave Merrill and Yvette Romero, "Millennials Can't Crack Congress," Bloomberg, November 10, 2016, https://www.bloomberg.com/graphics/2016-millennial-generation-in-congress/.

[17]Charolotte Alter and Daniel J. Levitin, "How Old Should a President Be?", *Vox*, May 20, 2020.

As this dissertation will explore in greater detail, the age inequality in representation is not limited to national institutions. Figure 1.2 shows how Japan also has few young people serving in elected office at any level of government. Japan's prime minister, 18 of the 19 other cabinet members, 46 of 47 governors, and 98% of the mayors of Japan's 1,741 municipalities are all in their 40s or older. Since the end of World War II, no prime minister has been under 50, and just five governors have been in their 30s. Younger citizens see better representation in legislative assemblies than executive offices across Japan, as might be expected, but they still make up less than 10% of members in municipal, prefectural, and national assemblies compared to 30% of the voting-age population. The average municipal assembly member begins their term in Japan at 59, and the average mayor enters office at 62.

1.2 Youth and Politics

The pattern of youth under-representation in political institutions raises some serious questions. Why is there a shortage of younger leaders in some electoral settings, whereas in other contexts, elected officials are more reflective of the age composition found in society? Do younger and older politicians promote different policies, or do they behave similarly regardless of age? Does the numerical under-representation of younger citizens in political institutions affect how younger people's interests fare in the policymaking process?

Answering these questions is important, and yet research on the subject is surprisingly scarce. Even scholars who focus on the connection between age and politics have not paid much attention to the age composition of political institutions. Instead, most work focuses on how age affects voting behavior (Plutzer 2002; Franklin 2004), political socialization (Alford, Funk and Hibbing 2005; Wolak 2009), or a sense of alienation from formal politics (Sloam 2007; Theocharis 2011). At the center of this research is a debate about whether younger citizens are more disengaged from politics than previous generations. Several studies treat young people as

uninformed, apathetic, and generally disinterested in political life (Putnam 2000). Compared to older generations, younger citizens vote less often and have less interest, involvement, or knowledge of traditional party politics (Wattenberg 2007). An alternative discourse describes young people as active and engaged. These studies shift the focus from voter turnout to emphasize generational changes and the importance of new forms of political participation (Norris 2004). Young people may vote less, but they are participating more in non-electoral politics (such as protests and democracy movements), more active online (Delli Carpini 2000), more tolerant, and more supportive of social justice (Dalton 2008).

While these studies examine political participation among young people, few have uncovered the factors that increase or decrease their chances of getting elected as representatives or whether youth descriptive representation matters for the well-being of citizens.

Despite the lack of research on youth representation or the link between age and elite behavior, scholars have identified two distinct mechanisms through which age influences public attitudes and behavior. First, age denotes an individual's place in the *life cycle*—whether they are a young adult in education, middle-aged parent participating in the labor market, or retiree—which can influence their policy preferences (Campbell et al. 1960; Kissau, Lutz and Rosset 2012). Second, age also reflects membership in a particular *generation* of individuals who were born at a similar time. The shared early experiences of an age cohort—particularly living through transformational events such as war, recession, or a transition from autocracy to democracy—can shape political behavior later in life (Campbell et al. 1960; Goerres 2009). As societies modernize over time, the level of education, technology, wealth, employment opportunities, and other factors may differ significantly between generations, leading to intergenerational conflicts about government spending and policy priorities (Braungart and Braungart 1986; Inglehart 1990).

While scholars debate whether individual attitudes change (life-cycle) or are stable (generational) over time, most studies agree that age is a strong predictor of public preferences and behavior (Plutzer 2002; Franklin 2004). Work in a variety of country contexts has found that

younger adults are more supportive of same-sex marriage (Kissau, Lutz and Rosset 2012), political intervention in the economy, gender equality (Norris and Inglehart 2001), public education (Levy 2005), and environmental protection (Wattenberg 2007), to name a few.[18] In explaining youth attitudes, many studies point to the importance of childhood socialization and the preferences of one's parents (Campbell et al. 1960). Others stress the effect of education on younger people's sense of empowerment (Campbell 2008), civic and social skills (Holbein and Hillygus 2020), factual knowledge about politics (Niemi and Junn 1998), political interest (Brady, Verba and Schlozman 1995), and social status (Campbell 2008). A growing body of literature further shows that the habits developed when young, particularly voting in elections, can have lasting consequences for political behavior later in life (Green and Shachar 2000; Gerber, Green and Shachar 2003; Fowler 2006; Meredith 2009; de Kadt 2017).

Youth *political participation* and *attitude formation* are thus active and mature research agendas, yet the focus in these studies is always on young people as either voters or social movement activists. Rarely has the question been considered in terms of whether there is a need to elect more young people to political positions. Even in research that discusses youth representation, the focus is typically on policy consultation mechanisms such as youth councils and youth parliaments, which are extra-parliamentary institutions, rather than on the legislature itself (Shephard and Patrikios 2013; Patrikios and Shephard 2014).

There are three areas where there are still substantial gaps in our knowledge. First, we know very little about the age *composition* of political institutions, apart from a handful of individual country studies (Burness 2000; Kissau, Lutz and Rosset 2012), single-region comparisons (Joshi 2013), or snapshots of cross-national variation at single moments in time (Stockemer and Sundstrom 2018; Inter-Parliamentary Union 2018). We still lack individual-level, over-time, or sub-national data and analysis. Second, we have little systematic evidence on the *mechanisms* that affect youth descriptive representation in legislatures, apart from a handful of

[18] See also Pippa Norris, "Young and Old Are Voting Very Differently in the U.K. and U.S. That's a Big Deal." *Washington Post*, June 14, 2017.

studies that point to low levels of political ambition among young people in the United States (Shames 2017; Lawless and Fox 2015), proportional representation (Joshi 2013), and minimum age requirements for candidacy as important (Stockemer and Sundstrom 2018).[19] Finally, there is no analysis across these studies of the *consequences* of greater youth presence in political institutions for the substantive representation of youth interests in government.[20]

The lack of academic work on youth representation is a striking omission given that research on the descriptive representation of various groups has accelerated significantly over the past two decades. There is a large comparative literature that connects the use of reserved seats, legislative quotas, and party quotas to the increased representation of women in more than 100 countries (Krook 2009) and ethnic groups in almost 40 countries (Hughes 2011; Krook and O'Brien 2010; Lundgren and Strøm 2016). Other studies have considered the factors that influence the representation of working-class individuals (Norris and Lovenduski 1995; Carnes 2012; Carnes and Lupu 2014) and LGBTQ people (Reynolds 2013) in legislatures. In contrast, until recently there has been almost no research on youth representation in parliaments.

The absence of past studies is further surprising given the literature linking the descriptive representation of social groups to their substantive representation in parliament (Pitkin 1967). Female legislators are more likely to exert a distinct style of leadership that emphasizes cooperation (Weikart et al. 2007), support legislation on women's issues such as gender equity and women's health (Swers 2002; Bratton 2005; Gerrity, Osborn and Mendez 2007), and provide different types of public goods (Chattopadhyay and Duflo 2004). Racial and ethnic minority legislators are less likely to discriminate against members of their group (Butler and Broockman 2011), and more supportive of civil rights issues and other policies important to their group's members (Cameron, Epstein and O'Halloran 1996; Whitby 1997; Canon 1999; Hughes 2011).

[19] Youth representation is also sometimes briefly mentioned in case studies that address other topics such as internal party democracy (Scarrow 1999), candidate selection procedures (Norris 1997; Reiser 2014), or women's representation (Darhour and Dahlerup 2013).

[20] The closest work is that of Curry and Haydon (2018), who show that older members of Congress are more likely to sponsor low-salience legislation important to seniors, and Alesina, Cassidy and Troiano (2019), who provide evidence that younger mayors in Italy are more likely to engage in political business cycles.

Legislators from the working class support more liberal economic policies (Carnes 2012), while the election of LGBTQ people to parliament can enhance gay rights in society (Reynolds 2013). Given this evidence, why should we not similarly expect younger lawmakers to promote youth interests in office?

1.3 Why Study Youth Representation?

The world's population is aging, with advanced, industrial democracies leading the way.[21] In these countries, some of the most pressing social issues now cut across age lines. As birth rates decline and life expectancy increases, and as shrinking work forces struggle to support growing retired populations, tough choices will have to be made on government tax and spending priorities. How leaders respond to these challenges will affect not only the choices made by individuals at different stages in the life cycle but also the capacity of governments to adapt to new conditions.

If young people are systematically excluded from positions where they can have an influence over policy decisions that affect them, then this raises concerns about intergenerational justice and equity (Bidadanure 2015, 2017). The descriptive representation of different age groups thus directly relates to core tenets of democracy such as inclusiveness, equality, and fairness (Dahl 1971; Coppedge, Alvarez and Maldonado 2008; Diamond and Morlino 2005; Stockemer 2009). The equal presence of young people in office may be especially important because younger citizens can be thought of as a disadvantaged group. Young people generally have less wealth and connections than older people and vote at lower rates (Lyons and Alexander 2000; Franklin 2004). MPs may choose to ignore younger citizens in order to focus their energies on elderly constituents who are wealthier, more likely to contribute to their campaigns, and vote much more often (Joshi 2013). The descriptive representation of younger citizens may, therefore, be a necessary condition for their substantive representation, the degree to which their preferences are represented and

[21] See, for example, United Nations, Department of Economic and Social Affairs, "World Population Ageing 2019," 2020.

considered in the policy process (Pitkin 1967).

Other scholars have similarly sounded the alarm about a possible "vicious cycle of political apathy" where the lack of youth representation, lack of political participation, and lack of political interest and knowledge among young people can all reinforce one another (Stockemer and Sundstrom 2018; Henn and Foard 2011). If younger citizens do not see politicians as anything like them or caring about issues important to them, then they may become further disengaged from electoral politics. Likewise, if parties and politicians believe that young people have little interest in politics, then they may be reluctant to dedicate significant effort to youth issues or to recruiting and nominating younger candidates.

Apart from normative concerns about intergenerational justice, the focus of this dissertation is on the potential implications for policy outcomes and the welfare of citizens. Without the presence of more young people in public office, the decisions made by mostly older politicians may lead to welfare policies that favor the elderly at the expense of younger families. Older politicians may also be less willing than younger politicians to address long-term issues such as social welfare reform, which will have a greater impact on younger generations.

Understanding how youth under-representation affects the distributional and temporal dimensions to welfare policy is critical because how welfare states treat different age groups can have significant consequences for their citizens (Lynch 2006). Government policies concerning the welfare of younger families, for example, can affect the quality and availability of child care, female labor force participation, fertility rates, and decisions made by young adults about how to balance their career plans with the division of labor at home. Public pension systems and nursing services for the elderly can similarly affect individual decisions about savings, investment, and retirement, not to mention the health, well-being, and care of senior citizens. At the government level, how welfare resources are allocated between groups and over time can substantially affect not only the sustainability of the welfare system itself but also the overall health and flexibility of the economy to address future challenges.

1.4 The Argument

This dissertation is divided into two parts, with the first half analyzing the causes of youth under-representation and the second half focusing on the consequences.

1.4.1 Why Institutions Differ in Youth Representation

Why does the number of young people in public office differ across electoral settings?

In explaining the variation in youth representation across political contexts, I focus both on the factors that affect the "supply" of younger people who are interested in running for office and capable of winning elections, as well as the conditions that shape the "demand" from voters for younger representatives. This supply-and-demand framework for analyzing candidate emergence has often been used in studies on the under-representation of other traditionally disadvantaged groups such as women and racial or ethnic minorities (e.g., Norris 1997). To the best of my knowledge, however, this is the first study to apply the framework to the representation of different age groups in political institutions.[22]

My central argument is that it is the supply-side, institutional factors that matter most in driving youth under-representation. In short, I expect the age composition of elected offices will depend on the extent to which institutions place the social and financial responsibilities of running for office on the individual candidate or the party. I hypothesize that younger politicians will be less common in electoral settings that task individual candidates with building substantial financial resources, social capital, prior elected experience, and name recognition to win elections. All of these factors are those that people tend to accrue with age, making it challenging for younger candidates to compete with middle-aged or senior politicians. In contrast, I expect younger representatives to be more common in systems where parties take greater responsibility

[22] Some studies of demand-side factors for the representation of other social groups focus on the biases of the political elites that recruit or nominate candidates in addition to voter biases (Krook 2009). I discuss the preferences of party elites in the context of how they are shaped by institutions (Chapters 2 and 3), but focus my demand-side empirical analyses on the role of voters (Chapter 4).

for the costs of running for office and where party leaders have incentives to nominate a diverse slate of candidates, including young people.

More generally, in Chapter 2, I theorize that institutions can create both resource and legal barriers to youth representation. The resource barriers described above can be driven by the choice of electoral system, but they can also be affected by institutions within the legislature itself. For example, some countries provide mostly older incumbents with perquisites such as generous salaries, large staffs, and committee systems that allow them to deliver targeted benefits to their core supporters, making it difficult for younger challengers to compete. Other countries instead create institutions specifically designed to help younger candidates, from youth networks in the parliament to public funding for election campaigns. Countries also differ in the extent to which they set up legal barriers to younger aspirants for political office. These expectations are relatively straightforward, but I anticipate that younger legislators will be less prevalent in systems that institute legal rules that formally exclude them (such as age minimums for candidacy) and more common where such rules seek to include them in the legislature (as with youth quotas).

I expect these institutional differences to be more influential than voter biases for youth representation. In Chapter 4, I hypothesize two mechanisms through which age discrimination against younger candidates could result in the shortage of young people in public office. The first is age stereotypes, meaning voters have shared beliefs that young people are too inexperienced or unqualified to serve in public office. The second is in-group favoritism, wherein voters prefer candidates closer to themselves in age, but younger candidates win less often because older citizens turn out to vote at much higher rates than their younger counterparts. For either of these mechanisms to explain variation in youth representation across different electoral contexts, however, these age biases would then need to be moderated by another factor such as the age demographics of voters, different cultural values across settings, or type of political institution.

Ultimately, I argue that neither one of these mechanisms is likely to be strong enough to account for the dramatic under-representation of younger people in political institutions. Drawing

on a large literature on age discrimination in other, non-political settings (e.g., Kite et al. 2005; Kubeck et al. 1996; Gordon and Arvey 2004), I provide evidence that age discrimination against the elderly is actually much more common than age discrimination against the young. These studies have also found that even older individuals tend to share these age stereotypes about the elderly, and sometimes have even stronger negative opinions against older workers than young people. As a result, I argue that it is unlikely that age discrimination alone can explain the lack of youth representation in political institutions.

1.4.2 Why the Age of Politicians Matters

Does the numerical under-representation of young people in office matter for the welfare of citizens?

I theorize that a politician's age will influence their welfare policies along two key dimensions. First, I expect that age affects elite preferences for the redistribution of welfare between groups: younger politicians will promote and implement policies that benefit younger families more than older politicians. Second, I argue that the age of politicians shapes how they allocate welfare resources over time: younger politicians with longer time horizons will be more willing to make long-term investments in welfare, whereas older politicians will be more likely to increase present welfare benefits.

Figure 1.3 presents a graphical summary of the argument, building on the two-dimensional representation of welfare policy developed by Jacobs (2011). The origin represents a government's status quo policy, the x-axis displays the extent of redistribution between age groups (with the elderly on the left and younger families on the right), and the y-axis accounts for inter-temporal transfers between spending in the present (at the bottom) and investment in the future (at the top). As indicated by the two arrows, I expect younger politicians to promote and implement policies that shift the status quo of welfare expenditures toward younger families and the future, and older politicians to advocate relatively more for present-oriented benefits for the elderly.

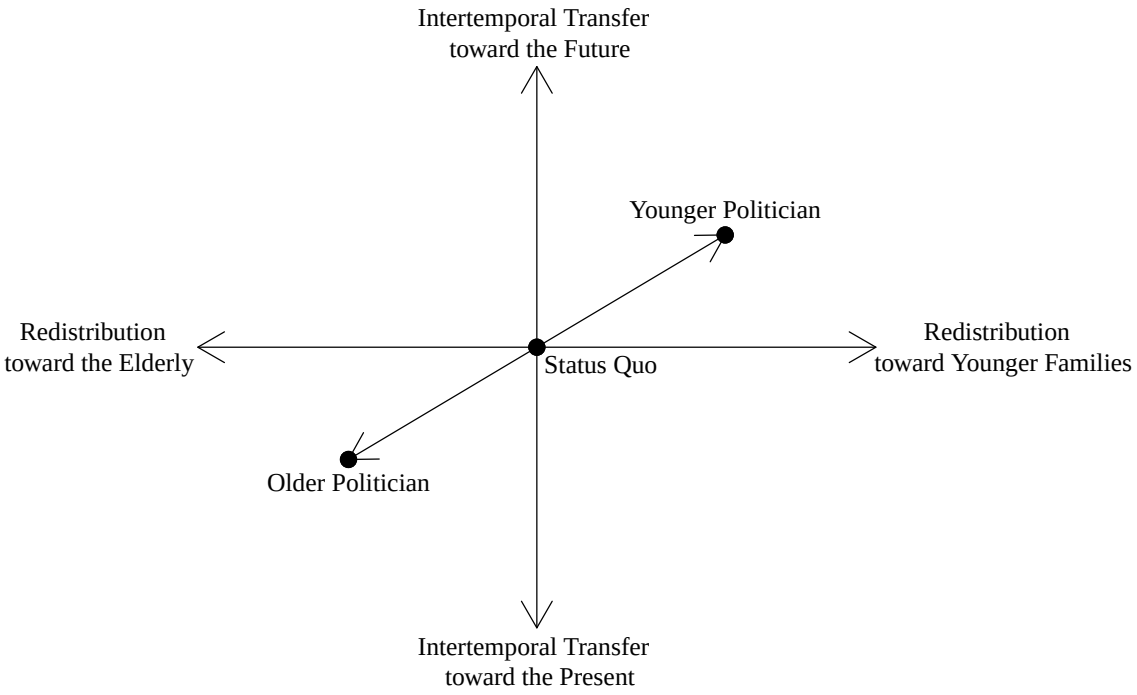


Figure 1.3: Theoretical Summary

Notes: Two-dimensional representation of welfare policy adapted from Jacobs (2011).

Age and Redistribution

First, I expect age to affect a politician's preferences regarding the redistribution of welfare between age groups (x-axis in Figure 1.3). Prior studies have suggested that representatives with ascriptive characteristics based on gender and race do a better job of incorporating the interests of citizens with similar characteristics into the policy process (Pitkin 1967; Phillips 1995; Mansbridge 1999). There is also substantial empirical evidence in support of the claim linking the presence of female and minority politicians in office (descriptive representation) to the policies they implement on behalf of members of their identity group (substantive representation) (Chattopadhyay and Duflo 2004; Hughes 2011).

While age has been largely overlooked by the literature on elite characteristics (see Krcmaric, Nelson and Roberts 2020 for a recent review), I expect that age influences the preferences

of politicians toward welfare through the same two channels as public attitudes. The first is that age denotes a stage in the life cycle. Younger politicians are more likely to be raising younger children themselves, or have friends who are parents, whereas older politicians and their peers are more likely to be confronting the financial and health challenges associated with aging and retirement. Politicians may therefore be more attuned to the challenges facing their own age group. The second is that age represents membership in a generation. Differences between generations in historical experiences can socialize members of an age cohort over time. For example, the salience of age-based welfare preferences may be stronger now as advanced democracies confront the challenges of population aging and declining birthrates than they were in earlier periods when population demographics tended to be more evenly distributed.

Although we lack studies of elite preferences, there is significant evidence that age affects the public's attitudes concerning the financing and allocation of the welfare budget (Grossman and Helpman 1998; Hassler et al. 2003; Levy 2005; Song, Storesletten and Zilibotti 2012; Bertocchi et al. 2020). Younger people tend to favor more public spending on education, childcare, parental leave, maternity care, and family allowances, which directly benefit younger students and parents (Iversen and Stephens 2008; Busemeyer, Goerres and Weschle 2009). Older citizens, in contrast, tend to prefer greater spending on pensions, nursing services, and healthcare, which disproportionately benefit elderly retirees (Goerres 2009).[23]

I expect politicians to carry these preferences into office with them and advocate more fervently on behalf of their age group. For example, I anticipate that younger politicians will be more likely to promote policies such as those that expand child care facilities, tackle student debt, extend the length of parental leave benefits, invest in early childhood education, or increase the allowances and tax benefits that parents receive for having children. In comparison, older politicians will be more likely to support policies that protect or expand previously promised

[23]Work on public attitudes has found that the extent of intergenerational differences in policy preferences varies by country and policy issue (Svallfors 2008; Busemeyer, Goerres and Weschle 2009). Recent experimental work by Kweon and Choi (2019) finds significant age differences in attitudes toward welfare redistribution in Japan.

pensions, construct new nursing homes and facilities, use new taxes to finance social security benefits, or otherwise increase services for the elderly.

Age and Time Horizons

Second, I hypothesize that younger politicians will have different preferences regarding the allocation of welfare over time than older politicians (y-axis in Figure 1.3). In general, younger politicians have longer time horizons than older politicians, both as younger people with longer remaining lifespans and as younger elected officials with longer remaining careers. The cumulative effect of both personal and professional dimensions may lead younger politicians to discount the future less and care about it more, and thus be more willing to impose costs on their constituents in the short term for the potential of a greater payoff in the long term.

I expect age-based time horizons to be especially influential on issues such as social welfare spending that have clear long-term implications for advanced democracies that are experiencing population aging. As populations grow older, and the ratio of retirees to workers increases, there is a risk that benefits for future generations will have to be reduced in order for the welfare system to remain sustainable. Younger politicians may therefore be especially sensitive toward policies that address declining birthrates as it directly affects the health of the future welfare system. By contrast, older politicians may be more concerned with protecting or expanding current benefits for the elderly. An increase in the number of children may lead to an increase in benefits for the elderly two decades down the line when those children begin to enter the workforce, but the promise of such a solution is too distant in the future to significantly improve the welfare of older citizens.

Again, while we lack evidence linking the age of elites to their time horizons, there is some evidence from economics and psychology that time preferences differ by age among the public. While the most robust finding is that people generally discount the future more than the present (Frederick, Loewenstein and O'Donoghue 2002), studies have shown that younger adults are often

more future-oriented in their thinking than the elderly. The evidence to support these arguments typically comes from lab experiments that show that younger people are more willing to forgo present benefits for the promise of greater benefits in the future (Albert and Duffy 2012; Harrison, Lau and Williams 2002).[24] There is also evidence that age affects an individual's willingness to take risks in the present for the potential of a future payoff, with younger people being more prone to risk-taking than older people. These studies point to differences in consumption and investment choices made by individuals of different ages over time, measured via financial or tax data (Jianakoplos and Bernasek 2006; Palsson 1996), as well as lab experiments that simulate lottery or gambling scenarios (Albert and Duffy 2012; Gächter, Johnson and Herrmann 2007).[25]

While we lack research that investigates the specific effects of a politician's age on their time horizons, most work in political science has tended to treat politicians as more focused on the short term than the long term. For example, Mayhew (1974) famously described members of the U.S. Congress as "single-minded seekers of reelection." There is also a large literature on political business cycles that suggests that elected officials manipulate the economy right before an election to boost their reelection chances, even if it does longer-term damage to the economy (Nordhaus 1975; Tufte 1975). Prior studies have thus suggested that politicians can be best be encouraged to enact more long-term policies if institutions are created to protect them from worrying about being replaced by voters in the near future, such as term limits, term lengths, safe seats, seniority systems, or even autocratic institutions (Dal Bó and Rossi 2011; Olson 1993; Simmons 2016; Titiunik 2016; Jacobs 2011).

In sum, I expect age to act as a "biological" term limit. A politician's age can shape how they view the inter-temporal trade-off between meeting the present needs of their constituents and the importance of investing in the future. As with politicians whose tenure in office is protected by institutions from voters, younger politicians stand to benefit more from long-term investment

[24]There is also some evidence that the relationship may be curvilinear, where middle-aged people discount less than either adolescents or the elderly (Read and Read 2004; Steinberg et al. 2009).

[25]Other studies find that older people are only more risk-averse in certain contexts, such as when weighing potential losses (Carstensen, Mikels and Mather 2006; De Martino et al. 2006)

in social welfare for both professional and personal reasons. As politicians with longer remaining careers, younger politicians can claim credit for their investment over a longer time period. Even if younger politicians retire from politics, their longer remaining lifespans mean that they will personally benefit more from long-term social returns. Given the greater opportunity for potential benefit, I expect that younger politicians will be more willing than older politicians to transfer welfare resources from the present to the future.

Present and future-oriented welfare policies can take many forms, as elaborated by Jacobs (2011). When I say that I expect older politicians to implement more present- or short-term-oriented policies, what I mean are policies whose benefits can be fully realized in the near future. For example, I expect older politicians to be relatively more supportive of policies such as subsidies that immediately reduce the costs of services for citizens, new taxes that collect revenues and then redistribute benefits in the present, or direct welfare payments to citizens. In contrast, I expect younger politicians to be relatively more supportive of policies that may come with some short-term cost to their constituents in exchange for the promise of greater long-term social returns. For example, younger representatives may promote policies to construct new welfare infrastructure, increase present taxes but use the revenues to pay for investments rather than immediate subsidies, or reduce current benefits in order to protect the long-term sustainability of the welfare system.

Overall, my argument in Figure 1.3 is not intended to suggest that younger politicians will necessarily defund the elderly, or that older politicians will spend nothing on child welfare. Similarly, I do not mean that younger elected officials will forgo all current spending or be perfect stewards for future generations, whereas older representatives will only take resources from future generations to spend on the elderly in the present. As Bidadanure (2015) writes, we do not need to take an essentialist view that only younger politicians can advocate on behalf of childcare issues, or only the elderly are well suited to make pension policy, to argue that age affects elite behavior. Instead, my expectation is that politicians will devote relatively more attention to the

welfare needs of their age group, and according to their respective time horizons, to the point that we can observe differences in the behavior of politicians of different ages.

1.5 Why Japan?

Japan, as the world's oldest country, is at the forefront of the aging trend found in advanced democracies. Nowhere else is age-related welfare so salient to the continued growth and prosperity of the country. Japan's social welfare costs, already the largest part of the budget, are expected to increase by 60% over the next two decades, while the number of workers is set to shrink by 20%.[26] Paying for welfare benefits will be a major challenge, especially given that Japan's debt-to-GDP ratio (234%) is already the highest among OECD countries.[27]

Figure 1.4 shows the changes in Japan's age demographics since 1950, as well as projections out until 2050. As a result of a declining fertility rate and higher life expectancy, people who are 65-and-over have increased fourfold since the 1970s and now account for a quarter of Japan's population. By comparison, the number of children under 15 has fallen by half from 24% to 13% over the same period.[28]

As these trends continue into the future, many worry that demographics will drag down Japan's economic growth. 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. Japan's overall population is also expected to decline from 127 million to 107 million by 2040, which means a smaller domestic market to purchase goods and services.[29] Population aging thus creates tension among politicians regarding the best path forward for social welfare policy: should the government target more resources toward child welfare to encourage younger people to have more children and reverse the trend of population decline, or toward elderly welfare to meet the needs of the growing

[26] Cabinet Office of Japan, "Meeting of the Council on Economic and Fiscal Policy," May 21, 2018.
[27] OECD Data, "General Government Debt," 2017.
[28] Ministry of Internal Affairs and Communication, "Japan Statistical Yearbook 2018," 2018.
[29] OECD, "Working Better with Age: Japan," 2018.

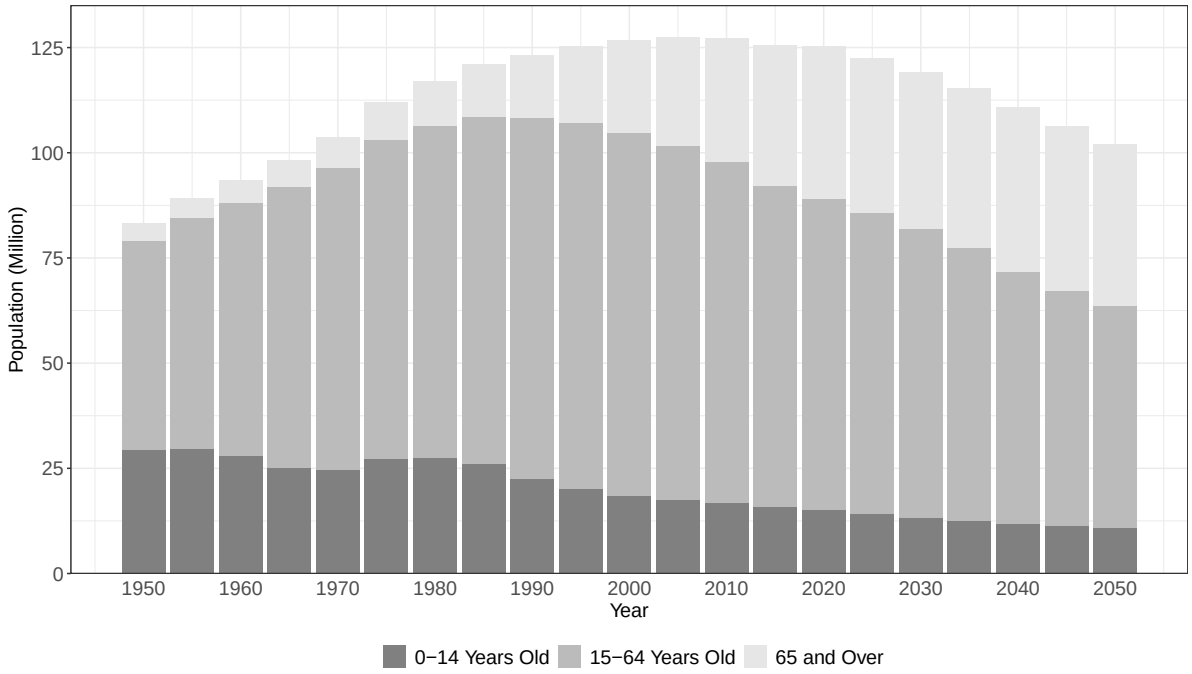


Figure 1.4: Japan's Aging Population

Notes: National Institute of Population and Social Security Research (2017).

elderly population?

As tough policy decisions come to the fore in Japan, young people are also turning out to vote at lower and lower rates. Figure 1.5 shows the turnout rates by age group for House of Representatives elections over the past 50 years (1967–2017). While 67% of voters in their 20s and 78% of those in their 30s participated in elections in 1967, those rates have been cut almost in half to 34% and 45% in 2017, respectively. While turnout has declined overall, the drops have been much less severe for older voters over the same period. Voters in their 60s had a turnout rate of 77% in 1967 compared to 72% in 2017, while voters in their 70s actually saw an increase from 57% in 1967 to 61% in 2017. As noted earlier, older people not only turn out more but also participate more in the official support groups (*koenkai*) of candidates and donate more to political campaigns. Thus, the challenge for young people in Japan's "silver democracy" is that both the absolute numbers and relative influence of senior citizens have grown significantly over

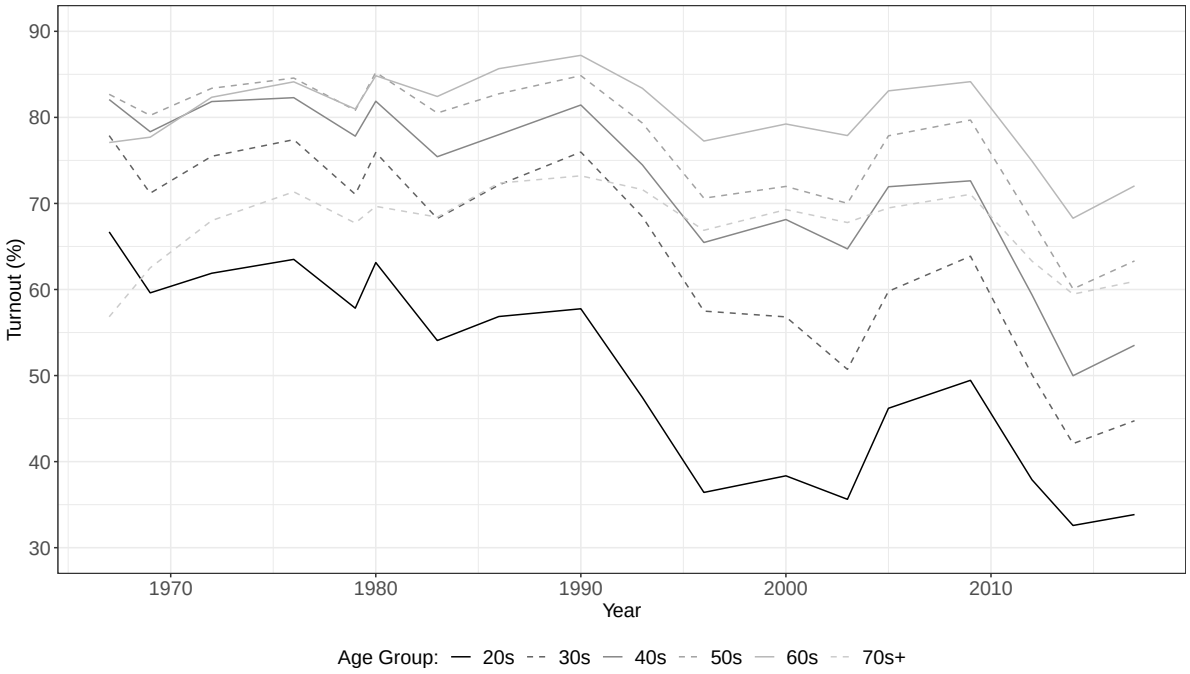


Figure 1.5: Turnout by Age Group in Japan

Notes: House of Representatives elections (1967–2017). Ministry of Internal Affairs and Communications (2020).

the past half-century.

These two factors—the relative size of the elderly population and their high voter turnout—are typically cited as the reasons why Japan devotes the lion's share of its welfare resources to caring for the elderly compared to younger families. For example, in her study of 20 OECD countries, Lynch (2006) found that Japan had the most elderly-biased welfare system, even accounting for population demographics. All countries tend to spend more on the elderly than other age groups because of the nature of their welfare needs. However, Lynch found that Japan's elderly/non-elderly spending ratio (ENSR)—social expenditures on the elderly (65+) divided by expenditures on the non-elderly (children and adults 0–64)—was 42.3, nearly eight times that of Denmark on the low end (5.75). Moreover, when she compared the value of the ENSR over the 1960 to 2000 period, she found that Japan's welfare system shifted the most toward the elderly (800%), much more than the next highest countries of Canada (116%) and the United

States (104%). Japan's experience was also very different from that of countries such as New Zealand, Denmark, Australia, and Finland, which all shifted greater resources toward children over the same period and reduced their ENSR values by 50 to 80%.

Estevez-Abe (2008) similarly documents how Japan has instituted universal policies for the elderly that rival the generosity of welfare systems in the Nordic countries, but by comparison has only provided meager benefits for children and families. Instead, the Japanese government has typically preferred to target policies at workers by providing public works projects, subsidies, market-restricting regulations, and employment protections for citizens. However, as Lynch (2006) notes, such policies do much to protect labor market "insiders," such as workers as they move into retirement, but suffer in helping labor market "outsiders," such as children and mothers.

A third characteristic of Japan that has received significantly less attention, and is the focus of this dissertation, is the age bias in political institutions. Given their shrinking size in the population, lower financial resources, and fewer political connections, it is unclear whether young people can reverse their fortunes simply by turning out to vote at higher rates. Instead, the findings of this dissertation suggest that they may need to be involved in the policymaking process itself to have sufficient attention paid to welfare policies that are important to them.

1.5.1 Why Local Government?

Finally, as discussed in the following chapters, I choose to focus especially on municipal government in Japan. While most studies of social welfare in Japan and other advanced democracies focus on national politics (e.g., Lynch 2006; Estevez-Abe 2008), it is typically local political actors that take the primary role in administering welfare programs to citizens. While pensions are run by the national government, municipalities otherwise account for more than half (56%) of all welfare expenditures in Japan.[30]

[30]Of the remaining 44%, 30% is from the central government and 14% from prefectures. Ministry of Internal Affairs and Communications, "White Paper on Local Public Finances," 2018.

Municipalities are also an important setting in which to study welfare policy because for many of these local governments, especially smaller towns and villages, aging populations represent an existential crisis. Since 2000, decentralization reforms in Japan have increasingly devolved powers from the central government to municipal assemblies and mayors, while fiscal support from Tokyo has declined. Municipal politicians now find themselves at the forefront of figuring how to provide benefits for their growing aging communities with declining tax revenues from their shrinking working-age populations. As a result of low birthrates, population aging, and within-Japan migration toward more metropolitan areas, a report in 2019 even suggested that as many as 869 municipalities—half of Japan's total—are at risk of extinction due to depopulation by 2040.[31]

At the same time that municipalities are being granted additional autonomy, they are also facing a crisis in democracy.[32] Especially in smaller towns and villages, fewer and fewer people are willing to run for office. In the 2019 Unified Local Elections, 30% of city mayors and 45% of town and village mayors were elected unopposed.[33] More than a fifth of assembly members in towns and villages also won in uncontested races. This lack of competition is made worse by poor diversity in who runs for office. Women make up just 14% of assembly members in Japan and 2% of mayors. As noted in Figure 1.2, 30% of voters are under 40 years old, but just 6% of assembly members and 2% of mayors are in their 20s or 30s. Some smaller villages in Japan, such as Okawa in Kochi Prefecture, are even exploring direct democracy as an alternative to their municipal assembly.[34]

As will be discussed in Chapter 3, municipalities are also an ideal setting from a research design standpoint because of their tremendous variation in age demographics, institutions, and the age of their elected officials. Municipalities range in population from less than 200 to over

[31] Allan Richarz, "In Japan's Vanishing Rural Towns, Newcomers Are Wanted." *Blomomberg CityLab*, November 15, 2019.

[32] See also Ken Victor Leonad Hijino, "Japan's Shrinking Democracy: Proposals for Reviving Local Assemblies," nippon.com, May 16, 2018.

[33] The data for these statistics comes from the Japan Municipal Elections Dataset (JMED) introduced in Chapter 3.

[34] "Shrinking Kochi Village Explores Direct Democracy," *Kyodo News*, June 12, 2017.

3.7 million, in their median ages from 38 to 89, in the size of their assemblies from 6 to 92 members, and in the district magnitudes in their elections from 1 to 50.[35] Some municipalities routinely fill 20% or more of the seats in their legislatures with representatives in their 20s and 30s, whereas others have never elected a member under 40 in the past twenty years (1999–2019). Some municipalities are led by a mayor under 30 years old, whereas others have mayors in their late 80s.[36]

Apart from variation, municipalities offer another advantage because mayors in particular have significant discretion over welfare policy. Since over 99% of mayors run as independents without party affiliation, 98% are men, and over 99% are ethnically Japanese, age is also one of the most salient social cleavages between candidates.[37] Legislators in Japan's House of Representatives, by comparison, are slightly more diverse and have to work with other representatives, party leaders, and often the executive to enact legislation. Moreover, while younger and older mayors have largely similar capacities to influence welfare policy, it is doubtful that younger representatives in a legislature will have the same influence as older members because they are more likely to be junior backbenchers than party leaders. All together, focusing on municipalities and mayors thus allows me to estimate better the impact of a politician's age on welfare policy outcomes.

1.6 The Evidence: Outline of the Dissertation

Chapter 2 begins by exploring the variation in youth representation from a cross-national perspective. To do so, I assemble an original dataset on the representation of different age groups in national parliaments in the world's 68 most populous democracies (2009–2018). I find that the electoral system, legislative structure, and statutory requirements regarding the eligibility age are

[35] District magnitude is the number of representatives in each electoral district.
[36] JMED (2020).
[37] *Ibid.*

all predictive of the number of legislators who win elections before their 40th birthday. Younger members of parliament (MPs) are significantly less common in countries where electoral and legislative institutions put the onus on individual candidates to accumulate substantial financial resources, long-term ties to a district, extensive prior experience in office, or name recognition to win elections. By comparison, younger politicians are more prevalent in party-oriented systems and when the minimum age of candidacy is the same as voting at 18 years old. Chapter 2 also puts Japan's experience with younger MPs into a comparative perspective, although even with data on a broader set of democracies, Japan still ranks 65th of 68 countries in youth representation.

Chapter 3 continues the analysis of supply-side, institutional factors in Japan by taking advantage of reforms at the national level, and variation at the municipal level. Chapter 3 also introduces my new dataset—the Japan Municipal Elections Dataset (JMED)—which includes information on nearly 200,000 municipal assembly and mayoral candidates competing in over 18,000 elections between 1999 and 2019. At the national level, I find that when Japan reformed the electoral system for the House of Representatives (HOR) from a candidate-centered system to a more party-oriented system, the number of younger candidates and MPs increased. Likewise, when the major parties in Japan changed their recruitment rules to open up competition and increase the influence of party leaders, more young people ran for office. At the municipal level, I show how population sizes and demographics, district magnitudes, and assembly sizes can all interact to increase the value of the personal vote in towns and villages, thus discouraging young people from running. By comparison, younger politicians are more common in cities and the wards of Tokyo, where party influence is stronger. Finally, by exploiting a feature of Japanese local electoral law that offers a credible source of exogenous variation in district magnitude, I am also able to provide causal evidence in support of these claims.

Chapter 4 turns to demand-side factors to test whether youth under-representation might be a result of voters generally preferring older politicians over younger leaders. Working with Yoshikuni Ono at Tohoku University, I investigate this question by conducting two novel survey

experiments in Japan. We ask respondents to evaluate the photos of hypothetical candidates for mayor, and then alter candidates' faces using artificial neural networks to make them appear as if they are younger or older while keeping their facial structure and contours intact. Contrary to the observed candidate pool for mayors, the voters in our experiments dislike elderly candidates the most but view younger candidates as equally favorable as middle-aged candidates. We also find that younger and middle-aged voters view candidates from their age group more favorably than others, whereas older voters do not, and that all voters use age as a heuristic for a candidate's issue emphases and traits. Voters associate younger candidates with education, childcare, and implementing policies from a longer-term perspective, whereas they connect elderly candidates more with experience and emphasizing issues related to healthcare and elderly welfare. We then provide evidence for the external validity of our results using data on actual mayoral elections from JMED. Together, these findings suggest that supply-side factors rather than voter demand explain the shortage of younger politicians. Thus, if institutions can be reformed, our results suggest that Japanese voters would be happy to see more young people in public office.

Chapter 5 shifts the dissertation's focus to whether the age of politicians matters for the welfare of citizens. While Chapter 4 finds that voters use age as an informational shortcut for candidates' behavior, Chapter 5 tests whether these judgments are accurate by analyzing the campaign communications of politicians. More specifically, the chapter begins by analyzing new data on the campaign tweets of over 5,000 municipal candidates from JMED. I find that younger municipal assembly and mayoral candidates are more likely to use Twitter in their campaigns, and they also interact more with voters on the platform. I then use supervised text analysis to analyze the more than 500,000 tweets that these candidates tweeted in the months leading up to their election. In line with Figure 1.3, I find that younger politicians tweet more about child welfare and future-oriented investment, whereas older politicians tweet much more often about elderly benefits and present-oriented welfare. Finally, I test the external validity of these results using an elite survey of House of Representatives candidates to show that we can also observe

these age differences among national candidates.

Chapter 6 continues the focus on policy outcomes by analyzing whether younger mayors follow through on their campaign communications in Chapter 5 by actually increasing spending on benefits for child welfare and the long term. The chapter draws both on data from JMED and from the interviews that I conducted over months in Japan with 15 mayors and 20 municipal bureaucrats in social welfare departments. Using a regression discontinuity design, I find that younger mayors increase their municipality's discretionary spending on younger families and more than double their municipality's prior investment in child welfare infrastructure. However, younger mayors do not pay for these new expenditures by defunding programs for elderly welfare. Instead, I find that younger and older mayors ultimately spend about the same on elderly benefits, although older mayors are more likely to increase present-oriented elderly welfare compared to investment. These asymmetric findings for the relationship between the age of mayors and welfare spending raise some final points for future analysis. On the one hand, readers worried about intergenerational conflicts over social welfare might see good news in that younger mayors do not seek to take funds away from the elderly. On the other hand, the results and interviews in Chapter 6 suggest that younger mayors may only do so because they are constrained by the disproportionate power of the elderly in elections.

Finally, Chapter 7 concludes the dissertation by discussing the broader implications of my results and directions for future research. I apply the findings from my dissertation to four recent policy proposals for increasing youth representation in Japan that have yet to gain much traction. In doing so, it is important to note that my aim is not to offer specific recommendations about the optimal age composition of political institutions. However, the results in this dissertation suggest that increasing the presence of young people in public office will have policy implications. Policymakers may be interested in increasing youth representation, either for normative reasons because of concerns about intergenerational justice or instrumental reasons because of the consequences for social welfare policy. If so, my findings suggest that they should

consider lowering the age of candidacy to 18, eliminating the expensive minimum deposit system for candidates, reforming the electoral system for municipal assemblies to introduce proportional representation, and implementing legislative or party youth quotas. Lastly, I suggest that future studies should explore the potential trade-offs in balancing youth and experience in legislatures, the symbolic effects of youth representation, how age interacts with other social identities, the generalizability of the arguments outside Japan, and the potential influences of a politician's age on other policy outcomes apart from social welfare.

Chapter 2

Youth Representation in Comparative Perspective

In many countries, members of parliament (MPs) are typically middle-aged or older men who are members of the dominant ethnic group and wealthier than the average citizen. There are some countries, though, where legislatures have much greater diversity along age, gender, racial, ethnic, or class lines. However, while there is extensive research focused on the causes and consequences of variation in the representation of women, minorities, and individuals from different class backgrounds (e.g., Chattopadhyay and Duflo 2004; Krook 2009; Hughes 2011; Carnes 2012; Szakonyi 2018; Franck and Rainer 2012), surprisingly few studies have examined age groups. As a result, we know little about the factors that explain why younger politicians are so rare in some countries, but not others, and whether the relative shortage of younger politicians matters for citizens' welfare.

In the first half of the dissertation, my primary concerns are the *causes* of youth under-representation, with the second half addressing the *consequences*. In this chapter, my goal is to explain why fewer than 10% of the legislators in Japan, South Korea, and the United States are under 40 years old compared to more than a third of the MPs in Italy, Sweden, and Denmark.

The answer has little to do with the age demographics of voters. When we consider younger, developing democracies together with the advanced OECD democracies discussed in Chapter 1, I find that the proportion of the voting-age population under 40 is inversely related to the percentage of MPs under 40. The age composition of legislatures in younger African democracies, where 60 to 70% of voters are under 40, thus looks much more like Japan and the United States than the Nordic countries, with fewer than 15% of MPs under 40.

I argue that the political institutions that structure electoral competition matter more than the electorate's age distribution in determining the age composition of parliaments. More specifically, I theorize that institutions can pose both resource and legal barriers to youth representation. In the case of resource barriers, I hypothesize that younger representatives will be less common in countries where institutions place greater responsibility on individual candidates (rather than parties) to build the financial capital, networks, experience, and name recognition necessary to win an election. These resources are those that individuals tend to accrue with age, making it more difficult for younger candidates to compete with middle-aged or senior politicians. My expectations for legal barriers are relatively clear-cut. I anticipate that younger legislators will be less prevalent in societies that institute legal rules that formally exclude young people from politics (such as age minimums for candidacy), and more prevalent where such rules seek to include them (such as with youth quotas).

To test for the influence of institutions, I first collect original data on the representation of different age groups in parliaments in the 68 most populous democracies of the world between 2009 and 2018. I then combine this data with the Legislative Assemblies dataset, a dataset that I constructed together with Shane Martin (University of Essex) and Kaare Strøm (UC San Diego), which includes more than 200 variables covering a wide range of legislative institutions in these same 68 democracies.

I find that a country's electoral system, legislative structure, and statutory requirements regarding the age of eligibility are all related to the number of legislators who win election before

their 40th birthday. Younger politicians are much less common in countries where the electoral system tasks them with building a personal vote (Carey and Shugart 1995), rather than being aided by their party's reputation, as well as in countries that provide older incumbents with significant resources that are not available to younger challengers. Younger parliamentarians are also much more common when the minimum age of candidacy is the same as voting at 18 years old. Otherwise, I find suggestive evidence that public funding for parties, youth legislative organizations, and youth quotas can aid in diversifying the age composition of parliaments. However, there is little evidence that reducing the minimum age of voting or implementing term limits has a significant impact on youth representation.

In sum, I find that institutions matter for the presence of young people in national parliaments. Understanding this is important not only because of concerns about intergenerational equity (Bidadanure 2015; González-Ricoy and Gosseries 2016), but also because of the potential consequences for the social welfare of these societies, as discussed in later chapters. While the claims in this chapter are correlational, rather than causal, they nevertheless represent a step forward in our understanding of youth representation and help to put the case of Japan into a comparative context.

2.1 Youth Representation in 68 Democracies

I begin by examining the variation in youth representation for the most populous democracies in the world. As discussed in Chapter 1, I follow the example of other studies and use 40 as the age cutoff for a younger legislator. For my sample of countries, I focus on the 68 democracies (as defined by Polity) with a population greater than four million. I decided on this set of countries both because of concerns about data availability for smaller democracies and because it matches the countries in the Legislative Assemblies dataset (Martin, McClean and Strøm 2020), which

includes a rich set of institutional variables for these 68 democracies.[1]

To calculate the age composition of legislatures, I use the parliaments that convened after general elections as the units of analysis. I then gathered data on the percentage of MPs under 40 elected in the lower or unicameral chamber of these country legislatures for every election held between 2009 and 2018 (168 elections in total). As part of my collaboration with Martin and Strøm, we used a combination of web scraping techniques, parliamentary websites, and existing datasets put together by other scholars to construct a membership list of nearly every MP that entered one of these 68 legislatures after a general election between 2000 and 2018—adding up to more than 85,000 observations in total. This data collection process is discussed in detail in Martin, McClean and Strøm (2020), where we use the data to explain cross-national patterns in incumbency rates.

In assembling this MP-level dataset for our joint project on incumbency, I also gathered data on the age of as many legislators as possible.[2] This task proved to be easier for more recent elections than older ones. As a result, I focus only on the last ten years of the dataset in this chapter (2009–2018). In cases where I could not find the age of elected legislators, I rely on data gathered by the Inter-Parliamentary Union (2018) wherever possible. In total, through my data collection efforts, I was able to collect the ages of MPs for the parliaments that convened following 154 of these 168 general elections (92%).

My newly created, cross-national dataset on the representation of age groups in parliaments offers some advantages over other efforts. I cover a wider variety of democracies than Joshi (2013), who studies 14 Asian countries, but fewer countries than Stockemer and Sundstrom (2018), who examine 74 democracies and 24 autocracies in their main analyses.[3] However, both

[1] Martin and Strøm also use this dataset in a forthcoming book on legislative assemblies. The decision to set a population cutoff at four million excludes 31 smaller democracies from the analysis. This cutoff means that I also exclude six smaller OECD countries (Estonia, Iceland, Latvia, Lithuania, Luxembourg, and Slovenia) covered in Chapter 1 (Table 1.1).

[2] In some cases, I collected data on the age of the MP at the time they entered parliament. In other cases, I gathered the dates of birth of MPs and then used this information to calculate their age at the beginning of the term.

[3] The authors collect information on age groups in 107 country legislatures in total. However, they lack data for some of the independent variables for nine countries, which reduces their total N to 98 countries in the primary

of these works rely on snapshots of youth representation taken at the time of the respective study: 2010–2011 for Joshi (2013) and the most recent election as of 2017 for Stockemer and Sundstrom (2018). In comparison, I analyze a broader range of election years, including most of the elections in these 68 democracies between 2009 and 2018. My dataset also includes 17 new democracies, mostly in Africa and Latin America, that were not covered by either analysis.[4] By focusing on larger democracies, the other advantage of my approach is that I can pair my data with the Legislative Assemblies dataset and test the effects of a more comprehensive set of institutional variables on youth representation.

Figure 2.1 presents the percentage of MPs under 40 for each of these 68 democracies, using the most recent elections in my dataset. The overall range in youth representation remains the same as the analysis of OECD countries in Chapter 1: from South Korea (2.3%) at the low end to Denmark (41.3%) at the high end. However, between these two extremes, we can see that there is a great deal of variation, with a median percentage of 18.5% and a mean of 19.7%. With the addition of a more diverse set of democracies, we can also see that countries such as Benin (2.4%) and Niger (6.6%) have even fewer younger representatives than the United States (6.0%) and Japan (7.0%), although not as few as South Korea. At the other end of the distribution, countries outside the OECD such as Ecuador (34.3%), Romania (35.3%), and Ukraine (41.2%) have high numbers of younger MPs that even rival the Nordic countries of Sweden (34.1%), Norway (34.9%), Finland (36.0%), and Denmark (41.3%).[5]

One of the surprising findings discussed in Chapter 1 was the lack of a relationship between the age demographics of voters and MPs. With this broader sample of democracies, the correlation between the two age groups is actually negative and strongly significant at –41% ($p<0.0001$). Figure 2.2 plots the voting-age population (VAP) under 40 (%) on the x-axis with

analyses of the paper.

[4]These 17 democracies include Benin, Bolivia, Burundi, Colombia, Ecuador, El Salvador, Honduras, Liberia, Malawi, Nicaragua, Niger, Pakistan, Papua New Guinea, Senegal, Sierra Leone, South Africa, and Taiwan.

[5]Iceland, which is excluded from this dataset because of its small population but is included in Chapter 1's analysis of OECD countries (Figure 1.1), has a more average level of youth representation at 20.6%.

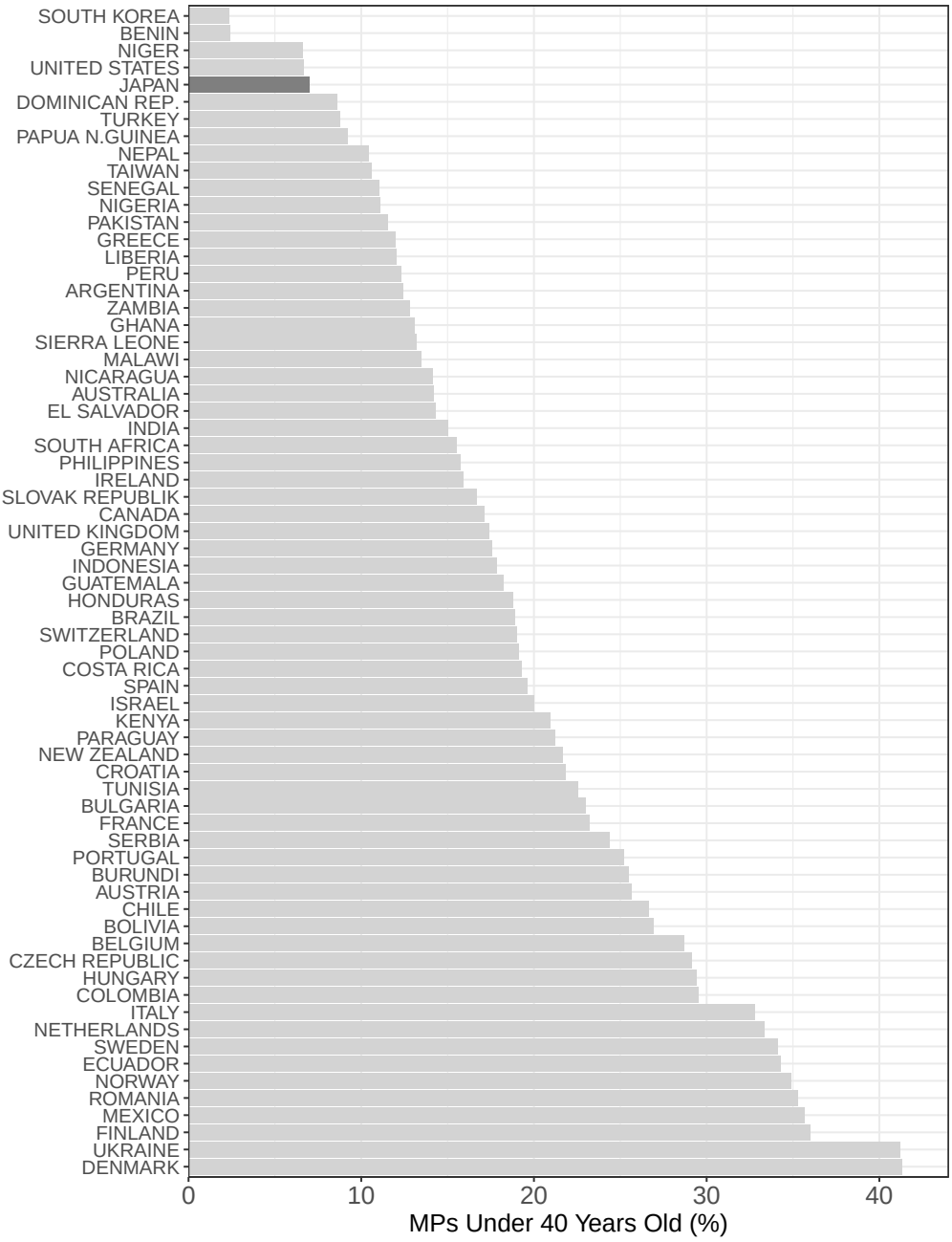


Figure 2.1: MPs Under 40 Years Old in 68 Democracies

Notes: Data collected by the author from parliamentary websites and the Inter-Parliamentary Union (2018).

the MPs under 40 (%) on the y-axis. I use a dotted line to represent equal representation (i.e., where the percentage of the VAP under 40 is the same as the percentage of MPs under 40). I then

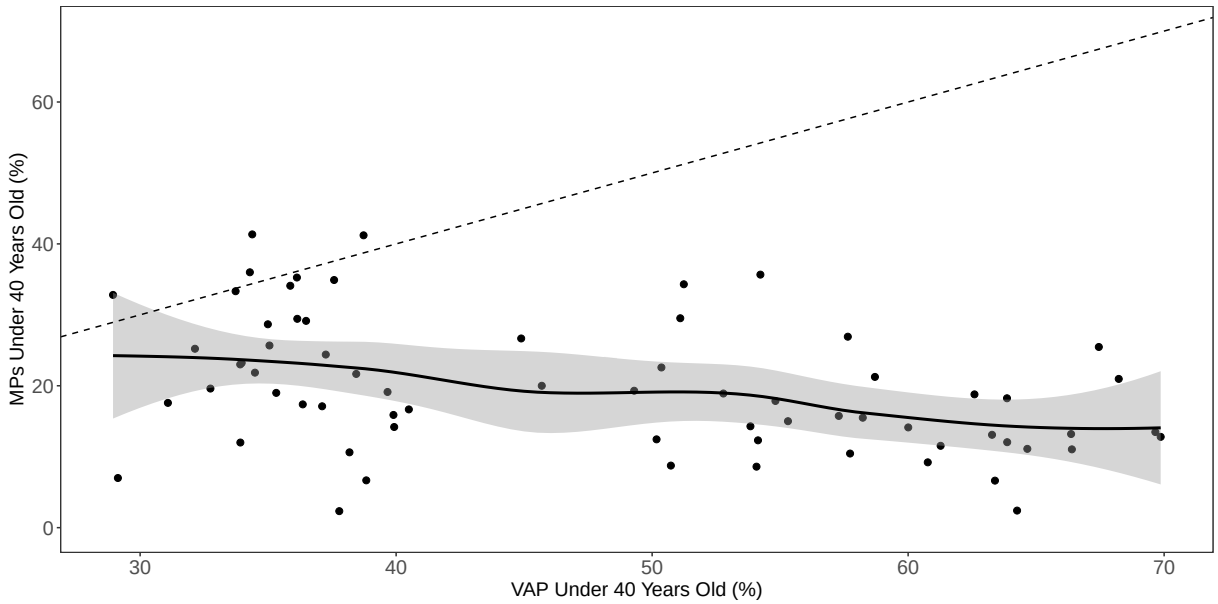


Figure 2.2: Voting-Age Population and MPs Under 40 Years Old

Notes: The dotted line shows where the voting-age population (VAP) under 40 is equal to the members of parliament (MPs) under 40. The black line is fit using a loess smoothing function with the 95% confidence interval in grey. Data on MPs are collected by the author from parliamentary websites and the Inter-Parliamentary Union (2018). Population data is from the United Nation Population Division (2020).

fit a loess curve to the data, with 95% confidence intervals shown in grey.

While 30 to 40% of the VAP is under 40 in most OECD countries, this percentage expands to 50 to 70% for less-developed democracies. However, as we can see from Figure 2.2, these countries do not have significantly more young MPs to match their substantially younger populations. Instead, younger, developing democracies often have fewer young representatives than many older, advanced democracies. Of the ten largest representation gaps—the difference between the percentage of the VAP and MPs under 40—nine are in Africa, where people under 40 make up between 63% and 70% of eligible voters but less than 15% of elected officials. The worst representation gap is in Benin, where 64.3% of the VAP is under 40 compared to just 2.4% of MPs. In contrast to the substantial youth under-representation in Africa, there are four countries in Europe where young people are slightly over-represented in the legislature: Denmark, Italy, Ukraine, and Finland.

2.2 Explaining the Age Bias of Political Institutions

Why are younger politicians so rare in some electoral contexts, and not others? Moreover, why is there a negative relationship between the age demographics of voters and the politicians that represent them in office?

To date, surprisingly few scholars have set out to explain the reasons behind the variation in youth representation at either the sub-national or cross-national level. There are a handful of studies that discuss how middle-aged and older adults tend to be over-represented in legislatures compared to young people, whether in cross-national perspective (Blondel 1995; Norris 1997; Joshi 2013; Stockemer and Sundstrom 2018) or in specific countries such as France (Murray 2008), Sweden (Burness 2000), Switzerland (Kissau, Lutz and Rosset 2012), or the United States (Shames 2017; Lawless and Fox 2015).[6]

Of the single-country studies, only Shames (2017) and Lawless and Fox (2015) focus explicitly on attempting to explain youth under-representation. Both studies point to a lack of political ambition as the main culprit. They argue that younger Americans are less interested in running for office because they feel alienated from contemporary politics, view elected officials as corrupt, dishonest, and inefficient, and believe that they can best enact change in their communities through other means. While these studies offer several valuable insights, both studies rely on data from surveys of potential candidates in the United States at a specific point in time. Although the studies do briefly discuss how the United States might differ from other countries, both lack data to explicitly test whether institutional barriers may be driving the lack of ambition among younger Americans.

Of the cross-national studies, only Joshi's (2013) study of 14 Asian countries and Stockemer and Sundstrom's (2018) study of 98 democracies and autocracies focus on institutions. Their main finding is that younger legislators are more common in countries with proportional

[6]Outside of academic work, the Inter-Parliamentary Union (2018) has also published a series of descriptive reports on youth representation in over 100 countries in 2014, 2016, and 2018.

representation (PR) than majoritarian electoral systems. This result matches a well-known finding in the literature on descriptive representation that countries with PR tend to be more inclusive societies and have a greater share of women and ethnic minorities in the legislature (Norris 2004; Krook 2009). Apart from extending past arguments about PR to youth representation, Stockemer and Sundstrom (2018) also find that younger MPs are less common in countries with high minimum ages of candidacy.

My aim with the first part of this dissertation is to delve more deeply into institutional explanations, both in a cross-national perspective (this chapter) and within Japan (Chapter 3). Institutional theories, together with political ambition, are often referred to as "supply-side" explanations because they affect the overall supply of younger candidates that run for office. In Chapter 4, I then test for "demand-side" explanations, namely, whether voters are willing to support younger candidates or if they instead have strong biases against them.

2.2.1 Resource Barriers to Youth Representation

As with prior studies, I expect that the electoral system can significantly influence youth representation. My point of departure from these studies, however, is to focus not only on the overarching proportional vs. majoritarian divide but also more specifically on the incentives that electoral systems provide candidates to cultivate a personal vote (Carey and Shugart 1995). Most importantly for age, electoral systems can differ dramatically in the extent to which individual candidate characteristics—such as personal financial resources, name recognition, past elected experience, and long-term ties to a district—or the reputation of the party becomes the deciding factor for voters at the ballot box. Many of these candidate-level resource advantages tend to accrue with one's age, making it difficult for younger candidates to win office in more personalistic electoral systems.

Therefore, I expect younger representatives will be less common in democracies where the value of the personal vote is high. Cain, Ferejohn and Fiorina (1987, 9) define the personal vote

as a "candidate's electoral support which originates in his or her personal qualities, qualifications, activities, and record." In democracies where voters cast their ballots for individual candidates, the personal vote can be critical. In contrast, legislators elected via party-centered electoral systems, where voters cast a vote for a party list, have fewer incentives to build a reputation with constituents because their electoral fate depends primarily on the party's reputation.

The personal vote should thus be stronger and younger MPs rarer in countries using majoritarian, single-member district systems with plurality rule, such as in the United States, Canada, and for some candidates in Japan. Citizens in these systems are voting not just based on a party, but on their beliefs about the candidate's effectiveness as their district representative (Iversen and Rosenbluth 2011). Since only one person can carry the party banner in the district, parties and voters may be hesitant about supporting a younger individual as their standard-bearer, choosing instead to select older, more established candidates. The higher value of the personal vote means that candidates benefit strongly from personal name recognition, money, experience, and networks—political capital that is challenging to acquire at a young age. This capital can be especially crucial in countries where major parties require their candidates to first win a primary election before the general election, such as in the United States, as candidates cannot rely on the party's reputation when competing against co-partisans (Ashe and Stewart 2012). In particular, long-term local ties to the district and past electoral experience are seen as two of the most influential personal-vote earning attributes (PVEAs) (Shugart, Valdini and Suominen 2005; Tavits 2009, 2010). However, younger candidates are less likely to have either of these PVEAs given their age and greater geographic mobility. Young people are more likely than older people to move for educational and professional opportunities, and thus they are less likely to have settled down and developed ties to a community.

In contrast, I anticipate that there will be more young MPs in electoral systems where the party label is much more important than the personal vote in winning elections. Under PR rules, parties present lists of candidates and have incentives to maximize the collective appeal of

their party's image by ensuring that these lists are more reflective of society as a whole (Norris 2004). As a result, individual candidates have fewer incentives to build a personal reputation by catering directly to local constituencies. This lack of incentive is especially true in closed-list PR systems such as Israel, where parties control candidate placement on the list, and voters can only cast a vote for a party, not a candidate. In open-list PR systems, by comparison, voters typically have at least the option of casting a preference vote for a specific candidate on the list. These preference votes first contribute to the party's overall share of seats in the legislature, and then to the candidate's ranking on the party list. Parties under open-list PR thus have incentives to strike a balance between candidates with strong PVEAs and those that add to the collective appeal of the party's label, such as younger candidates without extensive local ties or previous experience in office.

In PR systems, parties thus tend to place greater emphasis on party loyalty rather than the development of personal support bases. Younger candidates, who typically have less independent political power, may be especially attractive to many party leaders. PR systems also tend to produce multi-party systems, which increase the number of potential access points for younger political aspirants (Siaroff 2000). For example, some studies have found that younger candidates are more common in certain smaller parties, such as green parties, due to younger people's interest in environmental issues (Goerres 2009). Finally, many PR systems give party leaders the ability to open up seats for younger members in the parliament, if they so choose, because leaders control the party list, and sometimes candidate placement on the list. In majoritarian systems, by contrast, it can be challenging for party leaders to force incumbents to step aside and make room for younger members of the party.

In sum, I expect that younger legislators will be more common in party-oriented electoral systems and less common in candidate-centered electoral systems that require candidates to develop personal support bases to win elected office.

> **H1:** The percentage of MPs under 40 will be negatively associated with electoral systems that provide incentives to cultivate a personal vote.

Apart from their electoral systems, countries also differ in the resources they make available to incumbent legislators. Some legislative institutions provide individual members with a wide range of perquisites, from control over the appropriation of "pork-barrel" projects for their districts to seats on powerful committees, large staffs, and generous salaries (Martin, McClean and Strøm 2020). In the U.S. House of Representatives, for example, scholars have long recognized that "the organization of Congress meets remarkably well the electoral needs of its members" (Mayhew 1974, 81) by providing them with access to these benefits. In other legislatures, by contrast, such power and resources are typically removed from the control of individual representatives and instead concentrated in the hands of party leaders.

The extent to which these resources are available to incumbent legislators poses two types of barriers to younger candidates. The first is that such perquisites may increase retention and decrease turnover. If legislative resources make serving in office more rewarding and enjoyable—such as by facilitating the ability of lawmakers to participate in the policymaking process—then incumbents may have less ambition to seek other positions in either higher levels of government or outside politics (Schlesinger 1966; Squire 2007; Carey, Niemi and Powell 2000). Apart from increasing job satisfaction, these benefits can also be used by incumbents in their reelection campaigns to gain a significant advantage over potentially younger challengers (Mayhew 1974).[7] If tenures in office are long and turnover rates are low, then there may be few access points for younger politicians to enter the legislature.

The second potential effect is that legislative resources may increase the barrier to entry for younger candidates. As the value of holding national office increases, these legislatures will likely attract "higher quality" candidates, such as those with prior experience in elected office, strong ties to the community, and greater knowledge about their constituents' needs (Jacobson 1983; Nemerever and Butler 2020). Given that these characteristics are typically positively

[7] In a working paper, Martin, McClean and Strøm (2020) argue that incumbents' ability to use these resources to facilitate their reelection is conditional on the amount of corruption in government. In relatively cleaner democracies, such resources are positively associated with incumbency rates. When corruption is higher, however, the availability of these perquisites can depress reelection rates.

correlated with a person's age, representatives in legislatures with high salaries, large staffs, and developed committee systems may also tend to be older. Similarly, in legislatures where members are provided with the resources to take on greater individual responsibility for policymaking, as opposed to party leaders, voters may place greater importance on members having the types of qualifications and experience that tend to come with age.

Together, these two effects suggest that parliaments that provide more resources for individual legislators will be older than those where party leaders have more power and influence.

> **H2:** The percentage of MPs under 40 will be negatively associated with the legislative resources available to incumbent legislators.

Apart from more general legislative resources, some parliaments have specific institutions that directly support younger legislators' careers. These bodies can take on a variety of forms. In some parliaments, members have established networks of younger elected officials to advance their professional development and capacity building. Examples include the Youth Intergroup of the Italian Parliament, the Young Parliamentarians Association in Kenya, and the Young Parliamentarians Forum in Pakistan. Representatives in Japan similarly established the Youth Policy Parliamentary Group in 2018 to bring together members under 40 from various parties to discuss ways of increasing youth representation in the parliament. In other legislatures, youth-related organizations can include caucuses where MPs of all ages come together to work on specific reforms and policies that target younger members of society. Such organizations include the Caucus to Promote Youth Policies in Israel, the Parliamentary Forum on Youth in India, and the Parliamentary Friends of Youth Mental Health in Australia (Inter-Parliamentary Union 2018).

While the nature of these networks and caucuses differ between countries, I expect that the existence of these formal structures will be connected to the relative presence of younger parliamentarians.

> **H3:** The percentage of MPs under 40 will be positively associated with the presence of youth legislative structures.

Finally, I expect institutional rules concerning access to political financing will affect the number of younger MPs. In many countries, running a competitive campaign for national office can depend on having access to large sums of money. In her book on youth political ambition in the United States, Shames (2017) found that among likely candidates for public office, concern about fundraising was the number one factor deterring these young people from running for office. Of the young people that Shames surveyed, nearly 80% said that they were "somewhat or very bothered by the current process of campaign financing" (Shames 2017, 48). More than half (52.4%) said that they would definitely be more likely to run if campaigns were publicly financed, with another quarter (25.3%) saying that such financing would possibly make them more likely to run for office.

In other democracies, campaigns for national office can be much more affordable for young people. Canada, for example, has strict rules concerning spending limits and corporate donations in campaigns (Milligan and Rekkas 2008). Similarly, Swedish parties have received substantial public subsidies since the 1960s, limiting the need to rely on private donations or the resources of individual candidates (Hagevi 2018). Comparing financing rules across countries is challenging given that countries differ not only in whether such rules exist but also in how strictly the rules are written and applied. In this chapter, I focus on public funding for parties. I anticipate that younger MPs will be more common in countries that allocate public funds to help finance candidates and parties in their election campaigns.

> **H4:** The percentage of MPs under 40 will be positively associated with the existence of public funding for parties.

2.2.2 Legal Barriers to Youth Representation

Some of the age bias found in legislatures is by design. A minimum age together with citizenship and some form of residency requirement are the most common legal barriers for individuals seeking elected positions. Thus, just as country constitutions set a minimum age for

voting, they also establish restrictions on the minimum age of candidacy for political office.

While the minimum age of voting is 18 years old for most of these 68 democracies (88%), there are a few exceptions. Five countries allow citizens 16 years and older to vote (Argentina, Austria, Brazil, Ecuador, and Nicaragua), and two permit 17-year-olds to vote (Greece and Indonesia). By contrast, for years the minimum voting age was higher in many East Asian democracies, matching their higher ages of majority.[8] In the late 2010s, however, several of these countries began to reform their voting-age laws to match democracies in other regions. Japan lowered the age of voting eligibility from 20 to 18 in 2016, South Korea lowered it from 19 to 18 in 2019, and Taiwan is, as of this writing, debating lowering the minimum age from 20 to 18 before the 2022 local elections.[9]

In comparison to voting, minimum ages of candidacy vary widely from as low as 18 years old in 23 countries (34%) to as high as 30 years old for Ecuador and Nigeria (until 2018). Formal age minimums for candidates tend to be lowest (18 years old) in Western and Eastern Europe, as well as in many former British colonies such as Australia, Canada, Kenya, New Zealand, and South Africa.[10] In contrast, age requirements are typically higher (20–25 years old) in Asia, Africa, and Latin America. Minimum age requirements are also common for local elected positions,[11] and tend to be higher for upper houses of national legislatures and executive offices. Age minimums in this sample range from 18 to 40 for upper houses, from 18 to 30 for prime ministers, and from 18 to 50 for presidents.[12]

[8]The age of majority, or legal threshold for adulthood, is 19 in South Korea and 20 in Japan and Taiwan. In 2018, Japan enacted a bill to lower the age of adulthood to 18, which will take effect in 2022. It is the first change to the age of majority in Japan in 142 years. Emiko Jozuka, "Japan Lowers Its Age of Adulthood to 18," *CNN*, June 15, 2018.

[9]Lee I-chia, "TPP to Push for Voting Age Change," *Taipei Times*, February 17, 2020.

[10]Although the United Kingdom only lowered its voting age from 21 to 18 in 2007.

[11]Within federal countries such as the United States, there can additionally be variation among sub-national governments. The minimum age ranges from 18 to 25 for state representatives, from 18 to 30 for state senators, and from 18 to 31 for governors. Ballotpedia, "State Legislature Candidate Requirements by State," https://ballotpedia.org/State_legislature_candidate_requirements_by_state.

[12]Age minimums for the upper house are 18 in eight countries (Australia, Belgium, Germany, Kenya, Netherlands, South Africa, and Spain) and 40 in three countries (the Czech Republic, Italy, and Paraguay). In many parliamentary systems, the age requirement to serve as prime minister is the same as being an MP, but it can be higher as in Israel, where a person must be 30 years old to be prime minister. Requirements for presidents range even more, from 18 years old in Finland, France, and Turkey to 50 in Italy.

In total, younger citizens in two-thirds of these democracies (45 of 68) must wait some time between gaining the right to vote and being able to run for elected office themselves. The average wait among countries with different minimum ages is six years, although it is as long as 14 years in Ecuador. Many youth rights groups in these democracies, viewing higher age of candidacy requirements as an unnecessary form of age discrimination, have advocated that countries should lower the minimum age requirement to match the legal voting age. In the early 2000s, countries such as Austria, Belgium, France, Turkey, and the United Kingdom implemented reforms to lower their minimum age of eligibility for parliament, although not always to the same age as that for voting. The movement gained greater international attention in 2016 thanks to the #NotTooYoungtoRun campaign, which was started by young people in Nigeria and civil society organizations such as the Youth Initiative for Advocacy Growth and Advancement (YIAGA) in Africa. As the movement gained traction, the UN Secretary-General's Envoy on Youth, Ahmad Alhendawi, announced in late 2016 that the UN would launch a global campaign to promote young people's right to run for office:

> Young people have every right to be active participants in civic and public life and it is time to ensure they no longer face arbitrary barriers to run for public office—whether at the local, regional or national level. Through the Not Too Young to Run campaign, my office will work with partners around the world to raise awareness about the issue of age discrimination and promote and expand the rights of young people to run for public office.
>
> (Ahmad Alhendawi, UN Envoy on Youth, November 22, 2016)

The #NotTooYoungtoRun campaign in Nigeria was ultimately successful in 2018, although the enacted bill did not reduce the minimum age requirement to 18 in line with the legal voting age. Instead, Nigeria reduced the age of eligibility for the House of Representatives from 30 to 25, for presidential candidates from 40 to 35, and for state government candidates from 35 to 30.

I expect that formal age barriers to becoming a voter or candidate can have both direct and indirect effects on the age composition of legislatures. A higher minimum age requirement will, by design, mechanically limit younger people's access to the parliament, but it may also indirectly

hinder even those who are eligible from running for office. Younger citizens who have to wait years before they can fully participate in the political process, whether as voters or candidates, may feel that their government is not interested in their opinions. Moreover, experience in local elected office is one of the most common pathways to serving in the national legislature (Blondel 1995), but accumulating years of local experience at a young age will be more difficult in countries where national age restrictions transfer to local governments. As a result, I hypothesize that the minimum ages for candidacy and voting will affect the age composition of parliaments.

> **H5:** The percentage of MPs under 40 will be negatively associated with a higher minimum age of candidacy.

> **H6:** The percentage of MPs under 40 will be negatively associated with a higher minimum voting age.

Apart from lowering the minimum age of candidacy, youth quotas provide a more direct, legal means of guaranteeing that a certain number of candidates or legislators will be below a given age. According to the literature on gender and ethnic or religious minorities, such quotas have proven quite effective in securing seats for under-represented groups (Krook 2009; Lundgren and Strøm 2016). In principle, the same rationale should apply for quotas aimed at increasing youth representation (Krook and O'Brien 2010). In countries where there are constitutional or statutory youth quotas, or where parties have voluntarily adopted such quotas, we should expect more young representatives in national legislatures.

Compared to gender, ethnic, and religious quotas, however, youth quotas are less common and less evenly applied. Of the 68 democracies in my sample, 13 (19%) have some form of youth quota, although only three of these quotas are imposed by law. Only Kenya has instituted reserved seats for younger citizens, although it sets aside just 3.4% of seats in the National Assembly specifically for MPs under 35.[13] The second is the Philippines, which has stipulated that 50% of candidates on party lists in the proportional representation component of its mixed electoral system must be from one of a set of under-represented groups, including young people. Tunisia is

[13] Embedded in this quota is the requirement that at least one of the reserved seats be held by a woman.

the third, which has a rule that at least one candidate under 35 must be placed in one of the top four positions on party lists. While all three of these quotas are protected by law, none set aside many seats for young people, and none of these countries have particularly high levels of youth representation.[14]

There are ten other countries where parties have adopted voluntary youth quotas.[15] Many of the quota percentages set by parties are higher than the legislated youth quotas. However, there is no guarantee that these younger candidates will be elected. In their earlier analysis using data before 2017, Stockemer and Sundstrom (2018) found that youth quotas were too limited in their application to impact youth representation. This analysis includes multiple election years and seven new countries that have adopted youth quotas, allowing us to test whether their use has expanded enough to be able to detect an effect on youth representation.

> **H7:** The percentage of MPs under 40 will be positively associated with reserved, legislative, or party youth quotas.

Finally, one last legal institution that I consider is term limits. By preventing incumbent legislators from standing for reelection at a certain point in their tenure, term limits may open up more spots in the parliament for younger members. However, the effectiveness of term limits on increasing youth representation hinges on the assumption that there are many potential younger candidates eager to run in the current system who cannot because there are not enough open seats. This may be the case in some democracies where resource and legal barriers are otherwise limited, but it is not immediately apparent that term limits can increase the number of younger parliamentarians.

Within the state politics literature in the United States, for example, studies have found that term limits have not increased the diversity of state legislatures, although they have led to a

[14] All three are close to the median level of youth representation (Figure 2.1). In the most recent elections for which I have data, 15.8% of the MPs elected in the Philippines were under 40 years old compared to 21.0% in Kenya and 22.6% in Tunisia.

[15] These ten countries are Croatia, El Salvador, Hungary, Mexico, Nicaragua, Romania, Senegal, Sweden, Turkey, and Ukraine.

decrease in legislative professionalism (Kousser 2010). As Carey, Niemi and Powell (2000) argue, it seems unlikely that term limits alone can fundamentally alter the type of person that seeks a seat in the legislature. In their study of Florida, Schraufnagel and Halperin (2006) further show that the only discernible impact of term limits on the demographics of legislators was average tenure. Term limits otherwise had no significant effect on the age, gender, race, ethnicity, religion, or occupational and educational backgrounds of state representatives.

Admittedly, term limits are difficult to study in a cross-national perspective, as they are only implemented in four of the 68 democracies in my dataset. The strictest limits are the no reelection rules used in Costa Rica and Mexico (until 2014). Otherwise, Bolivia and the Philippines limit their MPs to two and four terms, respectively. Term limits certainly prevent incumbents from remaining in office for long periods, but it remains to be seen whether their implementation can open the door to greater youth representation.

H8: The percentage of MPs under 40 will be positively associated with term limits.

2.3 Method and Data

To test these theoretical predictions at the cross-national level, I rely on linear regression models where each observation is the lower or unicameral chamber of a country's legislature that formed after a general election. The dependent variable in these models is the percentage of elected legislators that began their term before their 40th birthday.[16] The data for my independent variables come largely from the Legislative Assemblies dataset (Martin, McClean and Strøm 2020).

For H1, I measure to what extent each country's electoral system encourages candidates to develop a personal vote by using the *Incentive to Cultivate a Personal Vote (ICPV)* index (Carey and Shugart 1995; Johnson and Wallack 2012). The index ranges from 1 to 12 and is composed

[16] I focus only on legislators that enter the parliament via general elections, and thus do not include any members who entered the legislature mid-term either via temporary appointment or by-election.

of three factors: whether parties control access and/or position on the ballot; whether votes pool at the party-level, sub-party level, or not at all before they are applied to candidates; and whether voters cast their vote(s) for candidates or parties. I expect that countries with higher levels of the *ICPV* index will have fewer legislators under 40 years old.

To account for the amount of resources made available to incumbent legislators (H2), I use the *Legislative Resources* index developed by Martin, McClean and Strøm (2020). This index is set on a 0–100 scale, and gives equal weight to four factors: the size of the legislative staff (per member), the number of permanent standing committees, whether legislators commonly serve on just one committee or multiple committees, and the minimum salary of legislators.[17] As with the *ICPV* index, I anticipate that the *Legislative Resources* index will be negatively correlated with youth representation.

I collect data on youth structures within parliaments (H3) by consulting the Inter-Parliamentary Union (2018) as well as the parliamentary websites of individual countries. I then set the variable *Youth Legislative Organization* as equal to 1 if a country has a youth network or caucus, and 0 otherwise. For my last variable concerning resource barriers, I gather information on whether public funding is available for parties (H4) from the International IDEA Political Finance Database.[18] The *Public Funding for Parties* variable is also a binary indicator that accounts for countries that make public funds available to political parties.

For the hypotheses concerning legal barriers (H5–H8), most of the relevant data is available in the Legislative Assemblies dataset. *Minimum Age of Voting* and *Minimum Age of Candidacy* are continuous variables that represent the respective minimum ages in each country to either vote or stand for office in national elections. *Term Limits* is a dichotomous variable equal to 1 if a country has term limits, and 0 otherwise. Lastly, I collect data on the presence of youth quotas

[17] Martin, McClean and Strøm (2020) divide member salaries by the gross national income (GNI) per capita for each country, and then take the logarithm of the result, in order to make salaries more comparable across less and more developed countries.

[18] International Institute for Democracy and Electoral Assistance, "Political Finance Database," accessed June 1, 2020, https://www.idea.int/data-tools/data/political-finance-database.

from the Inter-Parliamentary Union (2018) as well as parliamentary and election websites. I then create the binary variable *Youth Quota* to capture countries that have reserved, legislated, or party youth quotas.

Apart from resource and legal barriers, I also include a set of control variables in the linear regression models to account for other institutional characteristics that differ among countries and the relative economic development of each country. Using the Legislative Assemblies dataset, I include three dichotomous variables that capture whether countries have *Presidential*, *Bicameral*, or *Federal* constitutions.[19] I also include *log(GDP per Capita)*, lagged one year before the election, as a measure of the overall level of economic development in the country.

2.4 Results

Before moving on the regression analyses, I present some descriptive statistics regarding the relationship between certain institutional barriers and youth representation. Figure 2.3 begins by displaying the percentage of MPs under 40 in majoritarian, mixed, and proportional representation systems. Consistent with my theory, there does appear to be a difference across electoral systems. Legislators under 40 are more common in democracies with proportional representation (22%) than either mixed (17%) or majoritarian (13%) electoral systems. As expected, more party-oriented electoral systems seem to result in younger legislatures than those that are more candidate-centered.

Figure 2.4 similarly investigates whether younger MPs are more common in countries with lower minimum ages of candidacy. Of these 68 democracies, 63 (93%) set their minimum ages at 18, 21, or 25.[20] Again, the descriptive patterns in the data are in line with my expectations. MPs under 40 are significantly more common when the minimum age is 18 (23%) than when

[19]The excluded categories are parliamentary or semi-presidential systems, unicameral parliaments, and unitary governments, respectively.

[20]Nigeria is not included in the 25 age limit because it reduced its minimum age after the elections in my dataset.

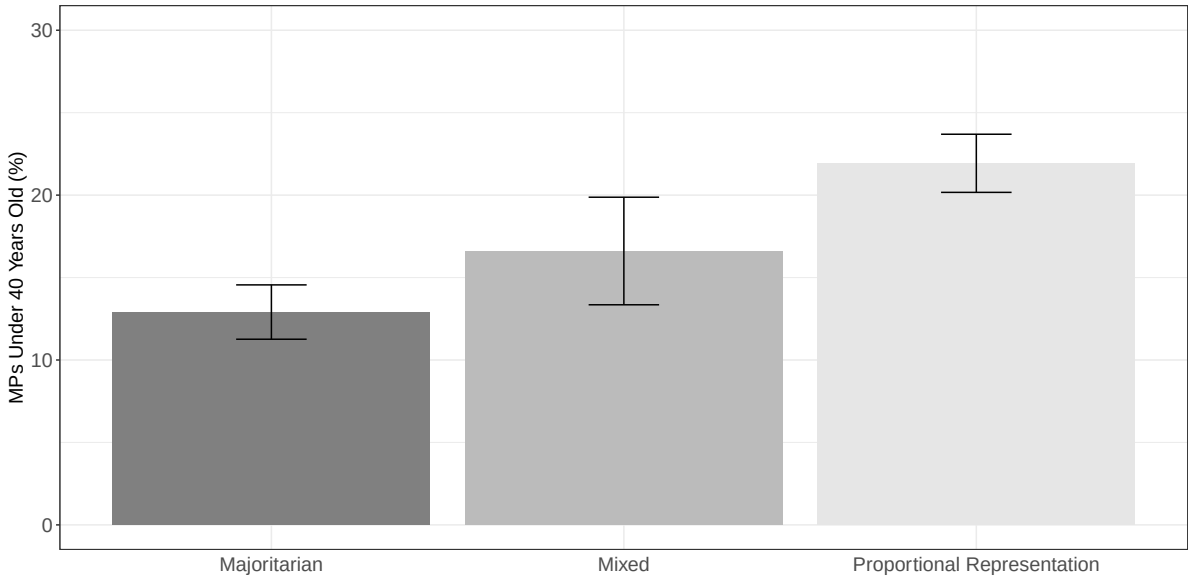


Figure 2.3: Youth Representation by Electoral System

Notes: Bars represent 95% confidence intervals. Data on MPs and electoral systems are collected by the author from parliamentary websites, the Inter-Parliamentary Union (2018), and Martin, McClean and Strøm (2020).

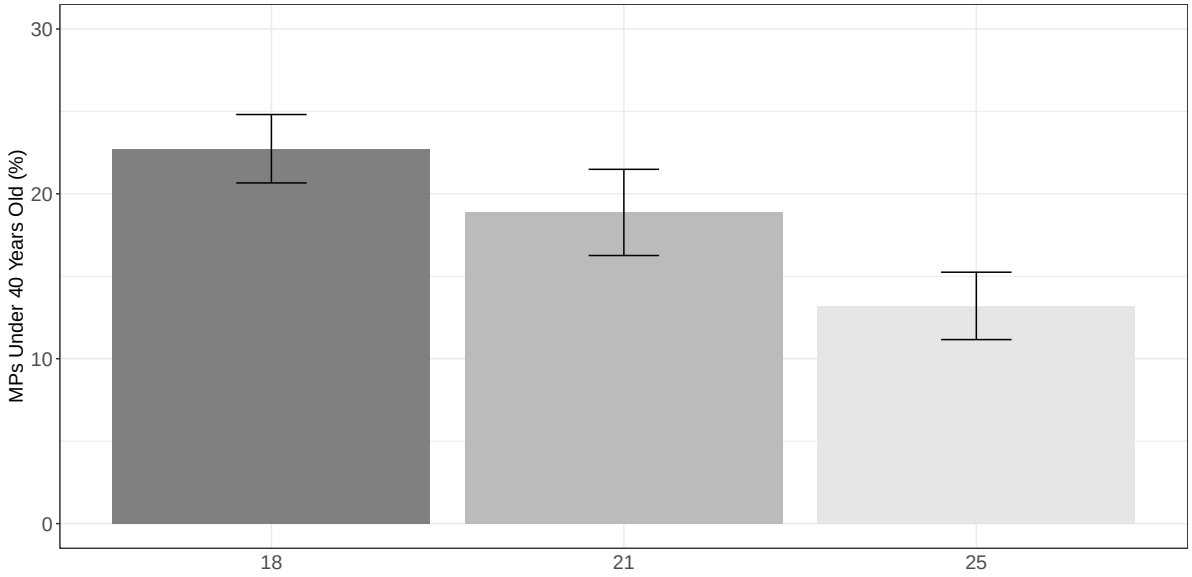


Figure 2.4: Youth Representation by Minimum Age of Candidacy

Notes: Bars represent 95% confidence intervals. Data on MPs and minimum ages of candidacy are collected by the author from parliamentary websites, the Inter-Parliamentary Union (2018), and Martin, McClean and Strøm (2020).

it is 21 (19%) or 25 (13%). Figure 2.4 thus provides some initial support for the argument that minimum ages of candidacy matter for youth representation.

Although Figure 2.4 is almost the mirror image of Figure 2.3, it is interesting to note that there is no significant correlation between these two institutional characteristics across democracies. The majoritarian democracies are almost perfectly split between having minimum ages of 18, 21, or 25, as are the countries with proportional representation.

To test my theoretical expectations more formally, Table 2.1 shows the results of my linear regression analyses. Model 1 tests for the effects of resource barriers, Model 2 examines legal barriers, Model 3 considers other institutional characteristics and economic development, and Model 4 includes all variables together. All models also include year fixed effects with standard errors clustered by country.[21]

The first model provides evidence that resource barriers are indeed predictive of the age composition of legislatures. In terms of electoral systems, I find that *Incentive to Cultivate a Personal Vote* has a negative and strongly significant effect on the percentage of MPs under 40 years old. Countries with electoral systems that place the onus on individual legislators to develop personal reputations, networks, and financial means to secure their victory have significantly fewer young legislators than countries whose systems encourage greater party support. As the value of the personal vote increases, so too does the average age of the legislature.

Within the legislature itself, Models 1 and 4 similarly indicate that countries that allocate more *Legislative Resources* for incumbents have fewer MPs in their 20s or 30s. As predicted, legislatures with larger staffs, more developed committee systems, and higher salaries are also those that have older legislators.

By comparison, Table 2.1 offers suggestive evidence that youth legislative organizations and public funding for parties are associated with higher levels of youth representation. I find that countries with youth legislative organizations have 2.8 percentage points more MPs under 40,

[21] I do not include country fixed effects in Table 2.1 because most of these institutional variables do not change over this period.

Table 2.1: The Institutional Determinants of Youth Representation in Legislatures

	MPs Under 40 Years Old (%)			
	(1)	(2)	(3)	(4)
Resource Barriers to Youth Representation				
Incentive to Cultivate a Personal Vote	−0.50***			−0.43**
	(0.18)			(0.18)
Legislative Resources	−0.09***			−0.07**
	(0.03)			(0.03)
Youth Legislative Organization	2.83*			2.84*
	(1.61)			(1.65)
Public Funding for Parties	4.78**			3.19
	(2.18)			(2.58)
Legal Barriers to Youth Representation				
Minimum Age of Candidacy		−1.01***		−0.57**
		(0.21)		(0.26)
Minimum Age of Voting		−1.02		−1.55
		(1.07)		(1.20)
Youth Quota		3.01*		2.82*
		(1.61)		(1.59)
Term Limits		3.06		7.55**
		(3.29)		(3.53)
Other Institutions and Development				
Bicameral			0.32	1.02
			(1.59)	(1.54)
Federal			−4.62**	−2.59
			(1.92)	(2.17)
Presidential			−2.67*	−1.56
			(1.61)	(1.78)
log(GDP per Capita)			1.24**	0.24
			(0.55)	(0.58)
Observations	154	154	154	154
R^2	0.17	0.17	0.12	0.29
Year Fixed Effects	Yes	Yes	Yes	Yes

Notes: Standard errors clustered by country in parentheses.

whereas public funding for parties increases youth representation by 3.2 to 4.8 percentage points. However, the significance level of both variables is sensitive to the other included variables and neither variable is statistically significant in Model 4.

Next, Model 2 examines the extent to which legal barriers hinder youth representation.

I find that the minimum age of candidacy has a significant, negative impact on the number of younger legislators. For every additional year of the minimum age, Models 2 and 4 indicate that the percentage of MPs under 40 drops by 0.6 to 1.0 percentage point. While these results are only correlations, the magnitudes of the effects suggest that should countries with relatively higher minimum age requirements such as Japan lower their minimum age of candidacy from 25 to 18 to match their minimum voting age—as suggested by the UN #NotTooYoungToRun campaign—the presence of MPs under 40 might increase by 4.0 percentage points.[22] In concrete terms, this would mean that Japan would elect 18 more representatives under 40 in each electoral cycle.[23]

Apart from the minimum age of candidacy, the evidence that other potential legal barriers restrict the access of younger people to the legislature is less clear. The coefficient estimate for minimum age of voting is in the expected negative direction, but does not reach conventional levels of significance in any model. There is some suggestive evidence that the implementation of youth quotas might increase the percentage of MPs under 40 by 2.8 to 3.0 percentage points, but the coefficients are only marginally significant across models. *Term Limits*, by comparison, is significant in Model 4, but its significance level appears to be driven by the other included covariates. The variable is not significant in the less specified Model 2, nor is it significant if run in a bivariate model.

Finally, I find that several other institutional and development variables are connected to youth representation, although none of them remain significant in Model 4. Bicameralism does not appear to matter, but both federalism and presidential systems are negatively associated with the number of MPs under 40. This relationship could be because federal and presidential countries often have other political offices at the executive or sub-national level that might be more attractive to younger politicians than the national legislature (Martin, McClean and Strøm

[22] Holding other variables constant, Model 4 suggests that –7 years to the minimum age of candidacy $\times$ –.57 = 3.99 percentage point increase in MPs under 40.

[23] Japan's House of Representatives has 465 members $\times$ 0.04 = 18.6. Similarly, should the U.S. House of Representatives lower its age of eligibility from 25 to 18, the model indicates that they would have 17 more representatives in their teens, 20s, or 30s (435 members $\times$ 0.04 = 17.4.

2020). For example, in countries such as the United States, career politicians may first seek to gain experience in the state legislature before attempting a national campaign. Apart from regime characteristics, countries with higher economic development are also more likely to have more young people in government, although again this effect disappears in Model 4. The correlation between development and youth representation may reflect the findings in many other studies that citizens in advanced democracies are more likely to support the representation of previously excluded groups such as women and minorities (Inglehart and Norris 2003).

In sum, I find the most support for the hypothesized effects of *Incentive to Cultivate a Personal Vote*, *Legislative Resources*, and *Minimum Age of Candidacy*, and more modest support for the influence of *Youth Legislative Organizations*, *Public Funding for Parties*, and *Youth Quotas*. Together, the findings suggest that reducing the resource and legal barriers for young people can increase their presence in political institutions.

2.5 Discussion

At the U.S. Constitutional Convention in Philadelphia in 1787, there was surprisingly little debate among the delegates before they decided to set the minimum age requirements at 25 for the House of Representatives, 30 for the Senate, and 35 for the presidency. The one exchange of note occurred between Pennsylvania delegate James Wilson (45), who later became a Supreme Court Justice, and Virginia delegate George Mason (62), a strong proponent of the Bill of Rights.[24] Mason argued in favor of an age minimum of 25 for the House, reasoning that "he would if interrogated be obliged to declare that his political opinions at the age of 21 were too crude and erroneous to merit an influence on public measures."[25] By contrast, Wilson argued against age

[24]Mason was one of just three delegates that refused to sign the Constitution. Scott Bomboy, "Why Does a Presidential Candidate Need to Be Thirty-Five Anyway?" July 26, 2016, https://constitutioncenter.org/blog/why-does-a-presidential-candidate-need-to-be-35-years-old-anyway.

[25]"Madison Debates," June 22, 1787, Yale Law School Avalon Project, accessed August 1, 2020, https://avalon.law.yale.edu/18th_century/debates_622.asp.

restrictions because they would "damp the efforts of genius, and of laudable ambition, [and that] there was no more reason for incapacitating youth than age, where the requisite qualifications were found."[26] Wilson cited the example of William Pitt the Younger, who became the youngest British prime minister at 24 years old in 1783.[27] Mason's views, however, ultimately won the day and the motion to set age minimums passed 7 to 3.[28]

In the more than 200 years since the drafting of the Constitution, there have been no successful challenges to these minimum age restrictions in the United States. Japan has similarly kept its age minimums the same since 1945. Yet, increasingly reformers have called on countries to reduce the age of candidacy to be in line with the age of voting because of concerns about age discrimination. Several countries have lowered their age of candidacy since the early 2000s, and the United Nations even began a global campaign to advocate for lower age restrictions in 2016. The findings in this chapter are correlational, but they support the UN's campaign: countries with lower age minimums, even those with otherwise restrictive institutions, tend to have higher numbers of younger representatives.

In this chapter, I have explored the incidence of youth representation in the world's 68 largest democracies and found significant variation across countries. I provide evidence that countries that require candidates to amass significant personal resources, and those that grant significant resources to incumbent legislators, have far fewer legislators under 40. There is also suggestive evidence that public funding for parties, youth legislative organizations, and youth quotas can increase youth representation in parliaments. In contrast, I find little evidence that the minimum age of voting or term limits can be effective means of diversifying the age groups

[26] *Ibid.*

[27] Wilson also mentioned Henry St. John, 1st Viscount Bolingbroke, who entered the British parliament at age 23 in 1701 and went on to hold several notable cabinet positions including secretary at war, secretary of state for the Southern Department (which later became the Home Office), and secretary of state for the Northern Department (which later became the Foreign Office).

[28] After the convention, later writings by James Madison and James Monroe suggested that the delegates also worried that age restrictions were necessary to limit the influence of hereditary politics, with children succeeding their parents in office. James Madison, *The Federalist Papers,* No. 62, February 27, 1788, and James Monroe, "A Native of Virginia, Observations upon the Proposed Plan of Federal Government," April 2, 1788.

represented in legislatures.

The lack of a stronger finding for youth quotas likely stems from a lack of their implementation to date rather than their ineffectiveness. If youth quotas are instituted via reserved seats or legislative initiatives, set at higher percentages, and enforced by governments, then there is no reason to think that they would be any less effective than gender quotas (Krook and O'Brien 2010). Of course, this chapter does not weigh whether implementing such quotas is the most desirable means of increasing youth representation. On the one hand, these quotas can compensate for the resource and legal barriers that young people face and ensure the numerical representation of young people in parliaments. On the other hand, such quotas subvert the democratic process by taking the decision of who is elected away from the voters. There is also no guarantee that parties and other MPs will treat young people elected by the quota system the same as other MPs and involve them equally in the policymaking process. Moreover, broader reforms that address other aspects of institutions, such as those that create high burdens on candidates to build networks and accumulate financial resources to win seats, should have the added benefit of not only increasing youth representation, but also the representation of other disadvantaged groups such as women, ethnic minorities, and working-class individuals (Krook 2009; Hughes 2011; Carnes 2012).

While I focus on advanced democracies, and Japan in particular, future studies should further investigate youth representation in developing countries. One of the main aims of my dissertation is to analyze whether young people need descriptive representation in legislatures in order to get adequate substantive representation of their interests because they are otherwise out-numbered in the electorate by a growing population of senior citizens that turn out to vote and donate to campaigns at higher rates. I also focus on the social challenges that come with aging populations, from governments encouraging young people to have more children to struggling to provide care for the increasing number of retirees. In contrast, developing countries have much younger populations that likely face a much different set of problems from high unemployment to poverty, hunger, poor education systems, corruption in government, inadequate infrastructure,

conflict, and health insecurity. For example, it is striking that the largest representation gaps between voters and their representatives occur in the youngest countries in Africa. More work is needed to explore the consequences of this drastic under-representation for youth interests in these countries.

Finally, one limitation to this chapter is that the results are not causally identified. Thus, I am not able to make causal claims about what would happen to a country if it switched its electoral system, lowered its minimum age of candidacy, or reduced the benefits available to incumbents. As more data is gathered on the ages of MPs over a wider period, it will become possible to investigate country-level reforms with a larger N and more sophisticated research designs such as panel analyses with two-way fixed effects. Likewise, the accumulation of better individual, candidate-level data will permit future researchers to investigate age interactions with other characteristics of elected officials, including their gender, race, ethnicity, and socio-economic background.

While implementing such research designs at the cross-national level pose a challenge, in the next chapter I investigate these theoretical claims more rigorously by focusing on institutional reforms and variation within Japan.

Chapter 3

Supply: Political Institutions and Youth Representation in Japan

Why does Japan have so few younger politicians compared to other democracies? The results from Chapter 2 suggest it is because Japan has an electoral system that encourages the personal vote; a high minimum age of candidacy for both national and local elections; and because it lacks either institutionalized youth legislative organizations or youth quotas.[1] There is some public funding available for parties, but elections are still costly for individual candidates, making it difficult for younger people to compete. Compared to other democracies, Japan does not provide elected officials with exceptionally high salaries or large staffs, but incumbents still benefit significantly from the ability to provide targeted benefits to their supporters as well as highly restrictive rules on election campaigns (Scheiner 2006; McElwain 2008).[2]

In this chapter, I focus on Japan and continue investigating the role of institutions in determining the number of younger representatives. As in Chapter 2, my central expectation is that younger politicians will be less common in electoral settings where institutions make it

[1] A group of MPs did create the Youth Policy Parliamentarian Group in May 2018.

[2] Japan's score in the *Legislative Resources* index is close to the median of the 68 democracies (Martin, McClean and Strøm 2020).

difficult for candidates to win seats without strong local ties, personal financial resources, extensive prior experience, or name recognition. In comparison, I expect greater youth representation in contexts where the party's reputation is more important and resource and legal barriers are lower.

In the first half of the chapter, I test these theoretical expectations by taking advantage of institutional reforms over time in Japan. While Japan's House of Representatives (HOR) used a candidate-centered electoral system until 1993 (multi-member districts with the single non-transferable vote), electoral reform in 1994 instituted a new mixed system (single-member districts and proportional representation) that led to a greater emphasis on party competition. Apart from electoral reform, the major parties in Japan also reformed their candidate recruitment practices over time to move from a closed system that favored local ties, past elected experience, and political dynasties to an open system that gave greater control to central party leaders and provided new incentives to select a more diverse slate of candidates. Analyzing the effects of these two reforms over time thus allows me to test for their effect on youth representation while otherwise holding certain institutional and cultural characteristics specific to Japan constant.

In the second half of the chapter, I further test my theories by capitalizing on institutional variation across municipalities. To do so, I introduce an original, candidate-level dataset on municipality elections: the Japan Municipal Elections Dataset (JMED). By scraping online electoral records, I create a new dataset that includes demographic information on nearly 200,000 municipal assembly and mayoral candidates competing in over 18,500 elections over twenty years (1999–2019). With this new dataset in hand, I then explore how youth representation varies across municipalities depending on the population and magnitude of their electoral districts, which I argue can affect the relative value of personal compared to party reputations. In doing so, I also exploit a feature of Japanese local electoral law and use a fuzzy regression discontinuity design (RDD) to estimate the causal effect of district magnitude on the number of younger candidates that run in municipal assembly elections.

I find evidence at both the national and municipal levels to support my expectations. When

Japan reformed the HOR from a more candidate-centered to a more party-centered electoral system, the number of younger representatives increased. Likewise, when party leaders took greater control of candidate nominations and opened up competition, the major parties began to recruit a younger and more diverse slate of first-time candidates. While these reforms thus diversified the age composition of the HOR, I also discuss why the effects of these reforms have been uneven over time. The percentage of legislators under 40 increased from 5% before reforms to 16% in 2009 but then fell to less than 7% in 2020.

In municipalities, I find that younger politicians are more common in metropolitan areas where parties are more influential and less common in smaller towns and villages where personal votes and connections matter most. The variation across municipalities is significant: 20% of candidates for the average Tokyo ward assembly are under 40 years old compared to just 2% for a typical village assembly. Finally, using the fuzzy RDD, I provide causal evidence that higher district magnitudes can lead to more young people running for an assembly seat. I then conclude by discussing possible mechanisms, from parties having greater incentives to support younger candidates to voters beginning to see a candidate's youth as a desirable quality when presented with a large number of otherwise middle-aged or older candidates.

This chapter thus serves two purposes. First, it concludes the discussion of how supply-side, institutional characteristics can shape youth representation by providing evidence from reforms and variation within Japan. Second, it introduces the rest of the dissertation's focus on municipal politics in Japan. The original dataset (JMED) discussed in the chapter facilitates the empirical analyses for all of the subsequent chapters of the dissertation.

3.1 Youth Representation in National Institutions

Table 3.1 provides an overview of the elected offices in Japan at the municipal, prefectural, and national levels of government. To run for office in Japan, an individual must be a citizen,

a resident of the locality, and meet the minimum age requirement: 25 years old for municipal assemblies, mayors, prefectural assemblies, and the House of Representatives, and 30 for governors and the House of Councillors.[3] At the municipal and prefectural levels, Japan's electoral system consists of single-member districts for executive positions and multi-member districts for assemblies, with the members in the latter elected via the single non-transferable vote (SNTV) system. Both of these electoral system types rank near the top of the *Incentive to Cultivate a Personal Vote* index (Carey and Shugart 1995) discussed in Chapter 2.

At the national level, both chambers of the national parliament (Diet) use mixed electoral systems that combine majoritarian district contests with proportional representation (PR). The lower chamber (House of Representatives) uses both single-member districts and closed-list PR, while the upper chamber (House of Councillors) has multi-member districts (with SNTV) and open-list PR. The district magnitude (number of representatives elected per district) ranges widely depending on the office, from one in single-member districts to 50 in the PR tier of the House of Councillors and the assemblies of a few larger municipalities.

Table 3.1 also demonstrates how Japan's government is parliamentary at the national level, but presidential at the municipal and prefectural levels. Prime ministers are not directly elected but are selected by members of the House of Representatives. Mayors and governors, in contrast, are directly elected by voters in single-member districts. The term for most offices in Japan is for four years. The one exception is the House of Councillors, where terms are six years, but elections are staggered, such that half of the members stand for reelection every three years. All election terms are fixed except for the House of Representatives, where the prime minister and their cabinet can dissolve the assembly for an election any time within the four-year maximum term.

[3] Public Offices Election Act (1950), Article 10.

Table 3.1: Electoral Institutions in Japan

Institution	Age of Candidacy	Electoral System	District Magnitude	Number of Members	Term (Years)
Municipalities (1,741)					
Municipal Assembly	25	MMD-SNTV	1–50	6–92	4
Mayor	25	SMD	1	1	4
Prefectures (47)					
Prefectural Assembly	25	MMD-SNTV	1–8	35–127	4
Governor	30	SMD	1	1	4
National					
House of Representatives	25	SMD, CLPR	1–29	465	4
House of Councillors	30	MMD-SNTV, OLPR	1–50	245	6

Notes: Municipalities include 790 cities, 745 towns, 183 villages, and 23 special wards in Tokyo. MMD-SNTV = multi-member district single non-transferable vote; SMD = single-member district (first-past-the-post); CLPR = closed-list proportional representation; OLPR = open-list proportional representation. In the House of Councillors, elections are staggered, with half of the members up for reelection every three years.

3.1.1 Explaining the Age Bias in the House of Representatives

From 1947 until 1993, the 466 to 511 members of the HOR were elected in multi-member districts via the single non-transferable vote (SNTV) system. The district magnitude (M) ranged from one to six, with the vast majority falling between three and five. Voters cast a single vote for their preferred candidate, and the top M-finishers in each district won a seat. Under the SNTV system, these votes were non-transferable, which meant that they could not be reallocated to other members of the same party should a voter's preferred candidate lose. This system is in contrast to other countries, such as Ireland, that use the single transferable vote (STV) system.

The conservative Liberal Democratic Party (LDP) formed following the 1955 election and quickly became the dominant party, with the Japan Socialist Party (JSP) as the main opposition force. Although the Democratic Socialist Party (DSP) broke off from the JSP to form its own party in 1960, the religious party Komeito entered electoral competition in 1964, and the Japan

Communist Party (JCP) started to gain popularity in the 1970s, the period from 1955 to 1993 was otherwise remarkably stable in terms of the relative number of HOR seats held by each party. Over this nearly forty-year period, the LDP won a majority of seats in every election and maintained control of the government. This period of stability has often been referred to as the "1955 System."

While competition between parties remained stable, intra-party competition became a defining feature of the 1955 System. Japan's multi-member districts meant that any party or coalition of parties seeking a majority or significant foothold in the HOR needed to run more than one candidate in most, if not all, districts (Nemoto, Pekkanen and Krauss 2014). Multiple candidates from the same party thus competed against one another within the same district, which meant that they could not rely solely on the party label to get elected. Instead, candidates needed to differentiate themselves from others by cultivating a personal vote (Carey and Shugart 1995). Over time, candidates came to rely more on their individual support organizations (*koenkai*) than the party to win elections, although LDP candidates did receive support from factions within the party (Krauss and Pekkanen 2011). The relatively high district magnitudes further meant that candidates in many districts could often get elected with as little as 15% of the vote, and sometimes less than 10%. As a result, candidates tended to compete by targeting narrow constituencies within their district rather than campaigning on broad-based policies. LDP candidates in particular often won reelection by distributing pork to these small groups of supporters through public works projects and subsidies (Scheiner 2006).

Under the SNTV system, the barriers to entry for younger candidates were high because of three factors that were particularly important for winning elections, known in Japan as the "three *ban*" (*sanban*): *jiban* (support network), *kaban* (financial resources), and *kanban* (name recognition).

The first, *jiban* (support network), was primarily maintained by the *koenkai*, which were formal groups used to mobilize electoral support on behalf of the candidate. These organizations

essentially institutionalized the personal vote by facilitating the candidate's ability to distribute funds and other benefits to specific local supporters. *Koenkai* in practice tended to consist of a network of smaller groups, ranging from those based on a particular neighborhood to those connected to interest groups such as labor unions and agricultural cooperatives, that were united because of their shared link to the individual candidate (Krauss and Pekkanen 2011). The *koenkai* were especially critical for mobilizing voters to turn out on behalf of the candidate in elections. Candidates consistently responded in surveys during this period that *koenkai* represented their most common means of gathering voters (Bouissou 1999).

The second important factor for an election, *kaban* (financial resources), tended to refer to the tremendous expense that came with building and maintaining the *koenkai*. While the *koenkai* were especially important during election campaigns, the challenge for prospective candidates was that the timing of elections was often difficult to predict. Under Japan's parliamentary system, it was up to the prime minister and their cabinet to decide precisely when to dissolve the HOR for an election.[4] The cabinet often called for an election with little to no warning, and when they did, the constitution stipulated that an election had to be held within just 40 days (McClean 2020*b*). The official campaign period, within which the *koenkai* could openly campaign for the candidate, was even shorter at just 15 to 25 days during this period (McElwain 2008).

Given the uncertainty of the electoral calendar, politicians instead chose to operate their *koenkai* throughout the inter-election period. While members paid small fees to belong to the *koenkai*, these fees did not come close to covering the candidate's expenses. Moreover, candidates often rewarded even minimal contributions with "trips to hot springs, sightseeing tours of the Diet building, records, fans, towels, and souvenirs" (Curtis 1999, 132). All in all, estimates suggest that starting up a *koenkai* from scratch was likely to cost between $500,000 and $1,000,000, with a similar annual cost to maintain them (Masumi 1979; Kitaoka 1985). Harada and Smith (2014)

[4]The term of the HOR is four years, but the constitution allows the cabinet to call an election any time within that window. If the parliament is not dissolved early, an election must be held at least once every four years. The Constitution of Japan, Article 7.

further note that candidates had to pay $14,000 on average just to gain access to the ballot, and by 1993 spent $117,900 on average during their election campaigns.

Finally, individual candidates needed *kanban* (name recognition) to set themselves apart from their co-partisan competitors within the same district. As Smith (2018) writes, the importance of name recognition was evident even in the means by which voters cast their ballot: by physically writing the candidate's name rather than punching a hole or filling out a bubble. This system remains in use today, and candidates are well aware of the importance of conveying exactly how to write their name to voters. As described in Chapter 5, candidates devote significant time and effort in their campaigns to creating personal posters (where their name is written in large characters) and repeating their names via loudspeakers in locations throughout the district. Many candidates with more difficult-to-write characters (*kanji*) in their names choose to advertise themselves using the simpler *hiragana* alphabet instead, and recent research has even shown that candidates can lose out on votes if they have names that are too complicated for some voters (Muraoka 2019).

The combination of these three factors (*sanban*) made it especially difficult for young people to run for national office. Building and maintaining a successful *koenkai* depended on strong local ties to a community. However, many young people would leave their hometowns to attend university and begin their careers in the more metropolitan areas surrounding Tokyo and Osaka, where there were more job opportunities. Members of *koenkai* themselves also tended to be older, as these individuals had more free time to dedicate to the organization throughout the year, while members in their 20s and 30s were rare. Moreover, few people could amass the necessary financial resources to run for office at an early age, let alone wider name recognition in the district compared to their older competitors.

Because building a new *koenkai* was so difficult, younger aspirants for public office typically sought to inherit their *koenkai* from a sitting representative when that representative either retired or passed away in office. This system, where an MP passes their *koenkai* on to their successor, is a significant factor behind why second-generation legacy candidates were

so prevalent in Japan during this period, as representatives often chose their children or other relatives as their successors (Smith 2018). Young people who entered the HOR as part of a political dynasty were very common, especially within the LDP. Of all the representatives who entered the HOR before they were 40 years old during this period, nearly half (46%) were part of a political dynasty, including a staggering 84% of LDP members.[5]

Otherwise, young people outside of political families could also put themselves in line for a *koenkai* by first working as a personal secretary to an MP without a clear hereditary successor, although securing this position also typically required political connections (Fukui 1997). Among MPs under 40, 39% had prior experience as a Diet secretary, including 59% of LDP members, meaning that many dynastic candidates also worked for current MPs while they waited for an opportunity to run. In cases where the candidate themselves did not name a successor, the decision typically fell to senior members of the *koenkai*, local party leaders, and faction leaders in the case of the LDP, who tended to select candidates with significant local experience in either local organizations or local elected office (Reed 2009).[6] A quarter of the candidates who entered office before 40 had been previously elected to either a municipal or prefectural assembly seat, with 18% of LDP members having this experience.[7] In total, it is worth noting that between 1955 and 1993, not a single LDP member entered the HOR before 40 years old who was neither a member of a political dynasty nor a local politician or former Diet secretary.[8]

[5]Based on data from the Japan House of Representatives Electoral Dataset (JHRED) from Smith and Reed (2018).

[6]Within the JSP and DSP, candidate selection was often undertaken by public and private union organizations together with local party organizations. As a result, most of the candidates from these two parties were either leaders in labor union movements or local politicians (Smith 2018).

[7]Based on data from JHRED (2018).

[8]The one possible exception is Shoukei Arai (38), who entered the HOR in 1986 after working as a career bureaucrat within the Ministry of Finance. While Arai had not worked as a Diet secretary, however, he had worked as a secretary within the ministry to then Minister of Finance Michio Watanabe. Arai was groomed by Watanabe to run for office and later joined the Watanabe faction of the LDP.

3.1.2 Expectations from Electoral and Party Reforms

Following the 1993 election, the LDP lost control of government for the first time in 38 years to a coalition of eight smaller parties for a brief period of just eleven months. Prime Minister Morihiro Hosokawa of the Japan New Party, the first non-LDP prime minister since 1955, led the coalition as they passed dramatic reforms to Japan's electoral system.

The new electoral system, known as a mixed-member majoritarian (MMM) system, consists of two tiers. In the first tier, 289 members (reduced over time from 300) are elected in single-member districts (SMDs). In the second tier, 176 members (reduced over time from 200) are elected from closed party lists in 11 regional blocs according to proportional representation (PR). Unlike the old system, voters now cast two votes at the polls: one for a candidate from the SMD component (by writing the candidate's name) and one for a party in the PR list component (by writing the party's name). The allocation of seats in the two tiers is calculated independent of one another, which is different from the mixed-member proportional (MMP) systems used in countries such as Germany and New Zealand, where there is compensation between the two tiers to increase proportionality in the legislature.

In the MMM system, parties can list candidates in both tiers, which means that a candidate that fails to win their district seat can still make it to the HOR if their position on the party list is high enough to qualify for a seat.[9] Within the LDP and Democratic Party of Japan (DPJ), which formed in 1996 and became the largest opposition party after electoral reform, the general practice has been to award placements on the party list based on how well candidates do in their district elections. In other words, parties prioritize candidates who are the "best losers," that is, those who come closest to winning their SMD contest. In contrast to the two major parties, smaller parties such as Komeito have tended to not dual-list their candidates because of the difficulty in winning the SMD seat and instead rely on the proportional representation tier to elect their

[9]These candidates are sometimes called "zombie" candidates because they "die" in the SMD tier, but are "resurrected" in the PR tier (Pekkanen, Nyblade and Krauss 2006).

preferred candidates.

With the new electoral system in place, many reformers and observers hoped that it would usher in several significant changes to Japanese politics (Ramseyer and Rosenbluth 1993; Ozawa 1994). First and foremost, the introduction of SMDs was designed to shift electoral competition from a candidate-centered system to a more party-oriented system where candidates would campaign on broader policies rather than narrow geographic interests (Duverger 1954). Mechanically, the move from multi- to single-member districts meant that parties no longer had any incentive to nominate more than one candidate per district, effectively eliminating intra-party electoral competition. The inclusion of the PR tier, on the other hand, was meant to ensure the continued representation of smaller parties in the HOR. Together, reformers hoped that the new system would lead to a new era of programmatic party competition and alternation in government.

Apart from a shift from intra-party to inter-party competition, many scholars were optimistic that the reforms might also lead to the end of specific characteristics of the 1955 System that were often seen in a negative light, including the outsized role of *koenkai* and factions (e.g., Ramseyer and Rosenbluth 1993). Due to the value of the personal vote and the high costs of election campaigns, many blamed the SNTV system for the rampant corruption that occurred in the 1970s, 80s, and early 90s as many politicians, particularly within powerful LDP factions, relied on more illicit means to secure the funds needed for election campaigns (Curtis 1988). Other observers, however, were less sanguine that reform would lead to a decrease in candidate needs for the *koenkai*, as the electoral reform did not change many of Japan's restrictive campaign laws (Christensen 1994). Moreover, given that many members of the HOR at the time had already invested significant resources into their *koenkai*, there were concerns that path dependency alone would permit their continued survival for years to come.

Though over 25 years have passed since the 1994 reform, the extent to which electoral competition in Japan has transformed into one based on parties and policies rather than the personal reputations of individual candidates remains a topic of much debate (e.g., Rosenbluth

and Thies 2010; Krauss and Pekkanen 2011). In the initial years after electoral reform, institutional inertia appeared to be a powerful force as the LDP retook control of parliament and the cabinet in 1996. Although the LDP lost its ability to consistently secure a majority of seats by itself, the party entered into a coalition with the smaller Komeito in 1999 and held on to government until 2009. Thus, it took 15 years after electoral reform for the DPJ to grow and develop into an opposition force that could successfully win a majority of seats in the HOR. The DPJ's victory in 2009, however, was short-lived: after a difficult three years in government—including the challenge of managing the tremendous devastation brought by the 2011 earthquake, tsunami, and nuclear disasters (Samuels 2013)—the DPJ suffered a crushing defeat in the 2012 election to the LDP-Komeito coalition, which continues to control government as of this writing. After being ousted from power, the DPJ eventually splintered into several smaller parties and then disappeared altogether before the 2017 election, leaving the future of the opposition in Japan unclear.

Apart from the failure of opposition parties to coalesce and offer voters a clear alternative to the LDP, there are also aspects of the MMM system itself that still make it challenging for younger candidates to enter the fray. Because of the ability to dual-list candidates, larger parties do not nominate many pure PR candidates. Instead, these parties encourage nearly all of their candidates to try and win an SMD seat, with the PR tier acting as a safety net for the "best losers," that is, those with the best chances of winning the district seat in the next election. As a result, most candidates and MPs are encouraged to behave as if they represented an SMD (McKean and Scheiner 2000).

Thus, while Japan has a PR tier, the incentives for parties in Japan are different from countries with fully PR systems such as Denmark and Sweden. The LDP and DPJ have some incentives to put forward a diverse slate of candidates, including younger candidates, but they also prioritize candidates with the resources to be competitive in the SMD tier. At the same time, the ability to be rescued by the PR tier makes the MMM system less harsh for younger

candidates than pure SMD systems, such as in the case of the U.S. House of Representatives, where elections are truly winner-take-all. As a result, while the MMM system has decreased some of the incentives for parties to rely on candidates that already have the *sanban*, such as hereditary candidates, candidates still face incentives to build and maintain *koenkai* to help win their district seats (Krauss and Pekkanen 2011).

Despite this debate, there are good reasons to expect that electoral reform led to an increase in the number of younger candidates and MPs. Since electoral reform, several studies have provided evidence that candidates are indeed starting to campaign more on policy-based appeals as opposed to pork-barrel politics (e.g., Catalinac 2016). Parties also have new incentives to nominate candidates in line with the party's policy agenda, rather than only caring about a candidate's personal reputation, as they want to appeal to a broader range of voters within the district (Rosenbluth and Thies 2010). Moreover, reforms to Japan's campaign finance laws accompanied the electoral reform in 1994 and introduced public funding for parties. While campaigns in Japan are still notoriously expensive, the reforms have made it much easier for parties to nominate their preferred candidates in district elections rather than only those with the means to self-finance their campaigns. New parties such as the DPJ were quick to take advantage of these public funds, given that they lacked incumbents and those who had well-developed *koenkai* from decades in power.

In short, I expect that there will be more younger candidates after electoral reform and the move to an MMM system:

> **H1:** Younger candidates for the HOR will be more common after electoral reform (under the MMM system) than before (under the SNTV system).

Apart from the system-level change to the rules governing electoral competition, many parties in Japan have also responded to the new MMM system by implementing internal reforms to their candidate recruitment processes. Unlike the LDP, the DPJ as a new party did not have a long history of identifying quality candidates via *koenkai* and local party organizations (Scheiner

2006). Lacking a pool of candidates with either dynastic ties or experience as a Diet secretary or local politician, the party instead decided to implement an open, national recruitment contest beginning in 1999 ahead of the 2000 election. Relying on open recruitment helped the party to grow and also had the effect of lowering barriers to entry for previously disadvantaged candidates such as women and young people. After the DPJ used the system successfully in the 2000 and 2003 elections, the LDP experimented with open recruitment in a 2004 by-election and then adopted it for the 2005 general election. While not all candidates are selected via open recruitment, the two major parties have increasingly come to rely on the system. In their study of the 2000 to 2012 period, Smith and Tsutsumi (2016) found that the DPJ selected 27% of its new SMD candidates via open recruitment, while the LDP used the system to recruit 43% of its new SMD candidates.[10]

With the rise of open recruitment, electoral competition under the MMM system also witnessed party leaders taking on a more significant role in candidate selection. In doing so, these leaders have often viewed identifying and grooming younger candidates as helpful in achieving their overall party and policy goals. Many of these candidates came to the attention of leaders because of the new open recruitment process. For example, before the 2005 election, Prime Minister Junichiro Koizumi (LDP) expelled several older members of his party who opposed his postal reform efforts. Koizumi then hand-picked several younger candidates—referred to as "assassins" by the media—to run and defeat these expelled members in their districts.[11] In total, 83 first-time legislators entered the HOR as part of the LDP that year, and they were collectively dubbed the "Koizumi children."[12]

Likewise, in the run-up to the 2009 general election, Ichiro Ozawa, chief election strategist of the DPJ, used a similar tactic by personally recruiting several younger candidates, many of

[10]See Smith and Tsutsumi (2016) for a more detailed overview of the differences in how the DPJ and LDP implemented the open recruitment system.

[11]Daniel Drezner, "Attack of the Lipstick Ninjas," *Foreign Policy*, September 3, 2005.

[12]Charles T. McClean, "The LDP's Freshmen," *Asia Unbound*, Council on Foreign Relations, December 18, 2012.

them women, who were known as the "Ozawa children" or alternately the "Ozawa girls."[13] Ozawa then deployed these candidates to "parachute in" to the districts of mostly elderly, male LDP incumbents to present a stark contrast between the fresh, new faces of the DPJ and the typical image of the LDP. Ozawa used this strategy to much success, and the 143 first-time DPJ lawmakers that entered the HOR in 2009 played a significant role in the ability of the DPJ to unseat the LDP from power.

Lastly, given the success of open recruitment and the LDP's shock at losing power in 2009, the LDP has utilized open recruitment heavily since returning to power in 2012. The party even began to institute open recruitment contests in cases of returning LDP candidates who had lost their districts by large vote margins but made it to the HOR because the party's PR list saved them (Smith and Tsutsumi 2016).[14] In practice, implementing this policy had the effect of forcing out many older representatives from the party. For example, when 70-year-old Rokuzaemon Yoshida lost his seat in Niigata 1st district to a DPJ opponent by a large margin in 2009, but managed to enter the HOR via the PR component, the LDP forced him to compete in an open-recruitment contest for his re-nomination in 2012. Yoshida ended up being replaced by 28-year-old former bureaucrat Toru Ishizaki, who went on to win the SMD election. That same year, the LDP similarly used this open recruitment rule to replace 74-year-old incumbent Koki Chuma with 45-year-old newcomer Hiroyuki Onishi (Smith 2018).

Overall, my expectation is that opening up recruitment to a greater diversity of candidates has increased the number of younger candidates for the HOR:

> **H2:** Younger candidates for the HOR will be more common under open recruitment than closed recruitment.

[13] Yoko Nishikawa, "Seven Election Words to Watch For," *Reuters*, August 29, 2009.

[14] The rule was instituted for any candidates who lost their SMD contest in 2009 and won less than 70% of the winning candidate's vote, although there were a few exceptions (Smith and Tsutsumi 2016).

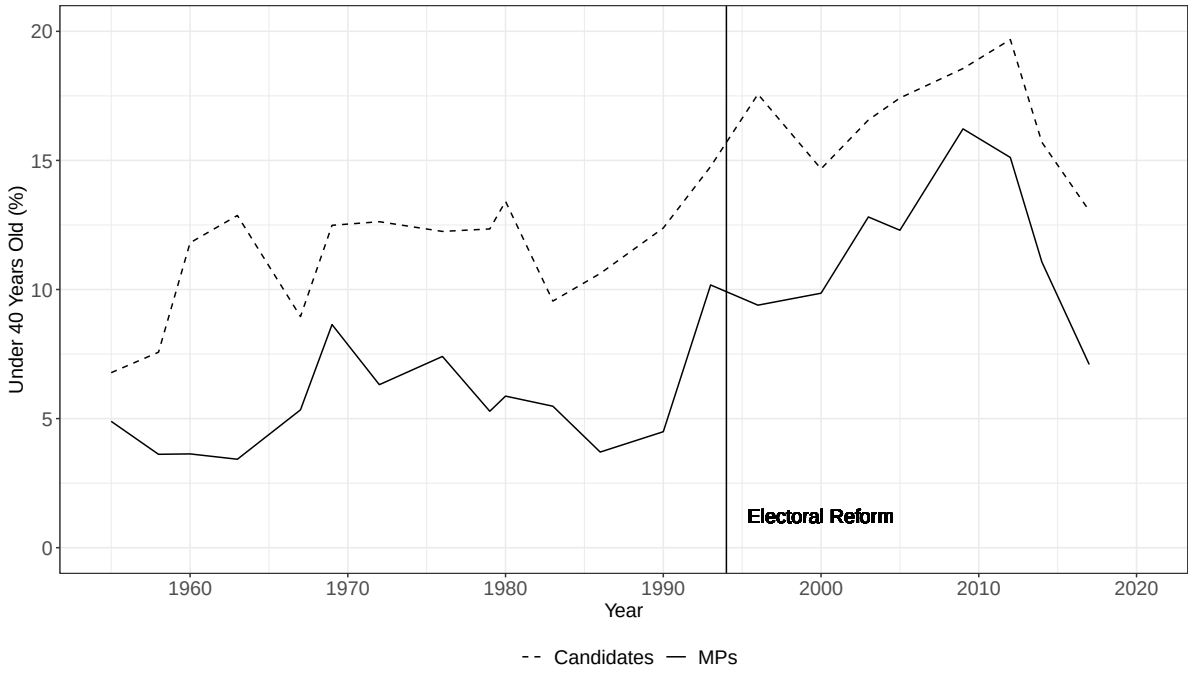


Figure 3.1: Younger Candidates and MPs in Japan, 1955–2017

Notes: Reed and Smith (2018).

3.1.3 Data and Results

To investigate these theoretical expectations, I draw on the Japan House of Representatives Electoral Dataset (JHRED) from Smith and Reed (2018). This panel dataset covers all 28,740 candidates who ran for the HOR from 1947 to 2017, including detailed information on their names, age, sex, party, background, recruitment method, and ultimate election result. I focus on the 23,488 candidates that competed in races between 1955, when the LDP first came to power, and 2017.

Figure 3.1 plots the percentage of candidates (dotted line) and MPs (solid line) under 40 years old in every election for the HOR since 1955. The 1994 electoral reform, which occurred between the 1993 and 1996 elections, is demarcated using a vertical line.

Looking at Figure 3.1, we can see that there does appear to be a relationship between the electoral system and youth representation. The percentage of MPs under 40 hovered between

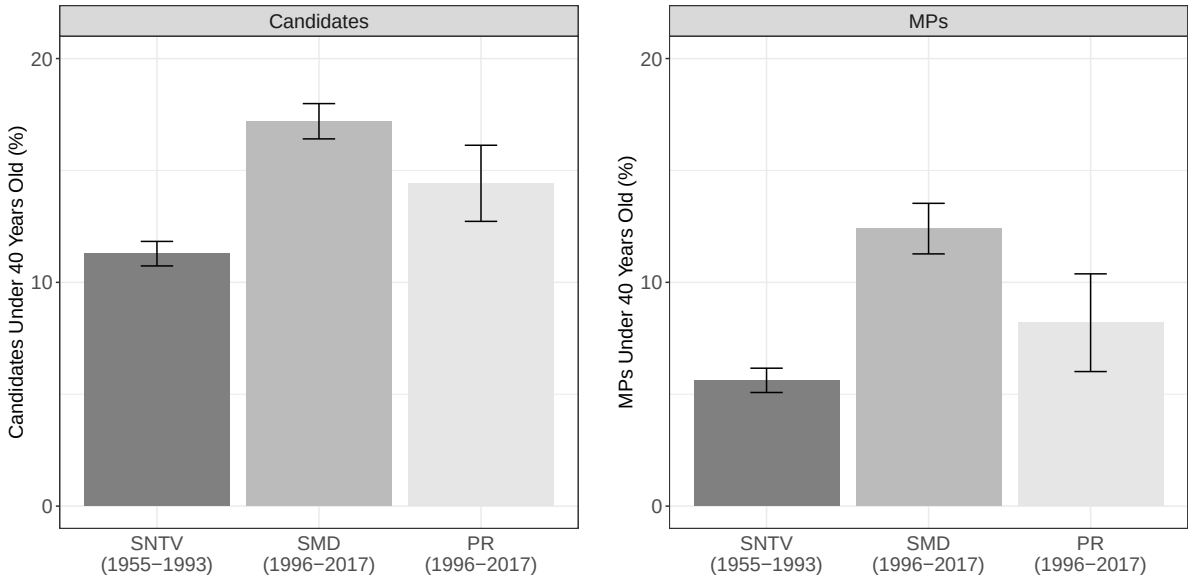


Figure 3.2: Younger Candidates and MPs by Electoral System

Notes: Bars show 95% confidence intervals. Data is from Smith and Reed (2018).

3% and 8% under the SNTV system but has routinely exceeded 10% since the 1994 reform, with the exception of the 2017 election (7%). Similarly, the percentage of younger candidates has also increased from 10 to 15% before reform to 15 to 20% in the MMM years. While Japan experienced a small uptick in the number of younger MPs in the 1993 election that immediately predated reform, this made sense, given that this was a year with an unusually high level of inter-party competition that brought many new parties to power and ultimately led to the electoral reform (Catalinac 2016).

As a more formal, cross-sectional comparison, Figure 3.2 shows the average percentage of candidates and MPs under 40 years old by electoral system type. For the post-reform MMM system, I display the percentage of candidates and MPs separately in each of the two tiers. The SMD tier includes dual-listed candidates, whereas the PR tier represents only pure PR candidates.

Compared to the SNTV system, I find that the percentage of candidates and MPs in their 20s and 30s increased by 5.9 and 6.8 percentage points, respectively, in the SMD tier, and by 3.1 and 2.6 percentage points in the PR tier. Thus, while both tiers of the MMM system increased

youth representation, it was the SMD tier that opened the door the most to more younger members of the parliament. As discussed, this is likely because many larger parties prefer to encourage new, younger candidates to gain a foothold by winning a district seat. The PR tier was instead typically reserved for rescuing the "best losers" who fell just short of this goal. Some young people did enter the parliament as pure PR candidates, although this was less common, even among many smaller parties.

Did the change in party recruitment methods similarly increase the number of younger candidates recruited by the major parties? As a test of this proposition, I examine the percentage of first-time candidates from the LDP and DPJ who were nominated via closed and open recruitment. JHRED includes data on the recruitment method for candidates up through the 2014 HOR election, which is also the last election contested by the DPJ. Between 1996 and 2014, the LDP recruited 21% of its first-time candidates using open recruitment, compared to 15% by the DPJ. The percentage of candidates nominated via open recruitment increased significantly over time, particularly within the LDP, who selected 71 (52%) of its 137 first-time candidates using open recruitment in the 2012 election that brought the party back to power.

Figure 3.3 presents the results. I find that candidates selected via open recruitment were substantially younger than those selected via more traditional methods across both parties. Within the LDP, 23% of candidates chosen in closed recruitment were in their 20s and 30s, compared to 43% of those who joined the party ranks via open recruitment contests. The differences in the DPJ are even larger. An impressive 71% of candidates selected by the DPJ in open contests were under 40 years old, nearly double the percentage for candidates chosen outside of these contests (33%). Figure 3.3 further indicates that the new DPJ recruited more young people overall into its party than the LDP. In doing so, the DPJ represented a stark contrast to the main opposition JSP during the SNTV period. Only 10% of the JSP's first-time candidates were under 40 (1955–1993), which was half the percentage of the LDP's candidates at 20%.

Electoral and party reforms have opened the door to greater youth representation in the

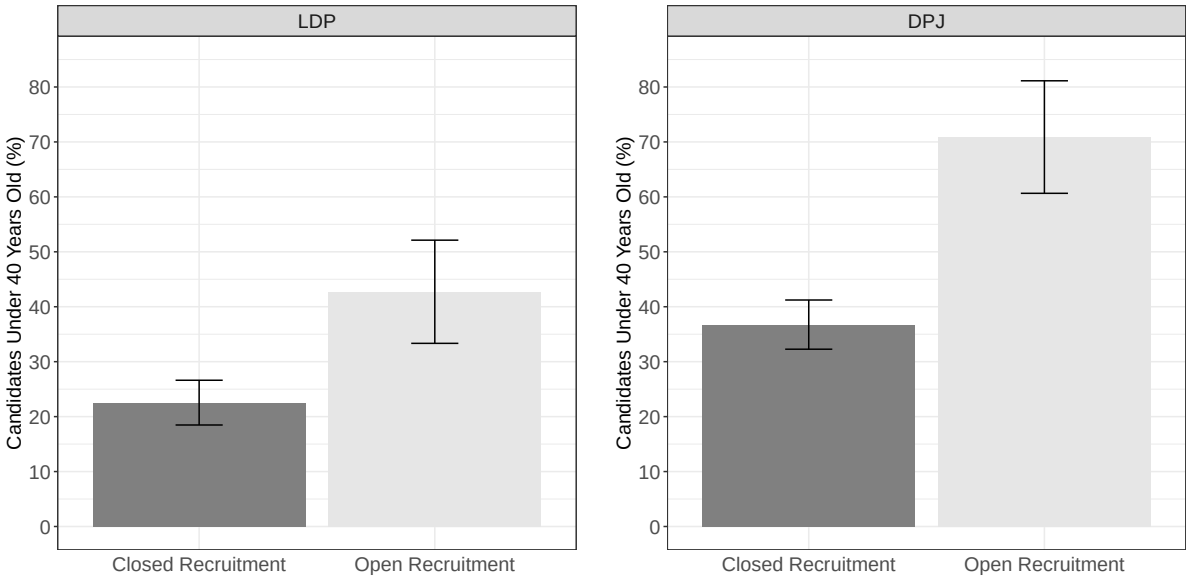


Figure 3.3: Younger First-Time Candidates by Party and Recruitment System

Notes: Bars show 95% confidence intervals. Data is available for 1996 to 2014 (Smith and Reed 2018).

HOR, but they have also led to a more diverse slate of younger MPs. Younger legislators elected since 1996 are about half as likely to be from political dynasties (18%) as those elected before electoral reform (46%). In comparison, they are five times more likely to be women (15% vs. 3%). More young parliamentarians have come to office with prior experience in the national bureaucracy, business, medicine, and education, and fewer young people entering through the traditional pathways as a Diet secretary or local politician.[15]

3.2 Youth Representation in Municipal Institutions

Young people are under-represented not only in the national parliament but across all government levels in Japan. As discussed in Chapter 1, municipalities often find it difficult to encourage anyone to run, let alone young people. Many elections are uncontested, and there

[15]The percentage of first-time MPs under 40 who worked in the bureaucracy increased from 9% to 17%, in business from 8% to 13%, in medicine from 2% to 5%, and in education from 7% to 9%. In contrast, young people who worked as a Diet secretary decreased from 39% to 30%, and the percentage with local elected experience decreased from 25% to 19%. All data comes from JHRED (2018).

Table 3.2: Municipalities in Japan

		Median Values				
Type	Number	Population (total)	Area (km^2)	Population Density (population/km^2)	Population Change (last 5 years)	Age (years)
Villages	183	2,795	79.7	29.9	–7.1%	56.1
Towns	744	11,178.5	100.7	101.4	–6.6%	54.9
Cities	791	66,995	176.0	412.9	–2.8%	48.7
Wards	23	333,560	20.4	16,549.1	3.5%	43.4
Japan	1,741	127,094,745	377,970.8	340.8	–0.8%	46.7

Notes: Number of municipalities as of April 1, 2020. Population data is from the Census of Japan (2015).

is poor diversity in the composition of municipal institutions. Women comprise just 14% of assembly members and 2% of mayors. The median age is 59 for an assembly member and 62 for a mayor, compared to 55 for a member of the HOR. Young people make up 30% of voters, but just 6% of assembly members and 2% of mayors begin their terms in office before their 40th birthday.

Table 3.2 provides a descriptive overview of the 1,741 municipalities in Japan as of April 1, 2020. Japan's national territory consists of 47 prefectures, which are further divided into 791 cities, 744 towns, 183 villages, and 23 special wards in Tokyo. Municipalities differ significantly in population, from Yokohama with a over 3.7 million residents to Aogashima with less than 200. They also vary widely in the age distribution of their residents, from the oldest village of Iitate with a median age of 89 to the youngest city of Nagakute with a median age of 38.[16] As Table 3.2 documents, cities and wards are typically more densely populated and have younger populations than towns and villages. Towns and villages are shrinking in population at much faster rates than other municipalities, whereas wards and some larger cities are growing in population.

[16]Census of Japan (2015).

Unlike the HOR, elections for these 1,741 municipalities are not held on the same day. Initially, all municipalities did hold elections for their assembly members and mayors simultaneously in April 1947. Because the terms for these offices are four years, the original intent was that the "Unified Local Elections" would be held in April every subsequent four years. However, over the past seven decades, the timing of elections in many municipalities has changed due to municipal mergers, assembly dissolutions, and the death or resignation of mayors (Fukumoto and Horiuchi 2011). As a result, in present-day, 42% of assembly elections and 13% of mayoral elections are held every four years in April, while the rest are evenly distributed across months and years.[17]

Despite the differences in demographics and election timing across municipalities, Japan's unitary government structure means that municipal assembly members and mayors take on largely similar roles across the country. The exception to this rule is that the central government can grant larger cities additional autonomy. Cities with a population of 200,000 or more can be designated as "core cities" (*chukaku shi*) and delegated additional powers and functions typically handled at the prefectural level.[18] Cities with a population of 500,000 or more can become "designated cities" (*seirei shitei toshi*) and granted even greater authority over areas ordinarily under prefectural administration.[19] Designated cities are further sub-divided into wards, and these wards constitute districts in elections. However, the wards in these designated cities do not have autonomous assemblies and mayors—these bodies are reserved for the 23 special wards in Tokyo, which are treated municipalities. As of April 1, 2020, there are 60 core cities and 20 designated cities.[20]

While most municipalities have similar discretion over expenditures, the ability of mu-

[17]Percentages are based on elections held between 2016 and 2019 (JMED 2020).

[18]Local Autonomy Act, Article 252, Section 22. A separate designation of "special city" (tokurei shi) for cities with populations above 200,000 used to exist, but this designation was abolished on April 1, 2015. Cities were then given until March 31, 2020, to be granted core city status, which they could do even if their population had dropped below 200,000 in the interim. See also Web Japan, "Local Self-Government: Growing Citizen Awareness and a Push for Local Authority," 2019.

[19]Local Autonomy Act, Article 252, Section 19.

[20]Ministry of Internal Affairs and Communications, *Chihoukoukyou dantai no kubun* (Classification of Local Governments), April 1, 2020, https://www.soumu.go.jp/main_sosiki/jichi_gyousei/bunken/chihoukoukyoudantai_kubun.html.

nicipalities to rely on tax revenues as opposed to transfers from the central government is heterogeneous and, as discussed below, affected by their age demographics.

3.2.1 Explaining the Age Bias in Municipal Institutions

Why does Japan often have more young people represented in national as opposed to municipal institutions? Since electoral reform, the percentage of HOR members under 40 has routinely exceeded 10% and reached 16% in 2009 before declining to 7% in 2017. However, politicians in their 20s and 30s have never made up more than 7% of the assembly members elected in a given year since 1999, nor more than 3% of elected mayors.[21]

At first glance, it may seem surprising that there are not more young people in local government. Except for the largest cities in Japan, campaigns for municipal offices are typically less expensive than those for the HOR. The minimum deposit needed to be on the ballot as an assembly candidate ranges from nothing in villages and towns to 300,000 yen ($2,800) in most cities and Tokyo wards. These amounts are 10 to 20 times less than the entry fees for the HOR.[22] Mayoral races have higher minimum deposits, but these are still just 500,000 yen ($4,700) for towns and villages and 1 million yen ($9,400) for most cities and wards.[23]

In most municipal races, candidates also need far fewer votes to win an election than they do for the HOR. The median population of an SMD for the HOR in 2014 was 440,973, compared to the median municipality that year at 25,228.[24] The smaller scale of competition and lower entry fees should lower the financial resources (*kaban*) needed to build a support network (*jiban*) or increase a candidate's name recognition (*kanban*). Given that local offices are also an important stepping stone for younger people who aspire to enter national office, the lack of younger candidates in municipal races thus appears puzzling.[25]

[21] These statistics draw on data from the Japan Municipal Elections Dataset, which is described later in the chapter.
[22] The minimum deposits are 3 million yen ($28,000) for the SMD tier and 6 million yen ($56,000) for the PR tier.
[23] For the twenty designated cities, the minimum deposit needed is higher at 2.4 million yen ($22,400).
[24] Smith and Reed (2018); Census of Japan (2015).
[25] Since 1993, a third of HOR members entered parliament with previous elected experience as either a mayor or

My argument is that this shortage of younger politicians can be explained by two institutional factors that make the value of the personal vote even more important at the local level than in national contests.

The first is the near absence of party competition in most municipal elections. The vast majority of municipal politicians do not officially belong to parties, and instead, run for office as independents. While less than 5% of HOR legislators do not belong to a party, approximately 80% of municipal assembly members are independents together with more than 99% of mayors.[26] In smaller towns and villages, the percentage of non-partisan assembly members exceeds 90%. As a result, party competition is not a significant factor in most municipal races, except for some cities and wards (Muramatsu 1997; Horiuchi 2009). With that being said, the absence of party competition in elections does not mean the absence of parties altogether—the LDP has strong roots in many municipalities throughout Japan. A majority of independent politicians are typically thought to be "affiliated with the local branch organizations of the LDP and/or the *koenkai* of LDP Diet members" (Horiuchi, Saito and Yamada 2015, 13), particularly in towns and villages. Other scholars have also noted how local LDP politicians use non-partisan labels strategically to avoid the national party's reputation in areas where it is less popular and effectively neutralize competition from opposition parties (Scheiner 2006).

The second factor is the electoral system. When Japan reformed the HOR's electoral system in 1994, it left the electoral system for all other elected positions in the country unchanged. Municipal assemblies thus still use the same SNTV system that was blamed for giving rise to highly personalistic and corrupt campaigning in the HOR until 1993.[27]

A key institutional difference between the SNTV used by municipal assemblies and that previously used by the HOR is that nearly every municipality in Japan chooses its assembly members in a single, at-large district (ALD). Thus, while the district magnitude (M) for the HOR

the member of a municipal or prefectural assembly (Smith and Reed 2018).

[26]This marks a sharp contrast from prefectural assemblies as well, where about a quarter of legislators are independents (Matsubayashi, Ueda and Uekami 2015).

[27]The SNTV system is also used by prefectural assemblies and the majoritarian tier of the House of Councillors.

typically ranged between three and five, the M at the municipality level is equal to the size of the assembly itself and can range from as little as six in smaller villages to as high as 50 in some cities and Tokyo wards. The only exceptions to this rule are the 20 larger, designated cities in Japan. These cities have multiple districts within their municipality to correspond with their administrative wards (where the M is between one and eight).

Thus, in most areas of Japan, voters are tasked with casting a single non-transferable vote in races that can have dozens of candidates competing against one another within the same district. Given that most candidates are independents, voters typically cannot rely on partisan cues and rely heavily on the individual characteristics of candidates in making their decision. Even in races where parties are more prevalent, party labels are still not very helpful because of high levels of intra-party competition between the multiple co-partisan candidates running in the same at-large district. Thus, the combination of weak parties and the SNTV-ALD system creates even stronger incentives for cultivating a personal vote than the HOR's prior electoral system. In fact, SNTV systems with high district magnitudes are the electoral system type thought to most incentivize the personal vote in the original index created by Carey and Shugart (1995).

The higher value of the personal vote may help explain the shortage of younger candidates in municipal institutions relative to the HOR. In many municipalities throughout Japan, candidates cannot rely on assistance from parties and compete instead on their personal reputations, local ties, financial resources, and name recognition to win elections. As discussed previously, all of these factors can put young people at a distinct disadvantage compared to older competitors in their municipalities.

3.2.2 Expectations from Institutional Variation Across Municipalities

While municipalities may have fewer younger politicians than the HOR as a whole, I also expect there to be significant heterogeneity *across* municipalities because of how a municipality's population size interacts with its district magnitude and assembly size.

An important institutional characteristic is that although the magnitude of at-large districts and population size are correlated, the relationship is not linear. Instead, for years the Local Autonomy Act set upper limits on the assembly's size as a step function of the population—an institutional feature that I will discuss in greater detail later on in the chapter as it permits the use of a fuzzy regression discontinuity design. The act was amended in 2011, but the ultimate result is that there are substantial discrepancies across municipalities in the number of representatives per capita. In smaller towns and villages, there can be one assembly member for every 100 residents. In contrast, in larger municipalities, there can be one member for every 18,000 residents.[28]

I expect younger politicians to be less common in towns and villages, where populations are smaller, and there is a higher number of representatives per capita. In these smaller municipalities, few votes are needed to win a seat, and elections often result in tiny vote margins between candidates where even a single ballot can be decisive (Horiuchi 2005).

As just one example, we can look at the election for a typical town such as Ikata in Ehime Prefecture, which has a population slightly above 10,000 and an assembly size of 18 members. In the election held on April 19, 2009, 21 candidates contested the seats in the 18-member at-large district. The candidate that captured the 18th and final seat, 55-year-old incumbent Kinuhisa Kobayashi, won with just 355 votes. He won by a margin of only 21 votes over the next candidate, 59-year-old incumbent Kazunori Takeuchi, who lost their seat. Even the candidate with the most votes, 45-year-old incumbent Otomo Fukushima, held onto his seat with only 651 votes.[29]

In this type of electoral environment, the logic underlying intra-party competition in the HOR's prior MMD-SNTV system only becomes exacerbated with more candidates and no partisan cues. Because even a single vote can make a difference, candidates have strong incentives to make full use of their support networks (*koenkai*) to mobilize voters. They also rely heavily

[28] It is worth noting that historically there has also been significant malapportionment in the HOR, and even as of this writing some single-member districts are twice the population of other districts. Malapportionment has tended to favor rural areas where towns and villages are more common, who in turn are traditionally the strongest supporters of the long-ruling LDP (Christensen 1994).

[29] JMED (2020).

on delivering targeted benefits to narrow constituencies in exchange for their support. Since so few votes are needed, there is no need to campaign on broad-based policies, as candidates can meet face-to-face with every one of their supporters (Matsubayashi and Ueda 2012). Instead of policy positions, what is most important is the candidate's reputation and connections to the neighborhood. The system also greatly favors incumbents, who can use the perquisites of their position to win over voters with government-funded jobs and generous subsidies (Horiuchi, Saito and Yamada 2015). Just as with the HOR's former SNTV system, the fierce level of competition can make these races a hotbed of corruption, scandals, and even electoral fraud (Fukumoto and Horiuchi 2011). As a result of this intense competition, turnout in smaller municipalities often exceeds 80 to 90%, much higher than the turnout for national elections (Horiuchi 2005). In our example of Ikata, the turnout in 2009 was 90.3%, down slightly from 94.0% in 2005.

The high premium placed on incumbency and local ties creates a high barrier for younger candidates seeking to enter the race. However, the situation is made even more difficult because most of these small towns and villages cannot sustain their budgets without help from the central government. Because these towns and villages have rapidly aging populations, their tax revenues are relatively limited, and they are especially reliant on transfers from the central government. To fund their clientelistic relationships with their voters, politicians in towns and villages have historically gone to great lengths to cultivate relationships with national-level politicians. These municipal assembly members and mayors affiliate themselves with the local LDP branch organizations and LDP HOR members and devote significant effort to campaigning on behalf of the HOR member in exchange for access to government transfers and pork-barrel projects (Horiuchi and Saito 2003; Scheiner 2006). These co-dependent relationships help both sub-national and national politicians win reelection, and make it difficult for newcomers like young people to make inroads into municipal institutions.[30]

[30]While dynastic politicians have declined at the national level after electoral reform, they remain prevalent in many municipal assemblies under the SNTV system as incumbents pass down their *koenkai* and relationships with central elites to their children (Smith 2018).

Thus, even though few votes are needed, and entrance fees are nominally low, competition for these votes is intense, and elections can quickly become very expensive. As a result, I anticipate that few young people will run for office or win elections in town and village races.

In contrast, I expect that younger candidates will be more common in cities and wards. In these larger municipalities where there are fewer representatives per capita, it is more difficult for politicians to rely solely on targeted mobilization to win elections (Matsubayashi and Ueda 2012). As the number of votes needed to win a seat increases, party membership starts to become more valuable for candidates (Aldrich 1995), and candidates running as independents become less common (Matsubayashi, Ueda and Uekami 2015). While fewer than 10% of candidates for towns and villages run on a party label, this number expands to 30 to 40% for larger cities and wards.[31] As candidates come to rely more on parties, these parties also have incentives to think about supporting a diverse slate of candidates in the municipality, including younger people. Finally, voters in more metropolitan areas in Japan are also thought to have more liberal attitudes toward social norms, including age norms, and to care more about policies than pork-barrel politics (Eto 2010; Curtis 1988). These urban voters may thus be more supportive of young people serving in elected positions than more rural voters. They may also care more about the policies that these young candidates stand for than their relative capacity to deliver targeted benefits compared to their older competitors.

> **H3:** Younger candidates for municipal assembly and mayor will be more common in elections for wards and cities than towns and villages.

Finally, I also theorize that younger candidates will be more common in assembly races with higher district magnitudes and larger assembly sizes, even when accounting for population.

The relationship between the magnitude of at-large districts and youth representation is not necessarily straightforward. On the one hand, if population size is held fixed, then comparative institutions scholars have generally surmised that increasing district magnitude in SNTV systems

[31] JMED (2020).

will increase the value of the personal vote by increasing intra-party competition (Carey and Shugart 1995). In smaller Japanese municipalities, too, an increase in the assembly size means even more representatives per capita, which could further increase competition, geographically targeted benefits, pork-barrel politics, incumbency advantages, and corruption, crowding out newer, younger candidates.

On the other hand, as district magnitudes become higher and higher, I anticipate that at a certain point, the *types* of characteristics that can serve as personal-vote earning attributes (PVEAs) will also begin to change (Shugart, Valdini and Suominen 2005). At high district magnitudes, the electoral system becomes very complicated for voters, making it cognitively challenging to collect information on so many candidates.

For example, while Ikata represents a medium-sized town with 18 assembly members, at the low end of the spectrum, small village assemblies can have few as six members. At the other end of the spectrum, in 2015, Setagaya Ward in Tokyo had no fewer than 82 candidates contest seats for its 50-person assembly. Thus, voters were asked to evaluate these 82 candidates somehow, write a single name on their ballot, and the top 50 vote recipients won a seat. While parties were present in this election for a major metropolitan area, intra-party competition was intense, making it difficult for voters to rely on partisan cues. The election featured 28 candidates competing openly under the label of the ruling coalition (with 18 LDP candidates and 10 Komeito candidates).

As the choice set of candidates increases, I anticipate that *youth* can start to become a PVEA. Since there is no party mechanism to simplify the set of options for voters, and since the task of acquiring information on the backgrounds of so many candidates is so costly, I expect that many voters will instead make judgments based on low-information cues such as a candidate's age. There is a great deal of evidence from other studies, for example, that complex information environments lead voters to lean more on information shortcuts such as a candidate's gender, race, and name recognition (e.g., Aguilar, Cunow and Desposato 2015). In the context of Japan's

House of Councillors, Reeves (2015) similarly shows that voters are more likely to rely on mere recognition and vote for celebrity candidates as district magnitude increases. Pointing to a different mechanism, Nemoto, Pekkanen and Krauss (2014) similarly argue that local ties become less valuable as PVEA in high district magnitude races in the House of Councillors because parties prefer candidates with more diffuse support in the district.[32] While we lack evidence that looks explicitly at age, I anticipate that younger candidates can benefit similarly because their youth helps them to stand out among mostly older candidates when the number of candidates is large—as in large district magnitudes.[33]

In sum, I expect younger candidates to be more common when the district magnitude is higher. In my interviews with younger mayors during my fieldwork, I found that they similarly believed that their youth could give them a potential advantage in a large-M assembly race. As one example, they mentioned the importance of campaign posters to their election campaigns.[34] These colorful posters are affixed to large bulletin boards in high-traffic areas throughout the municipality, with equal space on the board allotted to each candidate, and feature the candidate's face. Mayors with prior experience running for municipal assembly told me that they felt that their younger faces helped their poster to stand out among an otherwise crowded board of mostly middle-aged and senior men. They also mentioned that when there were many candidates in the race, they would be more likely to list their ages on their poster in large writing to achieve a similar effect.[35]

> **H4:** Younger candidates for municipal assembly will be more common in elections with higher district magnitudes.

[32] Nemoto, Pekkanen and Krauss (2014, 4) argue that while candidates still have incentives to cultivate local ties, parties interested in winning a majority of seats in the assembly can see candidates with geographic support bases as liabilities if these support bases are too small. If the vote totals the candidate earns are too low, then they may not only fail to win a seat but take away votes that could have helped elect another marginal loser from the party.

[33] The survey experiments in the next chapter (Chapter 4) provide evidence that voters use a candidate's age as an informational shortcut and are favorable toward younger candidates running for office.

[34] These posters are discussed in greater detail in Chapters 4 and 5.

[35] Author interviews with Mayors 3, 6, 7, and 10.

3.2.3 Japanese Municipal Elections Dataset (JMED)

One challenge to the study of local politics in Japan has been the lack of centralized, publicly available data on either candidates or outcomes in municipal assembly and mayoral elections. While scholars have long benefited from candidate-level datasets for prefectural and national elections (Horiuchi and Natori 2019; Maeda 2016; Smith and Reed 2018), a comparable dataset does not exist for municipal elections. The absence of systematic data on municipal politicians makes it impossible for researchers to answer questions such as whether political institutions affect the average age of municipal representatives (this chapter), as well as whether the age of elected officials has an impact on local representation and policy outcomes (Chapters 4, 5, and 6).

I fill this gap by building an original dataset of municipal assembly and mayoral elections held between 1999 and 2019, which I call the Japanese Municipal Elections Dataset (JMED). To construct JMED, I begin by using web scraping to collect information from go2senkyo.com, an online platform in Japan that aggregates data from newspapers, elections returns, individual users, and candidates themselves on national, prefectural, and municipal elections. The website is operated by the Ichini company and is a well-known and well-used source for Japanese voters. As of the time of this writing, the website has 56 million visits annually.[36]

In building JMED, I focus only on municipal elections. As an example, Figure 3.4 shows a page from go2senkyo.com for the mayoral election held in Shijonawate, Osaka, on January 15, 2017. The top half of the web page provides general information about the election, including the announcement date, election date, turnout rate, turnout rate in the previous election, and the number of candidates. The bottom half of the page, in turn, lists information for each candidate in the election, including their photo, name (written in kanji and katakana), age, sex, incumbency status, previous occupation, party (if any), and vote total. The rose next to the candidate's photo indicates the winner of the election.

[36]Ichini, http://ichi-ni.jp/#service, accessed April 1, 2020.

Figure 3.4: Example Mayoral Election from go2senkyo.com

Source: Shijonawate Mayoral Election, January 15, 2017. go2senkyo.com. Accessed October 1, 2019.

Using web scraping, I parsed through the HTML for thousands of go2senkyo.com pages, such as the one shown in Figure 3.4 to create a dataset on municipal candidates. The final JMED includes information on 198,440 candidates who competed in 18,549 elections over twenty years (1999–2019) in 2,534 municipalities. Broken down by election type, JMED has data on 183,473 candidates for 10,882 municipal assembly elections and 14,967 candidates for 7,667 mayoral elections.

While JMED includes the near universe of municipal candidates between 2005 and 2019, there is some missing data before 2005. Japan used to have over 3,200 municipalities in 1999, but this number began to decline in the early 2000s due to a wave of municipal mergers promoted by the national government. Most of these mergers were concluded by the mid-2000s. The number of municipalities shrank to 2,395 by April 2005, 1,821 by April 2006, and 1,727 by April 2010.

As of this writing, there are 1,718 municipalities in Japan, or 1,741 if you include the 23 special wards in Tokyo.[37] It is difficult to know what data is missing for these early elections given the dataset's novelty, but there appear to be some elections missing from smaller towns and villages that no longer exist because they merged with larger towns and cities.

Otherwise, the election and candidate characteristics in JMED are nearly complete. JMED includes the announcement date, election date, municipality name, and unique municipality code for every election; the incumbency status, gender, and vote totals for over 99% of candidates; and age for over 93% of candidates. The officially listed party affiliation is available for every candidate, but there is limited to no information on recommendations or support offered by parties for municipal candidates. Notes about a candidate's background other than their incumbency status are also unfortunately rare (less than 2% of candidates). Turnout is available for 85% of contested elections, although 29% of the municipal elections in JMED are uncontested.

Constructing JMED by scraping a crowd-sourced website such as go2senkyo.com offers several advantages over other means of collecting data on municipal elections. The first is that it is inexpensive. By building JMED in this way, I can benefit from the public good provided by go2senkyo.com without needing to duplicate the initial investment made by the creators of the site, who expended significant effort and resources to organize an online platform where individuals and candidates could upload information on elections.

A second advantage is speed. There is, of course, some initial investment required on the part of the researcher to learn how to web scrape and write the code to scrape a given website. However, once this is done, the data itself can be downloaded in mere hours—a task that might otherwise take a team of researchers days, months, or even years to complete. Also, web scraping scripts generally need little maintenance to remain effective. So long as the general formatting of the targeted website remains the same, the scraping task can be repeated as needed in the future

[37] Ministry of Internal Affairs and Communications, "Changes in the Number of Municipalities and Characteristics of the Great Mergers of the Meiji and Showa Eras," https://www.soumu.go.jp/gapei/gapei2.html, accessed July 1, 2020.

to keep JMED up to date.

A third benefit is accuracy. When constructing a dataset manually either by oneself or with the help of research assistants, there is always the danger that errors will occur in data entry. These errors could result from incorrectly typing certain information about a candidate or election into a spreadsheet or accidentally skipping over entire candidates or elections. Even small errors at the data entry stage can be challenging to detect, leading to major headaches and faulty inferences later on in the research process. By comparison, the computer program that does the web scraping extracts the information *exactly* as it is listed on the targeted site.

Finally, one last advantage is reproducibility. Particularly in recent years, concerns about replication and transparency in the research process have become important tenets of social science disciplines. When data is gathered manually, carefully documenting the data collection process may be more difficult and time-consuming than the actual data gathering itself. However, when using web scraping, the script used to assemble the dataset can be shared with other researchers and submitted alongside publication. Sharing this code makes it much easier for other researchers to assess the validity of the data gathering process itself. The code used to create JMED will be published alongside the dataset when it is publicly released.

Scraping does come with some disadvantages. The first concerns the quality and reliability of the data. Scraping a website will return data that is only as accurate as the information on the website itself. In the case of a crowd-sourced website run by another company, such as go2senkyo.com, it is difficult to know the exact quality of the data or the data generating process. To help assess the accuracy of the information in JMED, I have randomly selected municipal elections to verify using outside sources such as newspaper reports. From these tests, my sense is that information regarding overall election characteristics and candidate names, age, gender, incumbency, and vote totals on go2senkyo.com are highly accurate, with less than 1% of pages having errors. By comparison, information regarding a candidate's partisanship and background is often incomplete, as noted. For partisanship, most Japanese municipal candidates run officially

as independents, but many receive some form of recommendation or support by major parties. While go2senkyo.com is typically accurate about the former, it does not list the latter. Likewise, information on candidate backgrounds is missing in 98% of cases and, if available, only covers the most recent occupation of the candidate before running for office.

A second disadvantage to web scraping is that care is needed not to violate the website's terms of service. While go2senkyo.com was created with the intent of sharing its information on elections with as broad an audience as possible, other websites may have different aims for their data and may explicitly prohibit web scraping. Similarly, it is vital for researchers to not overload the targeted websites with queries from their computer programs, causing these sites to slow down for other users or even crash. In my case, go2senkyo.com is used to handling a lot of web traffic, and care was also taken to extract the information at a slow enough pace that would not overload the system.

Despite these potential disadvantages, scraping offers tremendous opportunities to create new datasets for researchers. In the case of JMED, I have been able to assemble the first comprehensive, candidate-level dataset for municipal elections in Japan. Given that there is no official, publicly available, centralized repository of municipal election information, it is difficult to come up with a better option for creating a similar dataset. Past efforts by other researchers have instead involved time-intensive data collection and extensive outreach to individual municipalities to request their data (Fukumoto and Horiuchi 2011, 2016). Apart from the time and data entry problems mentioned earlier, contacting individual municipalities comes with the added complication of response rates. Many public officials may be too busy to respond or may hesitate to give out data to researchers who are not members of their municipality. Analyzing the results of these efforts, in turn, means taking account of the potential systematic biases that might correlate with quantities of interest—in our case, we might worry that municipalities with younger or older representatives, or those that spend less or more on welfare, could be systematically more or less likely to respond. Moreover, even if municipalities do respond, the lack of a standardized means

of keeping records will further make comparisons across municipalities difficult.

Finally, while the initial construction of JMED may have been speedy, I have begun a long-term project to correct the errors in it using newspapers and other sources. As discussed later in the dissertation, I have also used web scraping from other sources to fill in specific gaps and collect biographical information for a subset of municipal politicians such as their education, family structure, level of party support, and prior experience in politics, business, or other professional fields. In Chapter 5, I further expand JMED by collecting the Twitter accounts of over 5,000 municipal candidates between 2010 and 2019.

3.2.4 Research Design

With the creation of JMED, it now becomes possible to examine variation across municipalities in the age of politicians and test my earlier theoretical predictions.

For H3 concerning the relationship between municipality type and the percentage of candidates and representatives under 40, my approach in this chapter is relatively straightforward. Given that JMED includes this information, I compare whether there are more municipal assembly members and mayors in their 20s and 30s in cities and wards compared to towns and villages. These estimates are not causally identified, but the relationships can still give insights into whether the existing patterns align with my expectations.

For H4, the research design is more complex to disentangle the effects of district magnitude on youth representation from those driven by municipality type and population size. Luckily, I can take advantage of a unique institutional design specific to Japanese municipalities to estimate the causal effect of district magnitude on youth representation.

Until 2011, the Local Autonomy Act in Japan set upper limits on the size of municipal assemblies as a step function of the local population.[38] What this means is that the law established a series of population thresholds where the maximum possible size of the assembly changed

[38]Local Autonomy Act, Chapter 6 Section 1, Article 91.

Table 3.3: Population Cutoffs and District Magnitudes in Municipal Assemblies

	Population	Upper Limit of Municipal Assembly Size (and District Magnitude)
Towns and Villages	<2,000	12
	2,000–4,999	14
	5,000–9,999	18
	10,000–19,999	22
	≥20,000	26
Cities	< 50,000	26
	50,000–99,999	30
	100,000–199,999	34
	200,000–299,999	38
	300,000–499,999	46
	500,000–899,999	56
	≥900,000	56 + 8 per 500,000 (max=96)

Notes: Local Autonomy Act, Chapter 6 (Assembly), Section 1 (Organization), Article 91.

discontinuously at each threshold. Since nearly every municipality has a single, at-large district, the size of the assembly is the same as the district magnitude. Thus, I can exploit this plausibly exogenous variation in district magnitudes to estimate the causal effect on younger candidates entering assembly races.

Table 3.3 shows the different population thresholds applied to municipalities until 2011. The first four cutoffs were applied to towns and villages, while the rest were applied to cities. For example, the law allowed a town with a population between 5,000 and 9,999 to have an assembly size (and district magnitude) up to 18. If the population of the town became 10,000 or higher, but less than 20,000, then this upper size limit would be expanded to 22. Importantly, it was the central government that controlled both the enforcement of the Local Autonomy Act, which was strict, and the measurement of changes in a municipality's population over time. This centralized control means that municipal officials could not easily manipulate their population numbers in order to fall on either side of a particular threshold for political reasons.[39]

[39]Muraoka and Barceló (2019) further note that when municipalities fell below a population threshold, the central government would force the municipality to reduce their number of seats to comply (if necessary) and call a new

In the analyses for this chapter, I focus only on elections held between 2006, after the latest wave of municipal mergers, and 2011, the last year of the law. After 2011, the Local Autonomy Act was amended, the practice of using upper limits ended, and municipalities could freely set the size of their assemblies. I also do not focus on either the smallest (2,000 residents) or largest (500,000 residents and above) population thresholds because of a lack of observations in the dataset. Finally, I focus only on towns, villages, and non-designated cities, as these rules were not applied to either Tokyo wards or to designated cities that do not have at-large districts.

Because the law only changed the maximum possible assembly and district magnitude size and did not force municipalities to change their assemblies, I rely on a fuzzy rather than a sharp regression discontinuity design (RDD). In sharp RDDs, the assignment rule is deterministic, meaning that there is full compliance, and every observation on the right-hand side of the discontinuity takes up the treatment—in this case, the increase in district magnitude. In fuzzy RDDs, by comparison, the probability of receiving the treatment is discontinuous at the cutoff, but not to the extent that necessarily every municipality increases its assembly size. In this particular case, incomplete compliance arises on the right-hand side of population cutoffs, where some municipalities that were eligible to increase the size of their assembly choose not to, whereas others did.

The estimation of a fuzzy RDD is similar to instrumental variables (IV) regression. To estimate the RD effect, I rely on two-stage-least-squares regression and use the maximum limits of the assembly size as an instrument for district magnitude (Imbens and Lemieux 2008).

Fuzzy RDDs require more assumptions in comparison to sharp RDDs that stem from their similarity with IV regression. The first assumption is conditional ignorability. For the upper limits of the assembly size to be a valid instrument, it needs to be exogenous once I control for population size. Given the strict enforcement of the Local Autonomy Act until 2011 by the central government, we can be confident that these upper limits are solely a function of a municipality's

election. This policy is also described in Article 91 of the Local Autonomy Law.

population size. Second, there is a monotonicity assumption, meaning that municipalities cannot be discouraged from increasing their assembly sizes by crossing a population threshold. While it is impossible to test this assumption empirically, it is difficult to imagine why municipalities would be discouraged by having the option to increase their assembly size.[40]

The third assumption is the exclusion restriction that the instrument (upper limit) only affects youth representation through the treatment (assembly size and district magnitude). However, it is hard to think of a good reason why the upper limit would affect youth representation in any other way than by shaping the size of the assembly and district magnitude. With that being said, it is important to note that I am conducting this analysis in the context of at-large districts. As such, I cannot disentangle the effect of assembly size changes from changes in district magnitude since they are the same. Analyzing at-large districts may limit the generalizability of my findings to other electoral settings where district magnitudes and assembly sizes differ, although at-large districts are the norm for Japanese municipalities. Finally, the last assumption is relevance, which means that the instrument influences the treatment. Unlike the other assumptions, relevance can be empirically tested, which I do in the Results section to show that the upper limit provides a strong instrument for district magnitude and assembly size.

Apart from the assumptions that come with IV regression, fuzzy RDDs also share the two main assumptions of typical sharp RDDs. The first of these is that no other policy or characteristic of municipalities changes at the population thresholds other than the treatment itself (compound treatment). In the Appendix, I conduct several placebo tests to show that municipalities on either side of the population thresholds are balanced in observable characteristics (Table A.1). There is one threshold that may be concerning, however, which is that the 200,000 residents threshold is also the cutoff for a municipality to become a special city, the precursor to present-day core cities.[41] I investigate whether this particular threshold returns different results than the others

[40] Similarly, I have been unable to find any evidence that central governments pressured municipal assemblies to either remain at their current size or expand to the upper limit.

[41] The 500,000 resident threshold could also pose a problem, although as mentioned earlier I do not focus on this higher cutoff because of a lack of observations.

in the next section.[42] The second assumption is that municipalities could not manipulate their population size to fall on either side of the population threshold (sorting). As noted earlier, we can have some confidence in this being the case because the central government controlled population measurements, but in the Appendix, I also use McCrary (2008) density tests to show that there is no evidence of sorting at the population thresholds (Figure A.1).

With these tests, the core idea of the fuzzy RDD is that near the population thresholds, which municipalities receive the encouragement of the upper limit will be "as-if" randomly assigned. Because of this, municipalities that fall just above and below the population thresholds should be similar in observable and unobservable characteristics, differing only in whether they are eligible for the treatment, allowing us to measure the causal effect on the number of younger candidates that run in the next election.

My research design is thus similar to many studies that use both sharp and fuzzy RDDs in the context of population thresholds (see Eggers et al. 2018 for a review). My approach is closest to that of Muraoka and Barceló (2019), who use the population thresholds in municipal assemblies to study the effect of district magnitude on turnout.

Finally, I follow the guidelines laid out by Cattaneo et al. (2016) for RDDs with multiple cutoffs. In doing so, I calculate both the pooled RD estimate for all population thresholds and the estimate for each individual cutoff. For the pooled approach, I assign municipalities to their closest population threshold and then normalize the running variable (population size) so that the cutoff is zero for all municipalities. For example, a town with a population of 8,000 is closer to the cutoff at 10,000 than the one at 5,000, so after normalization, its running variable value is –2,000 (indicating that the town is 2,000 residents below the nearest cutoff point). In effect, this means

[42]There are two reasons to potentially be less concerned about this other causal pathway. The first is that while application of the upper limit rule was strictly applied based on population thresholds, the changing of city status was a more deliberative process involving both the agreement of the city in question and the Cabinet Office of Japan. Second, most of the additional discretionary powers that came with special city status were granted to the mayor rather than the assembly. Still, I am cautious in interpreting the results given this potential compound treatment. It is possible for this particular threshold that fewer or younger people would want to run for office because of the possibility of the municipality receiving special status (and greater autonomy) in the future.

that I assign a municipality to a specific cutoff when its population is greater than the midpoint between the given cutoff and the one below it, but less than the midpoint between that cutoff and the one above it. For each cutoff-specific RD estimate, I can instead use all observations with a population size greater than or equal to the previous cutoff, but smaller than the following cutoff. For example, in estimating the effect at the 10,000 population threshold, I include all municipalities with populations above 5,000 but below 20,000. In both cases, I then use the mean squared error procedure to choose an optimal bandwidth around the treatment threshold (Cattaneo, Idrobo and Titiunik 2019; Imbens and Kalyanaraman 2012).

The advantage of the pooled data approach is that I have more observations to estimate the RD effect, but a possible disadvantage is that the sample of countries is likely to be weighted toward smaller towns and villages because these municipalities are closer to population thresholds. In comparison, the upside to analyzing individual cutoffs is the ability to explore heterogeneous effects across municipalities, which may be important given the potential compound treatment at 200,000 residents. The downside is that there may not be enough observations at every cutoff to detect an effect.

3.2.5 Results

Before moving on to the empirical tests, I begin by looking at descriptive differences in youth representation in municipal offices over time. Figure 3.5 shows the percentage of candidates and elected representatives at the municipal level between 1999 and 2019. In the absence of electoral reform, we can see that the trends across all four lines are relatively flat. There has been no real increase in the number of younger candidates, assembly members, or mayors over these twenty years. For assemblies, candidates and representatives under 40 years old have made up between 4 and 8% of the total. For mayors, candidates have never crossed the 5% threshold, winners have never crossed the 3% threshold, and there have been two years (2002 and 2005) where not a single mayor won election who was in their 20s or 30s.

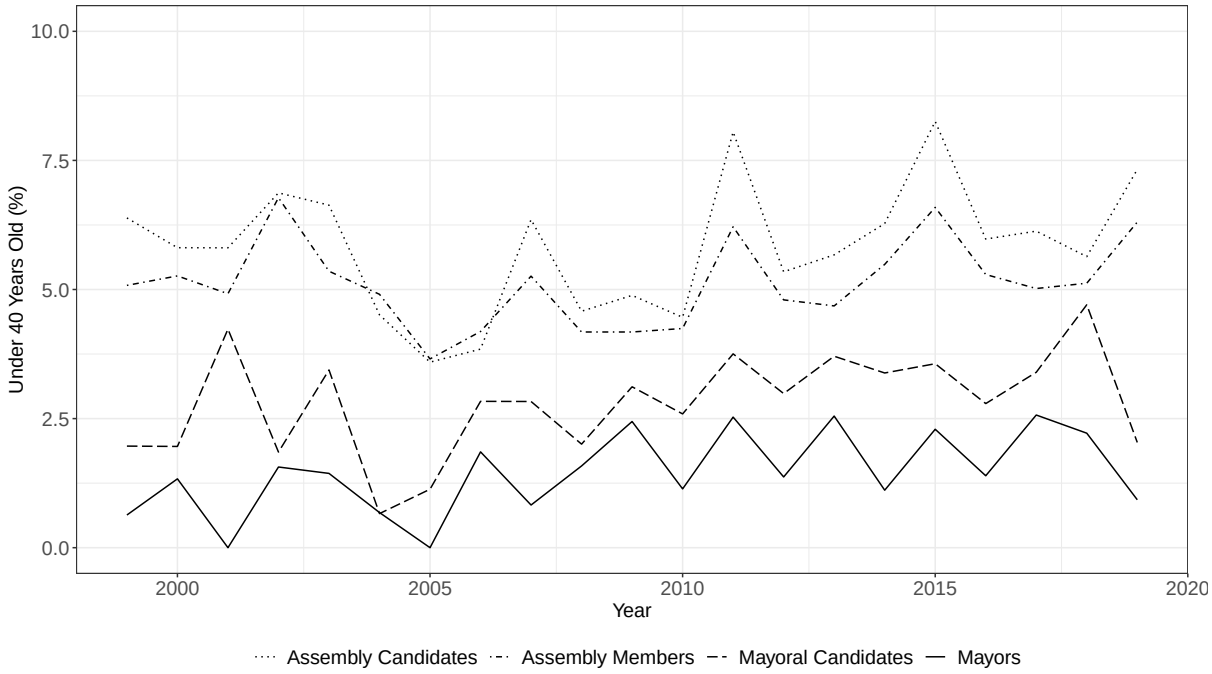


Figure 3.5: Younger Municipal Assembly Members and Mayors, 1999–2019

Notes: JMED (2020).

Although not the focus of this chapter, it is also interesting to note that the number of assembly candidates and members under 40 experiences a sizeable jump every four years. These jumps coincide with the Unified Local Elections held in 1999, 2003, 2007, 2011, 2015, and 2019. According to JMED, 47% of municipal assembly elections and 16% of mayoral elections occurred during these unified elections, held every four years in April, with the rest of the elections evenly distributed over time. While future research should further investigate these trends, the observed patterns are in line with my theoretical expectations. Parties often become more involved in municipal races during the Unified Local Elections, as several gubernatorial and prefectural races are held the same month, and these elections are often seen as a bellwether for public opinion toward the national government. It could be that this increased attention from national parties and voters lessens candidate dependence on the personal vote and enables more young people to run. A simple t-test for municipal assemblies finds that candidates under 40 are nearly three

percentage points more likely to run in unified elections (7.8%) than off-cycle elections (5.0%) ($p<.001$).[43] There does not seem to be a similar effect for mayors, although this could reflect the smaller number of mayoral races that occur during the Unified Local Elections as well as the fact that mayoral races have even less partisan influence than assembly elections.[44]

Turning to the main hypotheses, Figure 3.6 shows the percentage of candidates under 40 by municipality type. I find that younger candidates are substantially more likely to enter the race in elections for wards and cities than towns and villages.[45] Candidates in their 20s and 30s make up 19.4% of total candidates in Tokyo ward races compared to 15.1% in designated cities, 7.0% in cities, 2.8% in towns, and 1.9% in villages. The median age of assembly candidates is 51 for wards, 53 for designated cities, 58 for cities, and 62 for towns and villages. While just 2% of ward assembly elections held between 1999 and 2019 did not have at least one candidate under 40, this was true for 73% of town and 86% of village elections.

The patterns for mayoral races are similar, if less dramatic. Again, Tokyo wards had the youngest candidates, with 8.1% under 40 compared to 7.1% for designated cities, 3.8% for cities, 1.8% for towns, and just 0.6% for villages.[46] The differences in median age were similarly less stark: mayors in designated cities tended to be the youngest with a median age of 57, compared to 60 for wards and other cities and 62 for towns and villages.

In the 792 village elections held between 1999 and 2019, only one person under 40 won an election, and just 30 (3.8%) people won before they were 50.[47] The sole winner under 40, Kazunori Seki, first became mayor of Nishimeya Village in Aomori at 39 years old in 2006 and remains the mayor as of this writing. Seki won the election under the campaign slogan of "Youth,

[43] Recent work by Fukumoto and Horiuchi (2011, 2016) argues that the timing of these elections could be seen as a natural experiment up until 2003. However, the wave of municipal mergers in the mid-2000s complicates studying the timing of elections, as municipalities that merged could choose their new election date.

[44] A t-test finds that mayoral candidates under 40 in unified elections (3.1%) are slightly more likely than in off-cycle elections (2.9%), but the difference is not close to significant (p=0.72).

[45] Although I show only the results for candidates here, the results for winners of these races follow the same patterns.

[46] Although the difference between designated cities and Tokyo wards is not statistically significant.

[47] These are the 792 elections covered by JMED, but some village elections may be missing between 1999 and 2004.

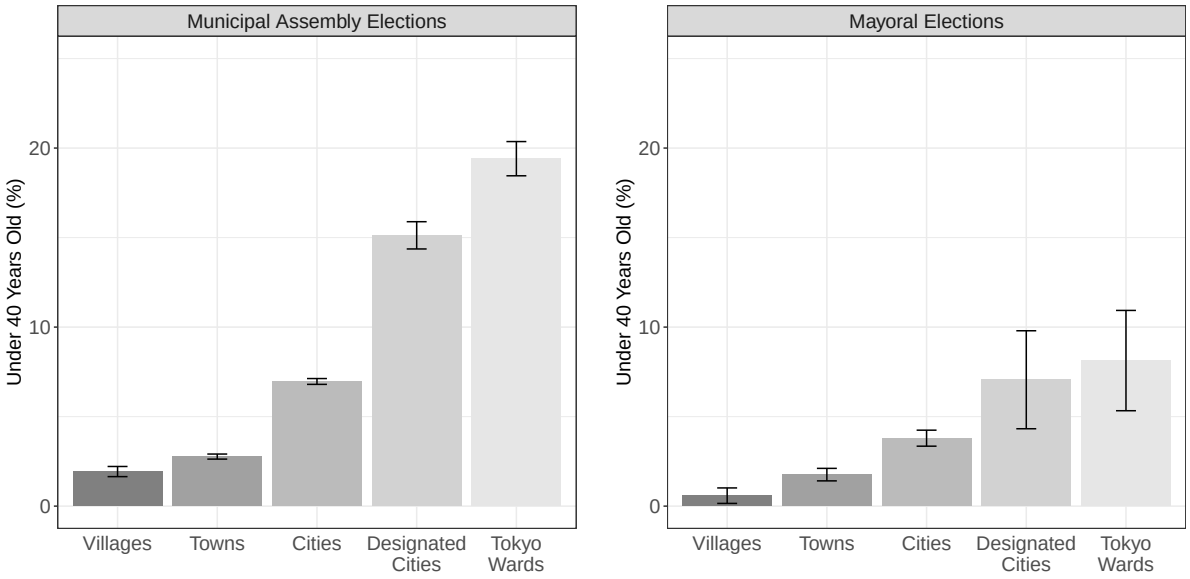


Figure 3.6: Younger Candidates by Municipality Type

Notes: There are 20 designated cities in Japan, which all have populations greater than 500,000 and have been delegated additional policy discretion by the Cabinet of Japan (Local Autonomy Law, Article 252, Section 19). Bars show 95% confidence intervals. JMED (2020).

Passion, and Reform" (*wakasa, jounetsu, kaikaku*) and by promising to encourage more young people to move to the village by eliminating medical costs for children up to the age of 18.[48] Mayors under 40 are rare in general, but other municipality types have seen significantly more mayors under 50. From 1999 to 2019, 12.9% of ward mayors began their terms before 50 as did 13.8% of city mayors and 8.3% of town mayors.

Thus, as expected, Figure 3.6 shows that younger candidates are much more common in municipal races for more metropolitan areas where parties are more influential, populations are younger, and cultural values are more liberal toward youth involvement in politics. By comparison, younger candidates are rare and often absent altogether from races for many smaller towns and villages, where party competition is non-existent, populations are older, cultural values are more conservative, and candidates win elections based on their reputations and networks.

Moving on to H4, Table 3.4 provides the results for my tests concerning the effects of

[48] Kazunori Seki, http://seki-kazunori.com/, accessed July 1, 2020.

Table 3.4: The Effect of District Magnitude on Younger Candidates for Municipal Assembly

DV:	Candidates Under 40 (%)			
Design:	OLS	Fuzzy Regression Discontinuity		
Polynomial:	1st		2nd	3rd
	(1)	(2)	(3)	(4)
District Magnitude	0.265***	0.232***	0.247***	0.255***
	(0.029)	(0.033)	(0.030)	(0.030)
Bandwidth	NA	9,619	15,243	15,789
Observations	2,305	1,510	1,867	1,883
R^2	0.067	0.013	0.015	0.017

Notes: Optimal bandwidths are chosen to minimize mean square error. Standard errors clustered by municipality are in parentheses. *p<.1; **p<.05; ***p<.01.

district magnitude and assembly size on younger candidate entry. Model 1 shows the naive estimate between district magnitude and the percentage of candidates under 40 using bivariate linear regression. Models 2 through 4, on the other hand, provide the second-stage results from the two-stage-least-squares regressions for the pooled fuzzy RDD analysis. The only difference between these models is whether the running variable (population size) is operationalized using a first, second, or third-order polynomial. In Appendix Table A.2, I provide the first-stage results for these regressions to show that the upper limit of assembly size has a strong and significant positive relationship with district magnitude. The first-stage F test similarly rejects the null that the upper limit is a weak instrument, offering further support for the relevance assumption.

Across all four models, I find that district magnitude increases have a positive impact on the percentage of candidates in their 20s and 30s that contest assembly races. The estimates suggest that a four-seat increase in district magnitude corresponds with a one percentage point increase in candidates under 40.[49] Given that the average percentage of younger candidates in the data is 5.7%, this accounts for nearly an 18 percentage point increase in younger candidates,

[49]I find similar results if I instead use the natural logarithm of district magnitude to account for differing marginal effects across the range of assembly sizes.

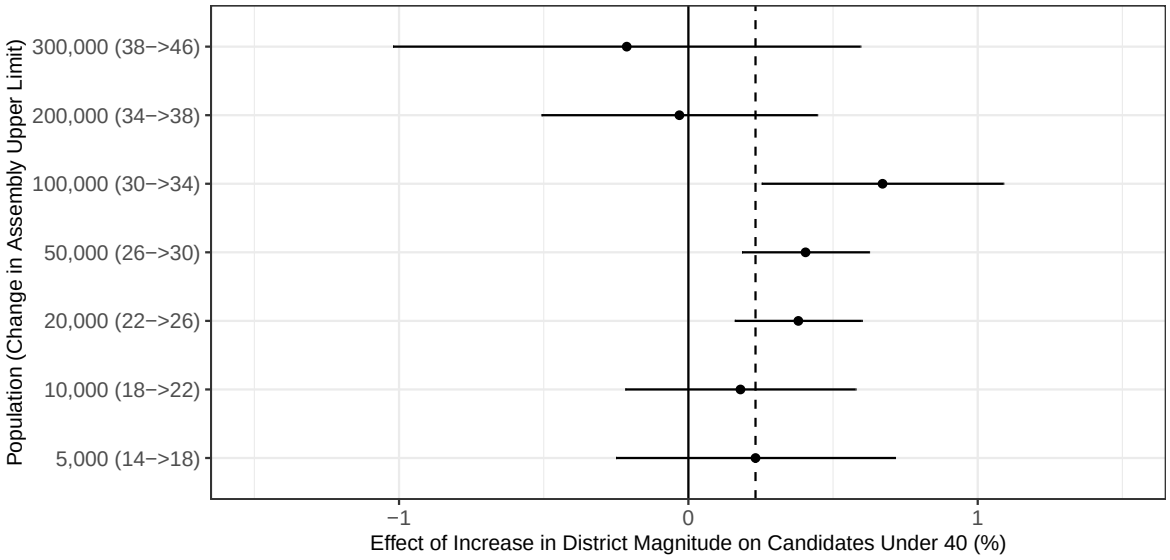


Figure 3.7: RD Effect of District Magnitude by Population Threshold

Notes: All fuzzy RDD models are estimated using local linear regression and bandwidths chosen to minimize the mean square error. The dotted line represents the pooled effect across thresholds (Table 3.4, Model 2). Bars show 95% confidence intervals.

which is a sizeable effect.

Finally, Figure 3.7 shows the results from my threshold-specific RD analyses. As Cattaneo et al. (2016) suggest, I use a coefficient plot to compare the estimates against one another. All of the individual fuzzy RD estimates in this plot are estimated using local linear regression and a bandwidth chosen to minimize mean square error, and they are compared against the local linear estimate for the pooled results (Model 2 in Table 3.4), which is shown using a dotted line.

I find the clearest effects of increases in district magnitude for the thresholds in more populous towns (population crossing 20,000) and smaller-to-medium size cities (populations up to and exceeding 100,000). The largest estimate is 0.671 for the 10,000 resident cutoff. At this point, the estimate suggests that a four-seat increase, such as from 30 to 34 seats, would increase the percentage of candidates under 40 by 2.68 percentage points. Given that municipalities around this population size typically have 6.0% of their candidates under 40, this represents a nearly 45 percentage point increase in younger candidates, which is significantly larger than the pooled

effect.

Apart from these three thresholds, it is difficult to tell whether the lack of significant findings for the other four thresholds represents the null effect of district magnitude on municipalities near these cutoffs or a lack of sufficient observations. The estimates near the 5,000 and 10,000 population thresholds are close to the pooled effect size, although they are not statistically significant, whereas the estimates for larger cities are closer to the zero line. For smaller towns and villages, the lack of an effect could be driven by an increase in district magnitude and assembly size simply not being enough encouragement for young people to run in these types of municipalities, given their general absence from these races (Figure 3.6). The null effect could also reflect a balance between an increase in assembly size encouraging some young people to run, but discouraging others because of intensified competition as the number of representatives per capita increases. For larger cities, the absence of a significant RD estimate may be evidence of the diminishing marginal effect of increasing assembly size (Horiuchi 2005). Past a certain point, increasing district magnitude may no longer have as much of an effect on voters' cognitive burdens or the calculations of younger candidates about whether to enter the race.

3.3 Discussion

Continuing the thread of the cross-national analyses in Chapter 2, I find in Chapter 3 that political institutions play a significant role in shaping the number of young people in public office. There is consistent evidence at the national and municipal levels that electoral systems that put the onus on individual candidates to develop significant financial resources, personal networks, and local ties result in fewer younger representatives.

In the first half of the chapter, I provided evidence that institutional and party reforms at the national level increased the representation of younger people in the HOR, reduced the typical age of recruitment for new candidates, and increased the diversity of backgrounds represented

among young people in the parliament. I argued that these reforms did so by reducing the value of the personal vote, increasing party influence, and opening up recruitment so that central party leaders could exert more influence over candidate nominations rather than the previous incumbent in the district, their *koenkai*, or local party organizations.

Despite the reforms at the national level, however, young people are still significantly under-represented in the HOR. Even in 2009, when the HOR peaked at 16% of MPs under 40, that percentage was still only half that of the voting-age population under 40 (30%). From a cross-national perspective, if Japan could return to 16% under 40, it would increase its rank relative to other countries in Figure 2.1 by twenty positions, from 64th of 68 democracies to 44th, just ahead of Ireland (15.9%). Even then, Japan would still be on the cusp of falling into the bottom third of democratic countries in terms of youth presence in the parliament.

Thus, electoral and party reforms in Japan have increased youth representation, but the effects have been modest and uneven over time. Election campaigns remain expensive for individual candidates. The minimum deposit needed to put your name on the ballot has only increased to 3 million yen ($28,000) for the SMD tier and 6 million yen ($56,000) for the PR tier, while the length of the official campaign period has been shortened even further to just 12 days. Strict campaign laws remain in effect, and candidates still rely on campaign posters and repeating their names over loudspeakers. While the increase in party influence and funding has helped younger politicians to gain a greater foothold in the parliament, the *sanban* remain important. The MMM system may be more forgiving for younger candidates than SNTV, as candidates now campaign more on policies than personal ties and can potentially be saved by the PR list. However, ultimately candidates still need to devote significant time and resources to developing *koenkai* so that they can become competitive district candidates.

The future of youth representation in the HOR is also unclear because of the disappearance of the much younger DPJ from the electoral arena. Since the return of the LDP-Komeito coalition to power in 2012, there has been minimal turnover in the HOR. Most of the young DPJ members

who came to power in 2009 have since been ousted from office, whereas the young LDP members that entered in 2012 have largely held onto their seats and gotten older over the past eight years. It is unclear whether greater turnover in government will return and with it, greater descriptive representation for young people in government.

In the second half of the chapter, I find that younger assembly members and mayors are less common in towns in villages—where networks are vital, competition is intense, and personal reputation is critical—and more common in cities and wards—where parties are stronger, competition is less fierce, and connections are less essential. Taking advantage of exogenous variation in district magnitude across municipalities, I further provide causal evidence that increases in the size of district magnitude can lead to an increased number of young people running for office—at least for specific ranges in district and assembly size.

Together with the national-level findings, the municipal section of the chapter suggests that specific institutional reforms can increase youth representation. Possible reforms, such as electoral reform to move municipal assemblies toward proportional representation, will be discussed in greater detail at the end of the dissertation in Chapter 7. However, the initial evidence from this chapter is that young people will be more likely to run in races where the party is more involved, where candidates do not need to be wealthy or well-connected to win office, and when assemblies and district magnitudes are larger.

Future studies are needed to investigate further other factors that could be important for youth representation in municipal institutions. For example, this chapter only briefly discusses the effects of election timing on younger candidates' entry. However, studies in other contexts such as the United States have shown that the electoral calendar can significantly affect the diversity of voters, incumbency rates, and influence of interest groups (Anzia 2012; de Benedictis-Kessner 2018; Hajnal 2009). All three of these factors may subsequently affect youth representation.

Another possible idea is to analyze some of the cross-national factors discussed in Chapter 2 in greater detail, such as the effects of minimum ages of candidacy or salaries. The former is

challenging to study because of the lack of variation across municipalities, whereas the latter certainly varies, but data is difficult to collect. Some observers have suggested that younger candidates may be less common in municipal races not because the pay is too high, as in the cross-national context, but rather because the pay is too low to be an attractive career opportunity for anyone who is not retired.[50] Of course, the official salary earned by the representative is unlikely to be the only perks of serving in elected office, given the influence of pork-barrel politics and other benefits received from the central government. Future work should investigate whether higher salaries can be enough to encourage young people to run, or whether they will only increase competition from older, more experienced, and connected individuals who suddenly view the position as more attractive.

Finally, although the fuzzy RDD allows me to make causal claims about the effect of district magnitude and assembly size on younger candidates entering the race, such designs also raise concerns about external validity. On the one hand, I try to address the generalizability of the findings by showing both the pooled effect and the heterogeneous effects across different population thresholds. Unlike a typical RDD, my design is not limited to a single threshold but instead investigates seven different cutoffs at seven population sizes. On the other hand, as I noted earlier, the findings in this chapter are limited to the context of at-large districts, where district magnitudes and assembly sizes are the same. More research is needed to test whether these findings generalize to other contexts with at-large districts and to tease out the precise causal mechanism. I touched on two potential mechanisms in this chapter—effects on the information environment for voters and party preferences for candidates with different personal-vote earning attributes—but another mechanism could be that candidates and voters see the expansion of the assembly's size as an opportune time to elect fresh, new faces to the legislature. Future work could thus explore whether the effects of increases in district magnitude on younger candidates are only temporary for the next election or longer-lasting in the municipality.

[50] See, for example, Ken Nakamura, "Getting Back on Track: Revitalizing Local Assemblies in Japan," nippon.com, July 4, 2018, https://www.nippon.com/en/currents/d00391/amp/.

Chapter 4

Demand: Voter Biases and the Age of Candidates

Candidates for political office vary in age—some are young, some middle-aged, some elderly—but in most countries, elected officials tend to be older than most of the constituents they represent. Is this because voters generally prefer older politicians over younger ones?

In Chapters 2 and 3, I investigated the mechanisms driving youth under-representation from the supply side: first, from a cross-national perspective, and second, by taking advantage of institutional reforms and variation within Japan. Across both chapters, I provided evidence that several supply-side factors are consequential in influencing the descriptive representation of young adults, from the electoral system to legislative resources and minimum age requirements.

In this chapter, I work with Yoshikuni Ono (Tohoku University) to test a separate, demand-side explanation: that voters prefer older politicians over younger representatives. We assess two channels through which age discrimination could result in the under-representation of younger people in political institutions. One possibility is that there exists a consensus among voters that younger candidates are simply too inexperienced or not competent enough to hold public office. Another, not mutually exclusive explanation is that voters prefer candidates closer to themselves

in age. However, since younger citizens turn out to vote at lower rates than older people, the result is that younger candidates fare poorly in elections relative to older candidates.

In the second part of the chapter, we consider two mechanisms that could account for age-based discrimination in elections. The first is that voters infer information about a candidate based on their age, from the policy issues the candidate will emphasize to the traits they will exemplify in office, and that voters judge candidates based on these inferred characteristics, whether they are right or wrong. In the economics literature, this perceived link between a candidate's ascriptive characteristics and type is referred to as "statistical discrimination" (Phelps 1972; Arrow 1973). The second mechanism that we explore is "taste-based discrimination," wherein voters harbor negative prejudices about the efficacy of certain groups as politicians, such as younger people, without any particular rational explanation (Becker 1957).

To test for age biases and their mechanisms, we conduct two novel survey experiments in Japan where we ask respondents to evaluate the photos of hypothetical candidates for mayor, while at the same time altering candidate faces using artificial intelligence to make them appear as if they are younger or older. By taking advantage of recent advances in machine learning and neural networks, we are able to hold constant elements of each photo unrelated to aging—including the expression, underlying facial structure, and clothing of candidates—and manipulate only those elements that change with age. In the first experiment, we randomly assign respondents to view two candidate photos and then ask whom they would vote for and whether they would turn out if these two candidates appeared on the ballot. In the second, we present voters with individual candidate photos and ask them to assess each candidate's likely issue emphases, traits, physical attractiveness, and electability.

Contrary to the observed under-representation of young people, we find that voters dislike older candidates the most. Respondents were significantly less likely to say that they would be willing to turn out or vote for older candidates but were equally likely to support younger and middle-aged candidates. This elderly bias was also reflected in our tests for in-group favoritism:

while younger and middle-aged voters were modestly more favorable toward candidates from their age group compared to others, older voters were, if anything, more critical of elderly candidates. We then test the external validity of our findings using data from the Japan Municipal Elections Dataset (JMED) on actual mayoral elections in Japan and show that turnout is lower when candidates are much older, and older candidates tend to receive fewer votes than younger candidates.

In our second experiment, we find support for both statistical and tasted-based mechanisms of age discrimination. Respondents in our surveys drew clear links between a candidate's age and their issue emphases and traits. Voters believed that candidates would devote relatively more attention to issues important to their age group: younger candidates were thought to focus more on education and childcare, middle-aged candidates more on the economy, and older candidates more on elderly care and healthcare. Middle-aged candidates were seen as generally having the most favorable traits for office, whereas younger candidates were viewed as the most physically attractive. In our subsequent tests, we find evidence that inferred judgments about a candidate's issues and traits are predictive of a voter's support for a given candidate (statistical discrimination), but that voters still significantly disliked older candidates even when controlling for these other factors (taste-based discrimination).

In sum, we find little evidence that voter biases are to blame for youth under-representation in office. Voters in our experiments were equally willing to support younger candidates as middle-aged candidates and preferred younger candidates substantially more than older candidates. Our findings thus support the idea that it is supply-side factors such as political ambition and institutions (Chapters 2 and 3) that most inhibit young people from becoming politicians. Our results suggest that if institutions are reformed, and young people are encouraged to run, voters will welcome the greater presence of young leaders in public office.

4.1 Voters and Age Discrimination

To date, research on the informational shortcuts that voters rely on when they evaluate politicians has largely ignored age. When evaluating a candidate, we know that voters make inferences about their likely policies and effectiveness in office based on a wide range of heuristics, from those more directly connected to politics, such as a candidate's party and endorsements (Rahn 1993; Sniderman, Brody and Tetlock 1991), to characteristics such as a politician's gender, race, class, religion, and even physical appearance (Aguilar, Cunow and Desposato 2015; Burden, Ono and Yamada 2017; Calfano and Djupe 2009; Carnes and Lupu 2016; Todorov et al. 2005). However, despite significant media attention to the age bias of political institutions,[1] we know little about whether voters infer certain information based on the age of a candidate and, if so, how it affects their decision-making at the ballot box.

Could the shortage of younger politicians be due to voters preferring older, more experienced candidates over younger leaders? If voters generally dislike younger politicians, then young people may choose not to run for elected office as often as older people, or they may run but simply lose much more often at the polls.

Given the extensive research on voter biases concerning gender and race, it is easy to imagine that voters might similarly discriminate against candidates based on their age. Around the world, research shows that voters form stereotypes about female and racial or ethnic minority candidates (Kam and Kinder 2012; McConnaughy et al. 2010; Kage, Rosenbluth and Tanaka 2019), and that these biases can help explain why so few women and minorities hold office (Dolan 2004; Aguilar et al. 2015; Ono and Yamada 2020), although they may play less of a role in contexts where other cues such as party affiliation are especially influential (Aguilar, Cunow and Desposato 2015; Lawless and Fox 2015; Hopkins 2009).

If anything, voters may feel relatively more comfortable discriminating based on age

[1] See, for example, Derek Thompson, "Why Do Such Elderly People Run America?" *The Atlantic*, March 5, 2020, and Isabel Reynolds and Emi Urabe, "Japan Is Too Old-Fashioned, Says One of Youngest Ministers Ever," *Bloomberg*, September 11, 2019.

stereotypes because in many contexts it is viewed as a more acceptable form of discrimination. For example, while there are strong social norms that a person's gender or race should not exclude them from office, age is closely connected to experience, energy, health, and mental acuity, all of which are seen as relevant grounds for judging a person's ability to serve as an elected representative. Moreover, while many countries have sought over time to remove restrictions and encourage greater participation by women and racial or ethnic minorities in elected office, codified discrimination against younger citizens has largely remained in the form of legal rules that set the minimum ages for a person to be eligible to vote or stand for office (Chapter 2).[2] These restrictions are similarly seen as more understandable because of concerns about young people's cognitive development, experience, and maturity, even though the restrictions for certain positions can be as high as 40 years old for legislative offices and 50 for executive office in some countries.[3]

Age discrimination may be seen as more acceptable in part because age is often thought of as a "different" type of social identity, one that is universally experienced and changes at a constant rate with time. As Bidadanure (2015) writes, from a diachronic perspective young people will not be mistreated throughout their whole lives: even if age biases against the young exist, everyone will be discriminated against equally when they are young, but young people will eventually become older and can get an opportunity to serve in office. Others have noted that age discrimination, while certainly an issue in many workplaces, does not come with the same level of historical animosity, domination, and exclusion as other identities such as race and gender (Phillips 1995; Mansbridge 1999).

In this chapter, we focus on two sources of age bias that may contribute to the shortage of younger politicians. The first is age stereotypes, by which we mean shared beliefs among the electorate about the relative ability of individuals of different ages to serve in public office. The

[2]Some countries have recently lowered the age of candidacy to match the minimum age requirement for voting, such as the United Kingdom, which lowered its age of candidacy from 21 to 18 in 2007.

[3]The minimum age of candidacy is 40 for the upper houses of Cameroon, Czech Republic, Rwanda, and Zimbabwe, and 50 to be president of Italy.

second is in-group favoritism, wherein voters prefer candidates closer to themselves in age. The former could lead to a shortage if there is a widespread dislike of younger politicians among voters. The latter could lead to a shortage as a consequence of older voters turning out to vote at higher rates than younger voters.

In terms of age stereotypes, there are good reasons to believe that voters may view some candidates as "too young to run." Criticisms of younger generations in the political arena are common, in part because of their low voter turnout. As Holbein and Hillygus (2020, 7) write, young people have been described as "apathetic, disengaged, narcissistic, selfish, entitled, shallow, lazy, impulsive, confused, lost, impatient, and pampered." The conventional wisdom among studies of low youth turnout is that young people lack the interest, sense of civic obligation, or skills to participate in the electoral process, although they are often quite active in other political activities (Wattenberg 2007; Dalton 2008; Holbein and Hillygus 2020). It is possible that negative sentiments against younger voters could translate to a negative bias against younger candidates. Even though younger candidates may be seen as possessing some desirable qualities—such as energy, technological expertise, longer time horizons and greater familiarity with issues important to young people including education, childcare, or climate change—we also know that voters value experience and local ties (e.g., Jacobson 1983; Shugart, Valdini and Suominen 2005). Younger candidates may therefore be seen as simply too inexperienced and lacking the necessary skills to be viewed as competent leaders when compared to older candidates.

There are also reasons to doubt whether voters truly prefer older politicians, however. Outside of work in political science, there is an extensive literature on ageism in other settings that finds age discrimination against the elderly is more common than biases against the young (e.g., Kite et al. 2005). Studies on workplace discrimination have found that workers share a widespread belief that at a certain point job performance begins to decline with age (Kubeck et al. 1996; Gordon and Arvey 2004). While some view older workers as more dependable and trustworthy, others see them as being more resistant to change, lacking creativity, possessing

fewer skills and less stamina, and being less willing to learn or work with others (e.g., Posthuma and Campion 2009).

The combination of biases against the young and old could also result in a belief that there is an "optimal" age for an elected official. There may be a "Goldilocks" age that is neither too young nor too old and strikes a balance between the benefits of youth and experience. In the workplace literature, there are several examples where people perceive that there is a "correct age" for certain positions. Retail, sales, technology, and finance are often seen as particularly "young" industries (Broadridge 2001; McGoldrick and Arrowsmith 2001), whereas jobs that require more managerial skills are typically associated with older workers (Cleveland and Hollmann 1990). Negative stereotypes about workers are often strongest when applicants do not match the perceived correct age for the position (Perry, Kulik and Bourhis 1996). Thus, it could be that voters believe there is a best age for someone to serve as their representative and judge too young or too old candidates more harshly.

Alternatively, a second framework that could explain the under-representation of younger people in office is in-group favoritism. People may feel the strongest connection to candidates closer to themselves in age because people tend to identify more strongly with members of their in-group, such as those who share a social identity (Tajfel and Turner 1986). According to the literature on descriptive representation, there is a belief that candidates closer in age to a given voter will better emphasize policy issues that are important to members of their age group (Webster and Pierce 2019). Since middle-aged and older people turn out to vote at much higher rates than younger people, however, the distribution of politicians could thus reflect the distribution of actual voters, rather than the distribution of the electorate.

As it stands, relatively few studies focus on voter attitudes toward the age of elected officials, with two recent exceptions. The first is Pomante and Schraufnagel (2015), who run an experiment with American college students, where they randomly present respondents with photos of candidates of different ages. The authors focus on turnout, rather than vote choice, and

find that younger people are more likely to say they will participate in elections when there are younger candidates on the ballot. The second is Webster and Pierce (2019), who use survey data from the Cooperative Congressional Election Study (CCES) to gauge whether voters are more likely to support candidates closer to themselves in age. The authors find some support for the use of age-based heuristics, although their use is most prevalent in low-information elections, among higher-educated individuals, and in judgments made about co-partisan candidates.

These studies are not without their limitations, however. Both studies focus exclusively on the United States, consider only in-group favoritism rather than general age stereotypes, and confront some methodological challenges. Pomante and Schraufnagel (2015) rely on student subjects, which means that we do not know how voters from other age groups would react to their experiment. The authors also use photos of different candidates, who differ in many ways apart from age, complicating their findings. Webster and Pierce (2019), by comparison, rely on observational data, which has the added benefit of realism but raises concerns about selection bias. It might be that candidates from certain age groups share other characteristics apart from age that make them more likely to receive support from similarly aged individuals.

Although not focused on age, there is also some evidence concerning age biases from studies using conjoint experiments that explore other research questions. Contrary to the studies mentioned above, these experiments only test for overall bias, not in-group favoritism, because age is generally included only as a control variable. The findings from these studies are mixed and sometimes conflicting. Depending on the setting and other included variables, these studies alternatively find that voters prefer younger candidates, middle-aged candidates, or have no preference (Arnesen, Duell and Johannesson 2019; Clayton et al. 2019; Horiuchi, Smith and Yamamoto 2020; Kirkland and Coppock 2017; Kage, Rosenbluth and Tanaka 2019; Ono and Burden 2019; Teele, Kalla and Rosenbluth 2018). In Japan, the two conjoint experimental studies that include age have found that voters prefer younger candidates for the House of Representatives, but paradoxically they also prefer candidates with more experience such as incumbents that have

held onto their seats for more than a decade (Kage, Rosenbluth and Tanaka 2019; Horiuchi, Smith and Yamamoto 2020).

Conjoint experiments, too, have their strengths and weaknesses. Within candidate choice experiments, conjoint analyses have a clear advantage compared to traditional vignette experiments in their ability to control for a wide range of candidate characteristics and approximate an information-rich environment (Hainmueller, Hopkins and Yamamoto 2014). One disadvantage, however, is that evaluating long lists of candidate attributes against one another differs from the typical cognitive process that many voters go through when evaluating candidates in real-world elections. Many voters do not collect such detailed information on the set of candidates before voting but instead rely on informational shortcuts based on easy-to-observe characteristics of candidates such as their party, gender, race, and, per our contention, age. Conjoint experiments can also present voters with unrealistic profiles, such as younger candidates that have accumulated more terms in office than is likely or even possible. Additionally, certain combinations may have interaction effects on voter evaluations of candidate quality: younger candidates with lots of prior election wins may be seen as superior to older candidates who have failed to win even once.

We set out to test whether voters dislike younger or older politicians using an original experimental design in Japan. We see our experiment as a complement to conjoint analyses by focusing on a comparably low-information environment that mimics the real-life process that voters go through when they evaluate a candidate's age via their appearance. Our focus on age biases also enables us to test for both general stereotypes and in-group favoritism within the same analysis, as well as the mechanisms underlying age discrimination in elections.

4.2 Evidence from Two Candidate Age Experiments in Japan

Japan provides an ideal setting in which to test for age biases against political candidates for several reasons. First, young people have traditionally been under-represented in political

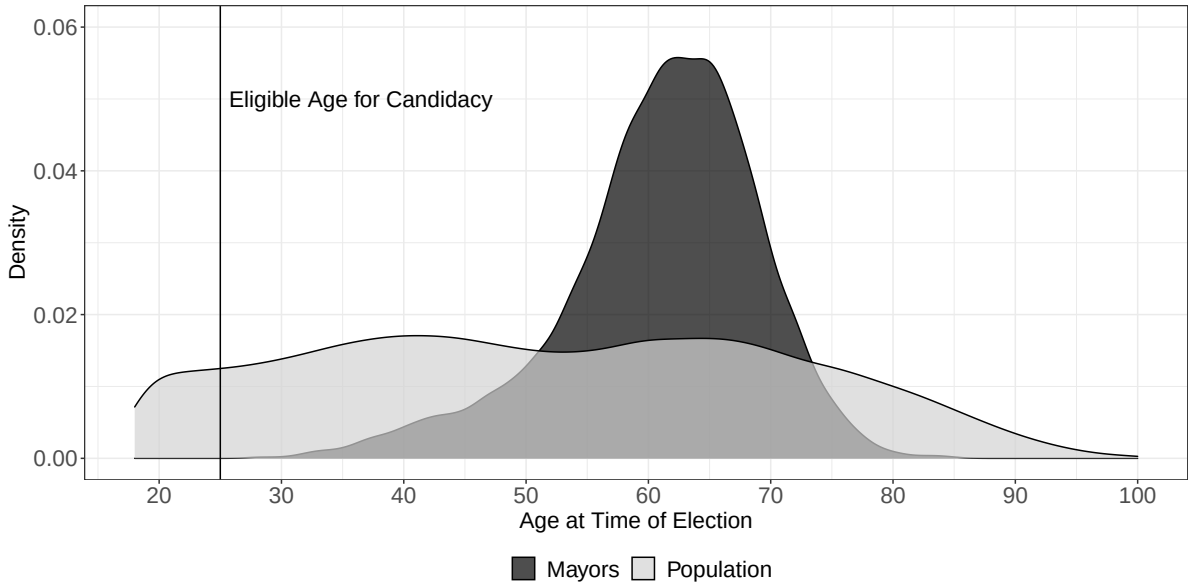
institutions across Japan (Chapter 3), yet age-related policy issues are salient given that the country faces the demographic challenges of a declining birthrate and rapidly aging population (Chapter 1). Japan is also a society where there are strong age norms regarding elder respect and the roles of younger and older people in society.

Second, we focus on mayoral elections, which involve candidate-centered campaigns where nearly every candidate runs as an independent. Rather than relying on a party label, candidates in these campaigns devote significant effort to developing a personal vote. Campaigns in Japan are also famous for their strict regulations and heavy reliance on campaign posters, which are posted throughout the municipality in high traffic areas and feature above all else the candidate's name and photo (McElwain 2008). Voters in Japan are thus used to learning about candidates via these posters, which for many, is their first indication that an election is approaching (Lewis and Masshardt 2002). Furthermore, the candidate pool for mayoral races is largely homogeneous—over 99% are ethnically Japanese, and over 98% are men—making age one of the most distinct differences between candidates.

Figure 4.1 shows the age distribution of mayors elected between 2004 and 2019 compared to that of the voting-age population.[4] As discussed in Chapter 3, Japanese citizens must be at least 25 years old to run for mayor, but the median age of an elected mayor is considerably higher at 62, 10 years older than the median eligible voter (52). Figure 4.1 also reveals that younger voters are by far the most under-represented age group: people under 50 make up nearly half (47%) of the electorate, but just 9% of mayors. By contrast, middle-aged voters are clearly over-represented: individuals between the ages of 50 and 70 comprise a third (32%) of eligible voters, yet make up 79% of mayors. Lastly, elderly voters are also under-represented in office, although to a lesser extent than younger voters. Citizens who are 70 or older represent a fifth (21%) of the voting-age population as opposed to 12% of mayors. The modal mayor in Japan begins their term at 65 years old, the national age of retirement.

[4] We choose to focus on 2004–2019 because JMED lacks some data for earlier election years, but we find similar results if we instead use the full 1999–2019 period in JMED.

Figure 4.1: Age Distribution of Mayors in Japan, 2004–2019



Notes: JMED (2020); Statistics Bureau of Japan (2004–2019).

Third, mayors in Japan have significant discretion over municipal policy. In evaluating mayoral candidates, the advantage here is that survey respondents can expect that younger and older mayors will have similar office responsibilities regarding policy decisions. By contrast, representatives in a legislature often have to work with other representatives, their party leadership, and the executive to pass legislation. Moreover, given that legislatures in Japan operate under strong seniority norms, respondents might expect that older legislators (with potentially more experience in office) will have more influence over policy than younger legislators. Thus, mayoral elections provide a setting where voters can believe that a politician's age has the clear potential to influence policy outcomes.

4.3 Experiment 1: Candidate Age and Voter Biases

To test for age biases, we fielded two experiments embedded in two different nationally representative surveys in Japan. Experiment 1 was administered in March 2020 by Rakuten Insight Inc., one of the major survey companies in Japan. We randomly selected our survey sample from Rakuten's subject pool after adjusting their settings to match the population census in terms of respondent age, sex, and region of residence. We initially aimed at collecting a sample size of 3,000 but received 2,901 valid responses.

For Experiment 1, we began by purchasing licenses from Shutterstock to use and manipulate the photos of two different male Japanese models (Table 4.1). We selected these models because they looked similar to typical mayoral candidates and their photos looked similar to typical campaign materials such as candidate posters. Both models are wearing dark grey suits with brightly colored ties, have slight smiles, face directly toward the camera, and have relatively conservative haircuts that could be seen on people of different ages. One of the models is additionally raising a clenched fist in a sign that is commonly used by candidates of all ages in Japanese elections.

After purchasing these photos, we next manipulated them to appear younger or older using FaceApp. FaceApp is a free, mobile application created by Wireless Lab for iOS and Android that became popular in summer 2019 because of its ability to age or de-age a user's photos realistically. While such applications had existed before, FaceApp became especially popular thanks to its photorealism and its use by many celebrities. On social media, the app went viral on Twitter and Instagram under the #AgeChallenge, which challenged people to upload images of themselves with the app's old-age filter applied. By mid-July, more than 150 million people had downloaded the app.[5]

While FaceApp uses a proprietary algorithm that Wireless Lab does not share publicly, the

[5]The application came under controversy for privacy concerns when it was discovered that using the app granted Wireless Lab the license to use a user's photos for other purposes. See for example John Koetsier, "Viral App FaceApp Now Owns Access to More Than 150 Million People's Faces and Names," *Forbes*, July 17, 2019.

Table 4.1: Hypothetical Candidates for Mayor

	Younger	Middle-Aged	Older
Model 1			
Model 2			

Notes: In Experiment 1, respondents were randomly shown two candidate photos at the same time, one of each model. In Experiment 2, respondents were randomly shown one candidate photo.

company has said that it ages or de-ages photos using artificial intelligence and neural networks. More specifically, this process involves manipulating faces along several dimensions, including changes to (i) wrinkles, especially on the forehead, above the nose, and in the smile lines between the nose and mouth; (ii) skin elasticity, as skin becomes looser with age, especially underneath the eyelids and around the neck; (iii) color contrast, as faces with high color contrast between the eyes, lip, and mouth tend to appear younger than faces with low contrast; (iv) skin pigmentation, as hormones and sun exposure darken the skin over time; and finally (v) hair color, as our hair follicles tend to grow grey, silver, or white with age.

Importantly, FaceApp only manipulates elements of each photo that are likely to change with aging but does not modify the model's underlying facial structure, expression, hair, or anything related to their clothes or the background of the original photo. Moreover, the manipulated photographs retain sufficiently high resolution such that each photo looks realistic. Using such photos in our experiment thus effectively controls for any potential confounding factors unrelated

to aging that might arise from using different models or actual candidate photos. Accounting for these factors is especially important given the extensive literature on how aspects of a candidate's appearance such as attractiveness, smile, facial structure, and skin tone can influence voter evaluations (Atkinson, Enos and Hill 2009; Bailenson et al. 2008; Ballew II and Todorov 2007; Banducci et al. 2008; Berggren, Jordahl and Poutvaara 2010; Caruso, Mead and Balcetis 2009; Horiuchi, Komatsu and Nakaya 2012; King and Leigh 2009; Kirkland and Coppock 2017; Krupnikov, Piston and Bauer 2015; Lawson et al. 2010; Terkildsen 1993; Todorov et al. 2005; Weaver 2011)

We used FaceApp to create three versions of each model's photo that approximated the age range of mayoral candidates in Japan, which are shown in Table 4.1. For each model, we aimed to create one photo on the younger end of the spectrum, one middle-aged, and one older. In a pilot survey (sample size: 300), we asked respondents to guess each model's age to verify that the photos met our expectations. Respondents estimated that the three versions of Model 1 were 37, 62, and 82 years old and that the three versions of Model 2 were 33, 58, and 80 years old. We also checked respondent estimates of each candidate's age in the survey itself (sample size: 3,000), and ended up with slightly younger estimates: respondents thought that the photos of Model 1 were 29, 52, and 72 years old, respectively, and that the three photos of Model 2 were 30, 51, and 72 years old.

For Experiment 1, we randomly assigned respondents to view two photos (one of each model) from Table 4.1 and told respondents that they would be asked a series of questions about a mayoral election in which these two people were the candidates. We additionally mentioned that (i) neither candidate was the incumbent; (ii) both candidates were independents; and (iii) the election was for a city where the respondent resides. Our experiment is thus a 3×3 factorial design, where the three levels of each treatment are the younger, middle-aged, and older versions of each model's photo.

After showing the two candidate photos, we then asked each respondent two questions:

whether the respondent would turn out to vote in an election featuring these two candidates on the ballot, and which candidate the respondent would vote for in the election. Our two main goals were to test whether voters are more likely to turn out or support candidates of a particular age group than others (age stereotypes) and whether they view candidates closer to themselves in age more favorably (in-group favoritism).

Our research design has some disadvantages relative to existing candidate choice experiments, such as those that rely on a vignette or conjoint analyses. The first is that we cannot control for other relevant candidate characteristics that might affect voter evaluations or interact with age, such as a candidate's work history or stated issue positions. The second is that we lack some specificity concerning the candidate's age. Whereas vignette and conjoint analyses can list the exact age of candidates, we ask respondents to make their judgments based on photos.

However, we believe that our design offers several advantages and serves as an important complement to other experimental work. The first is the added realism of relying on candidates' faces rather than researcher-created stories about the candidate or long lists of candidate attributes in paired tables. We seek to approximate how voters might react when they see candidates in person or their campaign materials. Our experiment thus emulates a sensation that is closer to a first impression or a low-information environment where voters do not necessarily know a lot about each candidate's background or issue positions. Our study is closest to that of Pomante and Schraufnagel (2015), but we improve on their research design by using manipulated photos of the same person rather than different models and photos that differ along multiple dimensions apart from age. Our design's innovation is that we use advances in machine learning to create realistic photos that would not otherwise be possible, allowing us to capture voter evaluations about candidates at different stages in their life cycle within an experimental setting.

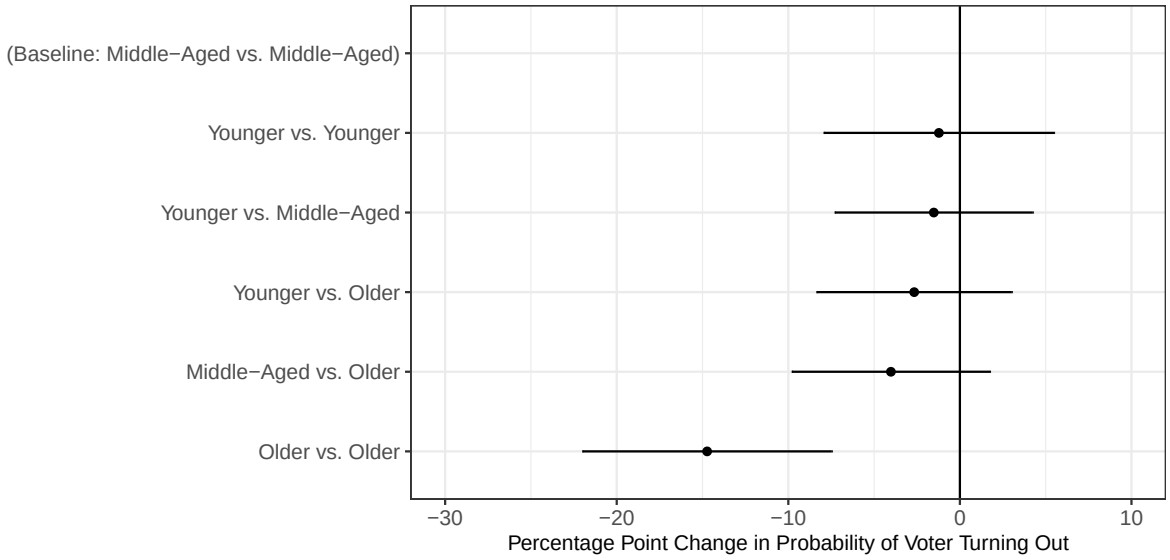


Figure 4.2: Candidate Age and Turnout

Notes: Dependent variable is equal to 1 if a respondent said they would turn out for an election with these candidates on the ballot, and 0 otherwise. Baseline turnout is 79%. Bars show 95% confidence intervals.

4.4 Do Voters Dislike Younger or Older Politicians?

Do voters hold certain biases toward candidates based on their age? To find out, we begin by considering how our candidate photos affected respondent willingness to turn out in a hypothetical election. For ease of presentation, we average our results across the two models such that Younger Model 1 vs. Middle-Aged Model 2 is treated the same as Middle-Aged Model 1 vs. Younger Model 2. We thus collapse our 3×3 experiment into six treatment conditions: Younger vs. Younger, Younger vs. Middle-Aged, Younger vs. Older, Middle-Aged vs. Middle-Aged, Middle-Aged vs. Older, and Older vs. Older.

Figure 4.2 plots the likelihood of respondents saying that they would turn out to vote across these treatment groups, using turnout in Middle-Aged vs. Middle-Aged elections (79%) as the baseline condition. The first four treatments are strikingly similar and do not differ significantly from the baseline group. So long as at least one candidate was younger or middle-aged, voters responded that they would be just as likely to participate in the election. By

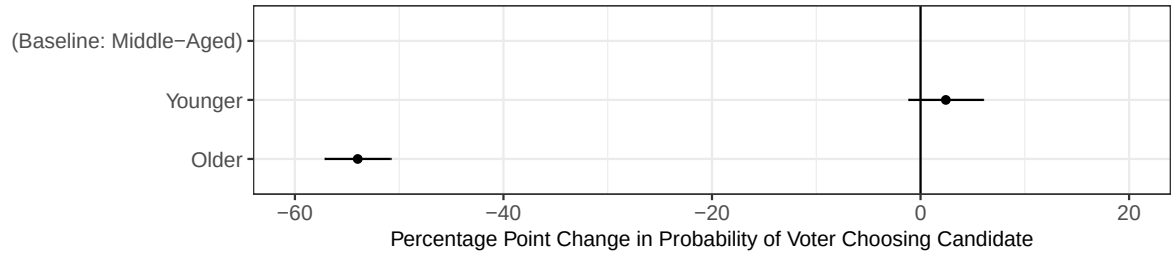


Figure 4.3: Candidate Age and Vote Choice

Notes: Dependent variable is equal to 1 if the respondent said they would vote for the candidate, and 0 otherwise. Bars show 95% confidence intervals.

comparison, respondents were 15 percentage points less likely to report that they would turn out when both candidates were older. In sharp contrast to the idea that voters prefer older politicians over younger ones, we find that voters are significantly less interested in mayoral contests with only older candidates.

Does this bias against elderly politicians affect vote choice as well? Figure 4.3 plots the difference in the probability that respondents would vote for the younger or older candidate, using the middle-aged candidate as the comparison condition. We again average our results across both models, but this time focus only on choices made by respondents in treatment conditions where the candidates in the hypothetical election differed in age: Younger vs. Middle-Aged, Younger vs. Older, and Middle-Aged vs. Older.

As shown in Figure 4.3, we find that voters disliked older candidates substantially more than either younger or middle-aged candidates. When presented with a mayoral race between an older and a younger or middle-aged candidate, voters were more than 50 percentage points less likely to choose the older candidate. In contrast, voters appeared equally willing to cast their vote for either the younger or middle-aged candidate.

These findings suggest that voters have a strong, negative bias against elderly politicians, but do not dislike younger politicians compared to other age groups. While demand-side factors may play a role in explaining the steep drop-off in the number of candidates that run for office

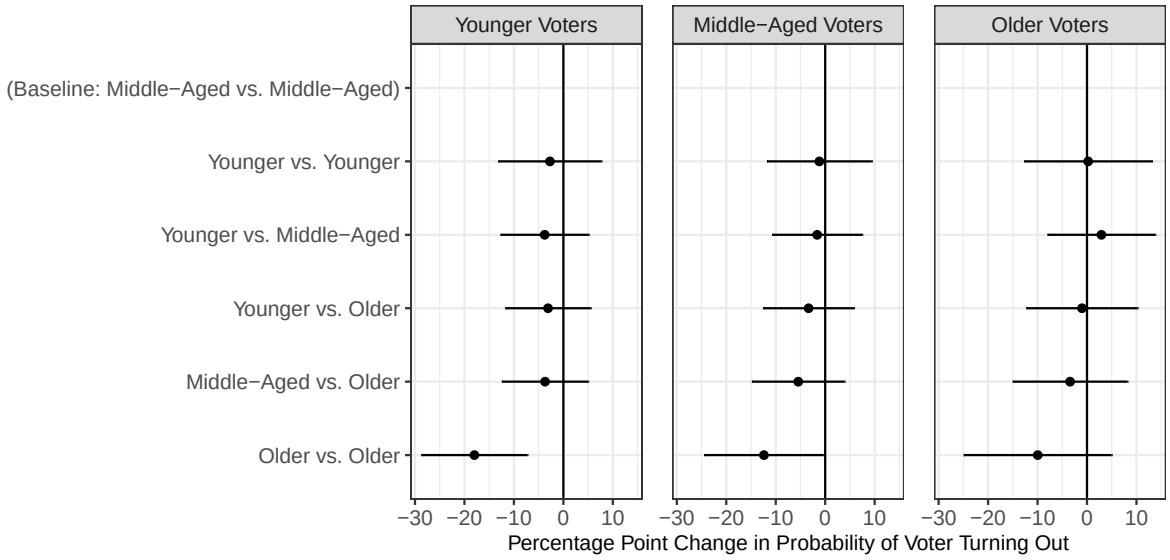


Figure 4.4: Candidate Age and Turnout by Age of Respondent

Notes: Dependent variable is equal to 1 if a respondent said they would turn out for an election with these candidates on the ballot, and 0 otherwise. Baseline turnout is 73% for younger voters (under 50), 83% for middle-aged voters (50–69), and 89% for older voters (70 and over). Bars show 95% confidence intervals.

after age 70, our results suggest that voter biases are not to blame for the shortage of younger candidates. Voters do not dislike younger candidates any more than middle-aged candidates, even though mayors under 50 are outnumbered nearly 9 to 1 by mayors between the ages of 50 and 70.

4.4.1 In-Group Favoritism

A second pathway through which age biases could help explain the shortage of younger candidates is in-group favoritism. If voters view candidates closer to themselves in age more favorably, but older voters turn out at much higher rates than younger voters, the result could still be an electorate-level bias toward older candidates. To explore this possibility, we break down our experimental results in Figure 4.4 into three groups depending on the age of the respondent: younger voters (under 50), middle-aged voters (50–69) and older voters (70 and over).

We again find that the first four treatment conditions, where at least one candidate is

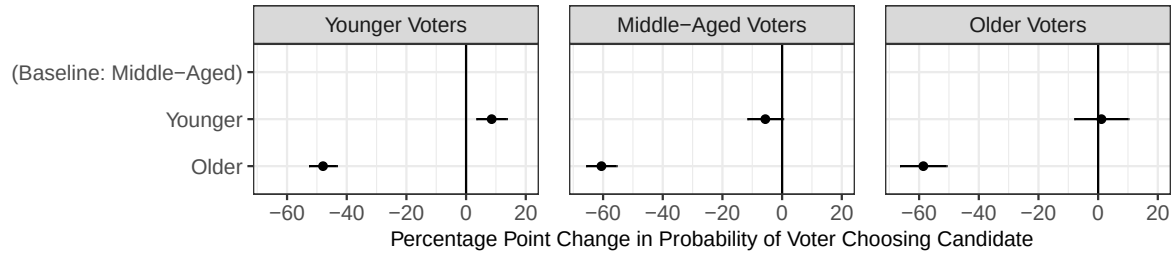


Figure 4.5: Candidate Age and Vote Choice by Age of Respondent

Notes: Dependent variable is equal to 1 if the respondent said they would vote for the candidate, and 0 otherwise. Bars represent 95% confidence intervals.

younger or middle-aged, are not significantly different from the baseline group (Middle-Aged vs. Middle-Aged) for any respondent age group. Where we do see some difference across age groups, however, is with the Older vs. Older treatment: younger voters experience the largest, most significant drop in turnout compared to middle-aged or older voters. Younger voters, who already have the lowest baseline turnout—both in our survey and in actual elections—are also the ones most turned off to voting by an election that features only elderly candidates.

In Figure 4.5, we similarly break down our results for vote choice by the age of the respondent. We find some evidence of in-group favoritism for younger and middle-aged voters, but not for elderly voters. When comparing younger and middle-aged candidates, we find that younger voters are 8.6 percentage points more likely to choose the younger candidate ($p<0.01$), whereas middle-aged voters are 5.6 percentage points more likely to vote for the middle-aged candidate ($p=0.06$). By comparison, the right panel in Figure 4.5 reveals that older voters do not feel significantly more attached to older candidates than other age groups, and tend to dislike them even more than younger voters.

Given that middle-aged voters turn out at higher rates than younger voters, could this level of in-group favoritism help explain the shortage of younger candidates? In the Appendix, we re-estimate the vote choice analyses shown in Figure 4.3 for likely voters, i.e., those who self-reported that they would turn out for the race (Figure A1). While likely voters chose middle-aged

candidates more often than younger candidates, the estimate is small (1 percentage point) and not statistically significant. In comparison, the negative bias against elderly candidates is even larger at more than 60 percentage points.

In sum, our findings suggest that voter biases are unlikely to play a substantial role in explaining the under-representation of younger politicians in mayoral offices, but they may help explain the relative absence of much older politicians.

4.5 Evidence from Actual Mayoral Elections

Experiments tend to have high internal validity, but they can suffer from low external validity. While we believe that our experiment approximates the real experience of Japanese voters, there are of course clear differences between viewing a candidate photo via an online survey and seeing a candidate in person or on a poster on the street, not least because the latter person is an actual candidate for office.

In this section, we test whether our findings generalize to actual elections using the Japanese Municipal Elections Dataset (JMED) discussed in Chapter 3. JMED includes information on the near universe of candidates who competed in mayoral elections between 2004 and 2019, including information on their age, gender, incumbency, and vote share, as well as turnout in the election. Using this data, we focus on competitive races and set up both election- and candidate-level analyses where the dependent variables are turnout and vote share. To avoid the methodological complication that candidate vote shares in the same election are not independent of one another, we focus on the top-two candidates in races between incumbents and challengers and then estimate each regression analysis separately. Our key independent variables are the sum of the two candidate's ages for our turnout analysis and each candidate's age for the vote share regressions. Finally, for each analysis, we first estimate the bivariate relationship and then a model that includes controls for gender, incumbency, and municipality and year fixed effects.

Table 4.2: Candidate Age, Turnout, and Vote Choice in Actual Mayoral Elections

	DV: Turnout		DV: Vote Share			
	Elections		Incumbents		Challengers	
	(1)	(2)	(3)	(4)	(5)	(6)
Sum of Candidate Ages	0.183***	−0.051***				
	(0.027)	(0.017)				
Age of Candidate			−0.319***	−0.555***	−0.131***	−0.211***
			(0.035)	(0.053)	(0.027)	(0.037)
Female		−2.409***		−2.864		−6.611***
		(0.585)		(3.450)		(1.354)
Incumbent		−1.586***				
		(0.322)				
Constant	41.685***		79.733***		48.572***	
	(3.279)		(2.222)		(1.588)	
Observations	3,388	3,388	2,879	2,879	2,710	2,710
R^2	0.018	0.930	0.036	0.636	0.009	0.644
Municipality Fixed Effects	No	Yes	No	Yes	No	Yes
Year Fixed Effects	No	Yes	No	Yes	No	Yes

Notes: Analysis is for the top-two candidates in competitive races for mayor (2004–2019). Standard errors clustered by municipality are shown in parentheses. *p<.1; **p<.05; ***p<.01.

The results in Table 4.2 provide further evidence in support of our survey experiments. In terms of turnout, we find in our fully specified Model 2 that turnout declines as the sum of candidate ages increases. Our within-municipality estimate suggests that for every additional 10 years of age among the top-two candidates, turnout declines by approximately 0.5 percentage points. Interestingly, the sign of this effect is reversed in our model without controls or fixed effects. This result implies that there is a relationship between the types of municipalities or election years that tend to have higher turnout and the average age of candidates that contest mayoral elections. At the municipality level, this finding makes sense given that turnout is often very high in smaller towns and villages in Japan (Horiuchi 2005), where candidates for mayor also tend to be older (McClean 2020*a*).

Turning to vote share, we find that older candidates for mayor tend to receive a significantly lower percentage of the top-two candidate vote share. For every 10 years of a candidate's age,

our results suggest that incumbents receive as much as 5.6 percentage points less in vote share (Model 4), whereas the vote share of challengers declines by 2.1 percentage points (Model 6). These are substantively large effects and hold even when controlling for other characteristics of candidates and time-invariant factors specific to individual municipalities and election years.

Although not the main focus of this study, we also find in Table 4.2 that turnout is significantly depressed by 2.4 percentage points when there are female candidates in the race (Model 2). Moreover, while female incumbents tend to receive the same number of votes as their male counterparts (Model 4), female challengers receive 6.6 percentage points less on average (Model 6). These results deserve further attention in a separate study, but in this chapter, they provide an interesting context to compare age and gender biases. We find that the voter bias in turnout against candidates that are 10 years older is about one-fifth of the bias against female candidates (0.5 vs. 2.4 percentage points). As for vote choice, age biases appear to be more influential than gender biases when it comes to incumbents, as the latter is not statistically significant, whereas the bias against challengers that are 10 years older is roughly a third that of the bias against female challengers (2.1 vs. 6.6 percentage points).[6]

4.6 Experiment 2: Mechanisms of Age Discrimination

Why do voters dislike elderly candidates? Why do younger and middle-aged voters like candidates closer to themselves in age, but older voters do not? As discussed earlier, we focus on two potential mechanisms of age discrimination: (i) statistical discrimination, where voters use age as a heuristic to infer information about the expected performance of an older politician in office, whether accurate or not, and then evaluate the politician based on this information; and (ii) taste-based discrimination, where voters simply dislike older candidates without any clear explanation.

[6]Here, the observed gender bias in actual elections runs counter to the null findings found in conjoint experiments in Japan (Kage, Rosenbluth and Tanaka 2019; Horiuchi, Smith and Yamamoto 2020)

To test the influence of these two mechanisms, we fielded a second experiment with a nationally representative survey in Japan. Experiment 2 was administered in March 2020 as part of the "Survey on Attitudes Toward Politics, Society, and the Economy," which was conducted by the Research Institute of Economy, Trade, and Industry, a policy think tank in Japan. Our sample size was again 3,000 respondents.

In Experiment 2, we consider three pathways through which this age discrimination against elderly candidates may operate. The first is that voters may infer that older politicians will focus on issues less important to many younger or middle-aged voters, or perhaps that they have less energy to focus on issues in general. The second is that voters may infer that older people have less favorable traits and will be less competent as politicians. The third, which does not necessarily relate to statistical discrimination, is that older candidates may be disliked because they are viewed as less physically attractive (e.g., Todorov et al. 2005). We then compare to what extent these factors predict a voter's belief about a candidate's electability (statistical discrimination) and test whether there is any residual dislike of older politicians after controlling for these factors (taste-based discrimination).

More specifically, in the experiment, we randomly assign respondents to view a single candidate photo and then ask them questions about the candidate's likely issue emphases, traits, attractiveness, and electability. We mentioned that the candidate was running for a mayoral election for a city with a population of around 300,000. We chose to specify the city's population as municipalities in Japan range significantly in size, from a population less than 100 to more than 3 million. The central government can grant mayors of cities with populations above 200,000 additional discretionary powers over municipal policy.[7] We decided to ask about a relatively larger city to avoid having respondents make their own inferences about the type of municipality and level of mayoral discretion. Each respondent completes the experiment twice, once for each

[7]The central government can designate cities with a population of 200,000 as "core cities" (*chukaku shi*) and delegate certain functions to them that are otherwise handled at the prefectural level. Local Autonomy Act, Article 252, Section 22.

model, with each experiment thus being a 1×3 design.

4.6.1 Policy Issues

When voters see candidates of different ages, do they infer that these candidates will emphasize different policy issues? One possibility is that voters associate politicians more with issues that are especially salient for members of the politician's age group. Thus, voters may believe that younger politicians will focus more on education and childcare; middle-aged politicians may be seen as primarily concerned with the economy; and older politicians may be linked mostly to elderly care and healthcare. If these issues are important to voters, voters may prefer candidates in their age group because they believe these candidates will devote the most attention to these age-related issues. A second possibility is that voters associate age with overall energy level and attention to policy in general. Therefore, voters may dislike elderly candidates more than middle-aged or younger ones because they believe that older candidates will devote the least energy to policy issues.

To assess these hypotheses, we asked respondents how likely they thought each candidate would be to emphasize 11 different policy issues. We selected these issues based on our substantive knowledge about local government in Japan and by consulting past elite and public opinion surveys. For each issue, respondents answered on a 5-point Likert scale, ranging from "Very Unlikely" to "Very Likely" to emphasize the issue. In the main text, we focus on the percent of respondents who said that the candidate would be "Likely" or "Very Likely" to emphasize the issue.

Figure 4.6 plots the average responses for our 11 policy issues together with a 12th plot that calculates the average level of issue attention by each candidate age group. As with our earlier experiments, we average the results across our two models.[8]

We find clear age differences across these policy issues. Respondents in general thought

[8] We find no substantial differences if we instead calculate the results separately for each model.

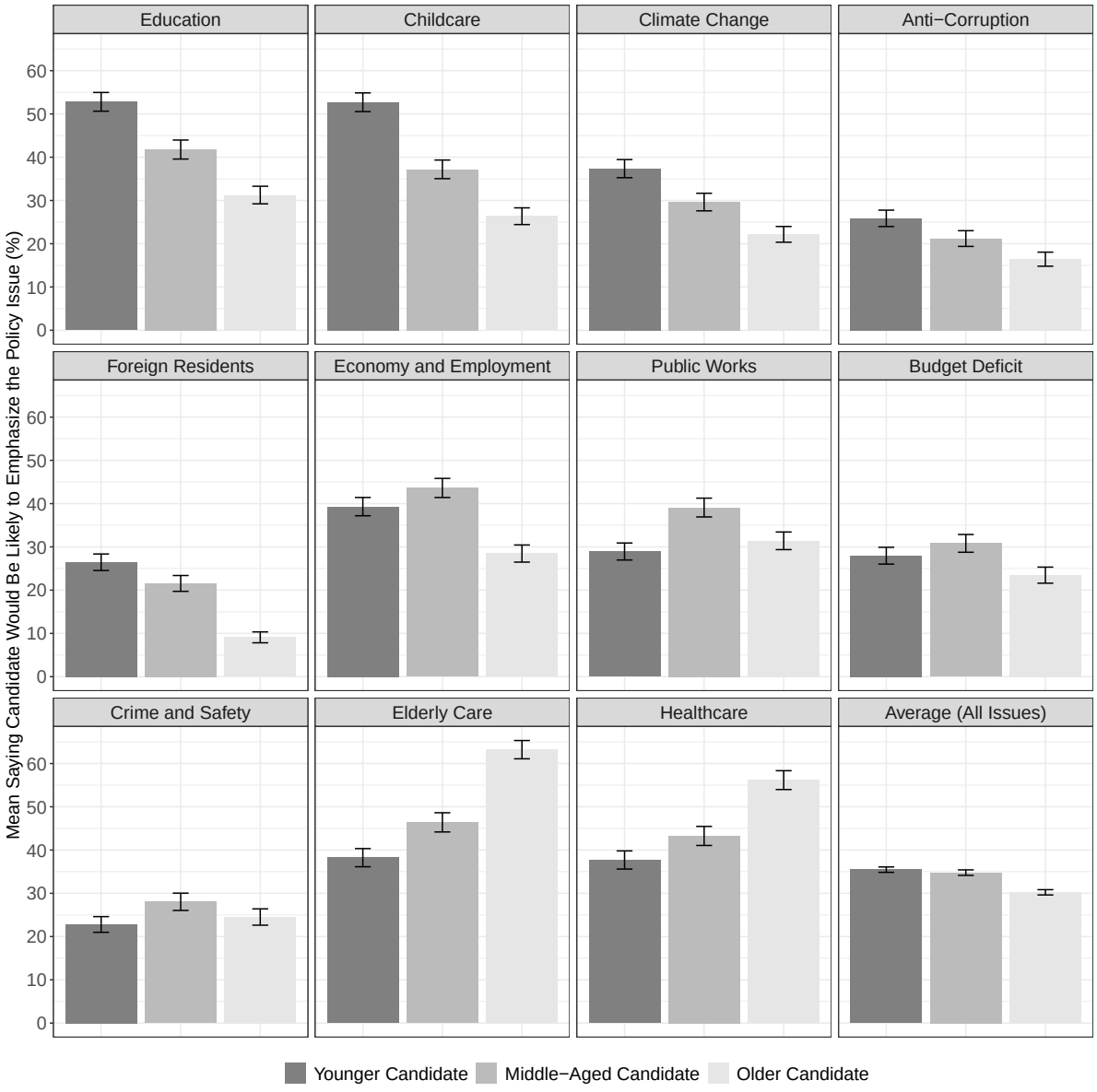


Figure 4.6: Candidate Age and Policy Issues

Notes: Dependent variable is equal to 1 if respondents said that the candidate would be "Likely" or "Very Likely" to emphasize the policy issue, and 0 otherwise. Bars represent 95% confidence intervals.

that younger candidates would be more likely to focus on education, childcare, environment and climate change, anti-corruption, and foreign residents and multiculturalism. Middle-aged candidates were most associated with the economy and unemployment, public works, budget deficit, and crime and safety. Finally, older candidates were seen as emphasizing elderly care and

healthcare.

We can also see that the most popular issues that voters connected with candidates relate to welfare and the economy. Notably, the top two issues receiving focus across candidates were those most important to elderly voters: elderly care (49.3%) and healthcare (45.7%). Education (41.9%) and childcare (38.8%) did follow close behind, but our results still indicate that on average, voters expect politicians to pay more attention to elderly issues. We also see the biggest differences in voter inferences on these age-related welfare issues: voters saw younger candidates as more than 20 percentage points more likely to focus on education and childcare compared to older candidates, and likewise more than 20 percentage points less likely to emphasize either elderly care or healthcare relative to older candidates.

Issues related to the economy came in second to welfare concerns, such as the economy and employment (37.1%), public works (33.1%), and the budget deficit (27.4%). For these issues, however, we find a curvilinear relationship where voters associated the middle-aged candidate most with economic issues. This finding could reflect voter perceptions that middle-aged candidates strike a balance between having more experience with the economy than younger candidates, yet still being active participants in the labor force compared to older candidates.

Among the issues receiving somewhat less attention, we can also see that voters clearly connected younger candidates with more liberal issues such as climate change (29.7%), anti-corruption (21.2%), and foreign residents and multiculturalism (19.0%). The age gap for climate change is especially large, with voters perceiving younger candidates as being more than 15 percentage points more likely to emphasize the issue relative to older candidates.

Finally, in our last plot, we find that older candidates are seen as devoting the least attention to issues overall by about five percentage points relative to the other age groups. While we conduct more formal tests later in the chapter, this perceived lack of attention to policy issues—especially those apart from elderly care and healthcare—could be part of the story for why older candidates are viewed so negatively by voters.

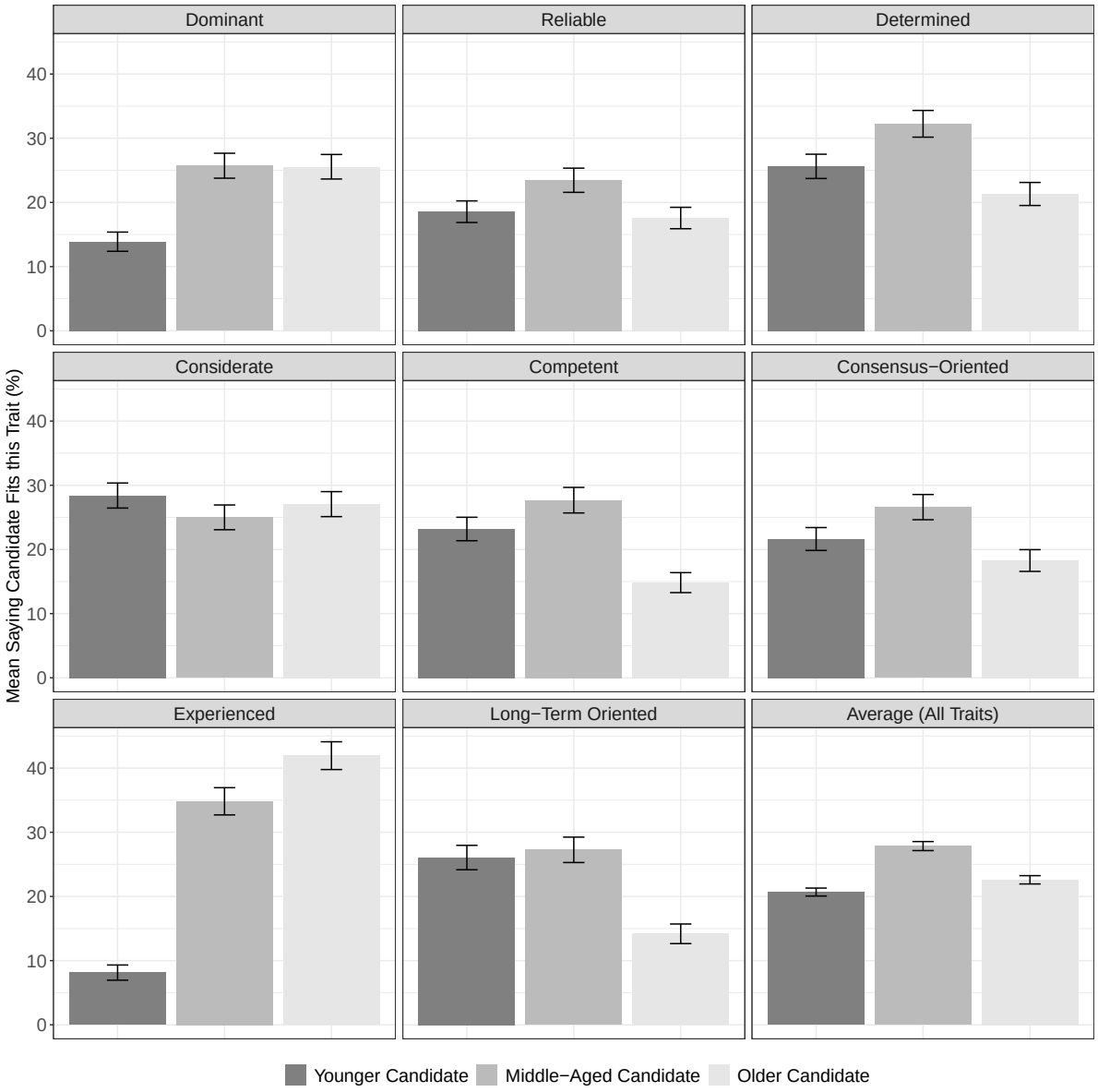


Figure 4.7: Candidate Age and Traits

Notes: Dependent variable is equal to 1 if respondents said that the trait was "Applicable" or "Very Applicable" to the candidate, and 0 otherwise. Bars represent 95% confidence intervals.

4.6.2 Traits

Do voters believe that older politicians lack the traits necessary to be effective in office? Figure 4.7 explores the link between a candidate's age and respondent evaluations about their

likely traits. We asked about eight different traits in all, and again include a final plot that shows the overall average across traits.

We find that middle-aged candidates are generally viewed the most favorably, with some exceptions. Voters inferred that middle-age candidates would be more likely to be reliable, determined, competent, and consensus-oriented than other age groups. Younger candidates were seen as the most considerate, albeit by a small, insignificant margin, and the least dominant. Older candidates were seen as the most experienced and the least long-term oriented.

Perhaps unsurprisingly, we find the largest difference in experience. Respondents were over 35 percentage points less likely to report that a younger candidate should be seen as experienced than an older candidate, and over 25 percentage points less likely than a middle-aged candidate.

Thus, while the average result shown in the last box suggests that younger candidates are evaluated least favorably concerning traits, this effect is primarily driven by experience. Compared to older candidates, for example, younger candidates are seen as significantly more determined, competent, consensus-oriented, and long-term oriented, whereas older candidates are seen as more dominant.

4.6.3 Attractiveness

Are older candidates viewed as less attractive than other candidates? Figure 4.8 plots the results from our question asking survey respondents whether they found their randomly assigned candidate photo to be attractive. As suspected, younger candidates are seen as the most attractive, followed closely by middle-aged candidates, with older candidates lagging by more than 25 percentage points.

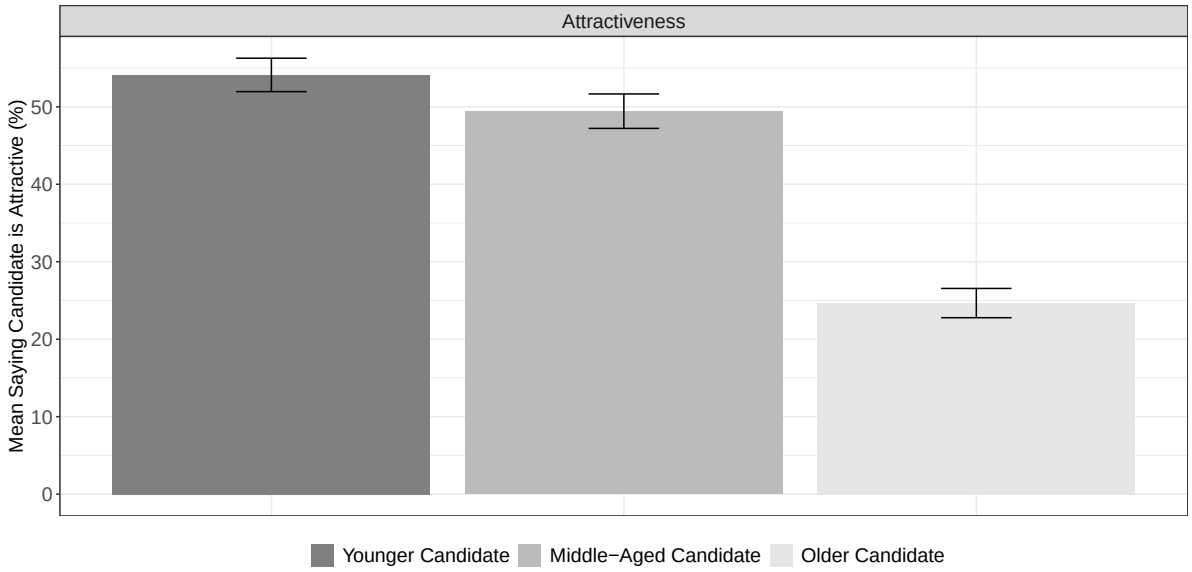


Figure 4.8: Candidate Age and Attractiveness

Notes: Dependent variable is equal to 1 if respondents said that the candidate's appearance was "Very Good" or "Good," and 0 otherwise. Bars show 95% confidence intervals.

4.6.4 Electability

The previous three sections have found that voters draw clear links between a candidate's age and their issue emphases, traits, and attractiveness. Across all three categories, older candidates tended to fare less favorably, except for questions about elderly issues and experience. Do these three factors explain why voters tend to dislike older candidates? Or do voters still dislike older candidates even when controlling for these characteristics?

We put these questions to the test by examining the individual-level correlation between respondents' answers to these three questions, the respondent's age, their estimate of the candidate's age, and a final question where they rated the overall electability of the candidate. As with previous survey questions, the electability question was asked using a 5-point Likert scale. Here, we dichotomize the responses such that the dependent variable equals 1 if the respondent said the candidate was "Likely" or "Very Likely" to be elected mayor, and 0 otherwise. Table 4.3 reports the results from separate OLS regression analyses for each candidate age, averaged across the

Table 4.3: Determinants of Candidate Electability by Age

	DV: Electability of Candidate		
	Younger Candidate	Middle-Aged Candidate	Older Candidate
	(1)	(2)	(3)
Estimate of a Candidate's Age	−0.001	−0.004***	−0.005***
	(0.001)	(0.001)	(0.001)
Policy Issues	0.017***	0.021***	0.005
	(0.004)	(0.004)	(0.003)
Traits	0.077***	0.067***	0.046***
	(0.007)	(0.006)	(0.006)
Attractive	0.255***	0.313***	0.190***
	(0.021)	(0.024)	(0.025)
Age of Respondent	0.0002	0.0003	−0.001***
	(0.001)	(0.001)	(0.0005)
Constant	0.017	0.212***	0.374***
	(0.037)	(0.073)	(0.078)
Observations	2,053	1,944	2,003
R^2	0.346	0.429	0.237

Notes: Dependent variable is equal to 1 if respondent said the candidate was likely to be elected mayor, and 0 otherwise. Standard errors clustered by respondent are shown in parentheses. *p<.1; **p<.05; ***p<.01.

two models.

Across these three models, we can see that voter inferences about a candidate's policy issues, traits, and attractiveness are significant predictors of their opinions about the candidate's likely success, except for policy issues for older candidates. We find that each additional policy issue (up to 11) raises voters' expectations about a candidate's electability by 1.7 to 2.1 percentage points for younger and middle-aged candidates, respectively, but has no significant effect on older candidate evaluations. The impact of traits is considerably larger, and has the biggest effect on younger candidates, with each associated trait (up to 8) raising their electability rating by 7.7 percentage points. Finally, attractiveness is by far the strongest predictor, increasing evaluations by 19.0 to 31.3 percentage points depending on the candidate's age.

While these results offer support for our statistical discrimination mechanism, the findings for estimates of a candidate's age also suggest an effect of taste-based discrimination. Even when

controlling for voter inferences about policy issues and traits, as well as voter perceptions of the candidate's attractiveness, middle-aged candidates and older candidates who were seen as older were significantly more disliked than those seen as younger. For older candidates, their electability rating dropped on average by five percentage points for every 10 years in their age estimate. By contrast, voters did not show any evidence of taste-based discrimination against younger candidates. Those who viewed the youngest models as significantly younger did not view them more negatively, and the point estimate suggests they may have been viewed more favorably.

Lastly, we also find in Model 3 that older respondents were significantly less likely to view older candidates as electable. This matches with our lack of a finding for in-group favoritism in Experiment 1. In other words, not only are older candidates viewed the least favorably, but they tend to be viewed less favorably by older voters.

Together, these results provide some evidence for both statistical and taste-based discrimination. Evaluations based on age about a candidate's issue emphases and traits were positively correlated with whether that respondent saw the candidate as electable. However, for middle-aged and older candidate photos, the respondent's estimate of the candidate's age was still negative and strongly significant even when controlling for these other factors, suggesting a residual dislike of elderly candidates.

4.7 Discussion

Young people are under-represented in most political institutions. However, our findings in this chapter indicate that most voters would be happy to see this age bias corrected. Across our experimental and observational tests, we find that voters are equally likely to support younger candidates as they are middle-aged candidates, and prefer younger candidates more than older candidates.

Our study thus has implications for policymakers interested in expanding younger people's presence in political institutions. We find no evidence that demand-side explanations such as voter biases pose significant hurdles to more young people serving in elected office. While more studies are needed to replicate our results and test the robustness of the supply-side explanations investigated in Chapters 2 and 3, the extant evidence suggests that age biases in institutions can best be adjusted through tackling younger people's lack of political ambition and reforming institutions to make it easier for them to run for office.

Apart from overall age stereotypes, we also find evidence that voters employ both statistical and taste-based age discrimination in elections. Voters infer clear policy emphases and traits based on a candidate's age, which are linked to their perceptions of the candidate's electability. Younger candidates may not be viewed as having as much experience as other age groups, but they are seen as the most likely to emphasize a wide range of issues, from education and childcare to climate change, anti-corruption measures, and policies that benefit foreign residents and promote multiculturalism. By contrast, we find a sharp drop-off in voter support for candidates as they become elderly: voters described older candidates as less competent than others despite their additional years of experience and saw these candidates as the least likely to focus on any policy issue outside of those most important to elderly voters.

Our results thus add new dimensions to the nascent, but growing literature on age biases. While Pomante and Schraufnagel (2015) find that younger Americans are more likely to turn out when younger candidates are on the ballot, we find in Japan that this is true for all voters when at least one candidate is not elderly. Younger people do not turn out more when they see younger candidates on the ballot compared to middle-aged candidates, which represent more common mayoral races, but they do turn out significantly less when both mayoral candidates are older. As for Webster and Pierce (2019), we find similar evidence of age-group favoritism in our experimental results as they did in their observational study. One caveat of our findings is that this in-group favoritism does not hold for elderly voters, who tend to be more critical than others

of elderly candidates.

Our findings also contribute to studies of elections in Japan that have touched on the age of candidates, albeit tangentially. While Horiuchi, Smith and Yamamoto (2020) and Kage, Rosenbluth and Tanaka (2019) find that younger candidates are generally the most liked in races for the House of Representatives, we find that voter preferences are more balanced between younger and middle-aged candidates for mayoral races. We also find much stronger negative biases against older candidates. These differences in our results could reflect our differences in method, but they may also be indicative of the fact that we focus on mayors who are local executives with much greater discretion over policy than legislators. Future research is needed to disentangle how age biases might differ across government levels (local vs. national), positions (legislative vs. executive), and levels of policy influence.

Finally, we hope that our new experimental design can inspire additional work on age in other countries and electoral contexts. While conjoint analyses have exploded in popularity in recent years, no single research design can be a panacea for answering every research question. Moreover, our design only scratches the surface concerning what is possible in terms of image manipulation via machine learning and neural networks. As these processes grow increasingly sophisticated and accessible to scholars, more research is needed to explore how people react when confronted with realistic-looking representatives (or other political actors) of different ages and how age biases interact with discrimination against other identities, such as gender and race.

Chapter 4, in part, is currently being prepared for submission for publication of the material: McClean, Charles T. and Yoshikuni Ono, "How Do Voters Evaluate the Age of Politicians?" The dissertation author was the primary researcher and author of the paper.

Chapter 5

Communication: Campaigning on Age-Related Welfare

Do younger candidates for political office behave differently than older candidates? In Chapter 4, we found that, if asked, many Japanese voters would respond by saying, "Yes." In our survey experiment, respondents formed clear inferences based on their perceptions of a candidate's age about the policy issues the candidate would emphasize and the traits they would exemplify in office. Understanding that voters use age as an informational shortcut raises a second, important question: Are these judgments accurate? Are younger candidates really all that different from middle-aged or older candidates? Or do voters form these expectations, but in truth, all candidates generally behave the same?

In the first half of the dissertation, I focused on explaining why young people are under-represented in most political institutions, especially within Japan. The evidence presented points more toward supply-side explanations (Chapter 2), such as Japan's restrictive political institutions (Chapter 3), and less toward demand-side reasons, as voters in Japan appear open to having more younger candidates run for office (Chapter 4). In the second half, I turn my attention to whether this shortage of younger politicians *matters* for representation and policy outcomes. Chapter

5 explores whether younger and older politicians differ in how they communicate with voters during their election campaigns, and Chapter 6 investigates whether politicians vary by age in the policies they implement once elected.

As laid out in Chapter 1, my central expectation is that age affects a politician's behavior along two dimensions. The first is that I expect politicians to promote welfare policies that are more favorable toward members of their age group. In other words, I anticipate that candidates in their 20s and 30s will be more likely to campaign on welfare benefits that target younger families, whereas candidates in their 60s and 70s will campaign more on benefits for the elderly. The second is that I expect younger politicians with longer time horizons to promote more long-term-oriented welfare policies than older politicians, who will place greater emphasis on policies that increase short-term benefits.

The evidence from Chapter 4 suggests that many Japanese voters share these expectations. Within policy issues (Figure 4.6), the largest differences that we found in voter inferences pertained to social welfare. Respondents viewed younger candidates for mayor as substantially more likely to emphasize childcare and education, whereas older candidates were associated most strongly with elderly care and healthcare. Likewise, within traits (Figure 4.7), we found the greatest differences in voter expectations about candidates when the characteristics in question related to time. Voters saw a strong, positive connection between a candidate's age and their level of experience, but a negative relationship between a candidate's age and their likelihood of promoting policies with a longer-term perspective toward the future.

Do these voter expectations match the real-world behavior of candidates? In this chapter, I examine whether candidates differ along these two dimensions in their campaign communications on the social media platform Twitter. We know from a wide range of past studies that a candidate's race, ethnicity, gender, religion, class, and background experience can all affect their behavior, both in office and on the campaign trail (see Krcmaric, Nelson and Roberts 2020 for a recent review of this literature). I expect that age will similarly affect candidates by shaping their

discussion of how welfare should be distributed between groups and over time.

Apart from analyzing the tweets' content, I also explore whether politicians differ more broadly by age in their use of Twitter. Twitter can lower the resource costs to campaigns, which could be attractive to previously disadvantaged candidates such as younger people (Chapter 2). This may be particularly true in Japan (Chapter 3), where the traditional style of election campaigns has long been out of step with younger people's interests, even to the extent that many campaign activities on online platforms such as Twitter were banned until 2013. I expect younger candidates to be more frequent users of Twitter and use it to interact more with voters.

To test my theoretical expectations, I first collected the Twitter accounts of over 5,000 municipal assembly and mayoral candidates (2010–2019) as part of assembling JMED (Chapter 3). Next, I used the Twitter API to download the more than 500,000 tweets that these candidates tweeted in the three months leading up to their election. Using supervised text analysis and the help of research assistants, I then classified each tweet along the two dimensions of my theory (Figure 1.3): first, whether the tweet pertained to welfare for younger families, elderly welfare, or neither; and second, whether the tweet discussed allocating welfare benefits toward the future, toward the present, or neither.

Using Twitter data thus enables me to analyze the campaign behavior of thousands of municipal candidates of different ages across Japan. Twitter's standardized format and timestamps for each tweet further facilitate the comparison between candidates and over time as opposed to examining individually produced campaign materials, which are likely to differ significantly between candidates. The disadvantage to Twitter is the concern that the behavior on the online platform may be difficult to generalize to other types of offline candidate behavior. With that being said, several recent studies in other contexts suggest a high correlation between the issues discussed by politicians online and offline (Casas and Morar 2015; Barberá and Steinert-Threlkeld 2019). To test this assertion more explicitly in the Japanese case, in the second half of the chapter, I draw on data from the Asahi-Todai Elite Survey (ATES). While the ATES unfortunately does not

include municipal candidates, it does ask both candidates for the House of Representatives (HOR) and a nationally representative sample of voters a series of questions about what the government's priorities should be concerning social welfare.

I find that younger municipal candidates are substantially more likely to have Twitter accounts, tweet more frequently, and interact with others more on the platform compared to older candidates. Candidates under 40 also tweet relatively more about child welfare and allocating greater welfare spending toward the future than older age groups, and relatively less about elderly welfare or increasing present-oriented benefits. The ATES results further reinforce these findings: younger HOR candidates and voters are both more likely to say that education and childcare should be among the government's top priorities, whereas older politicians and voters say the government should instead focus more on pensions and healthcare. Candidates and voters in their 20s and 30s are also more likely than their counterparts in their 50s, 60, 70s, or 80s to support reducing current welfare benefits in order to increase the long-term sustainability of the economy.

Overall, I find that age affects both the policy issues that candidates emphasize in their campaigns and how candidates choose to communicate their positions to voters. Combined with the findings from Chapter 4, the results ultimately suggest that voters are making sensible inferences when evaluating a candidate's age. Younger candidates do in practice emphasize child welfare and the future, whereas older candidates devote more of their campaign's messaging to elderly welfare and the present. Thus, the age of candidates has significant consequences for the policies represented in election campaigns. The fact that older candidates significantly outnumber younger candidates, therefore, raises serious concerns about whether issues important to younger generations are receiving sufficient attention by elected officials.

5.1 Twitter and Election Campaigns

Twitter is the most popular social network platform in Japan. Among countries where Twitter is available, Japan has the highest share of its population on the service (36%) and is second only to the United States in the number of active users at 45.8 million.[1] Twitter's popularity in Japan is thought to stem from its mobile-friendly functionality, anonymity compared to other social media sites such as Facebook, and the fact that users can convey much more in 140 Japanese characters than they can with other languages, such as English.[2] While the user base of Twitter skews younger, it is the most representative social network in Japan. Twitter is the most popular social media site among the elderly and more than 40% of active users are over 40 years old.[3]

Politicians in Japan were initially slow to take advantage of Twitter, but they have started to use it more and more in their election campaigns and communication with constituents. Twitter provides candidates with a low-cost tool to convey information to the public, advertise their events and appearances, promote their personal characteristics and policies, claim credit for their accomplishments, and persuade voters to support them (Gainous and Wagner 2014; Peterson 2012). Within Japan, experimental research has also found that voters who follow a politician on Twitter—in this case, Toru Hashimoto, then mayor of Osaka and co-leader of the Japan Restoration Party—tend to increase their positive feelings toward that politician over time (Kobayashi and Ichifuji 2015). While just 19% of national legislators had Twitter accounts in 2011 (Kinoshita et al. 2011), this percentage increased to 74% by 2020.[4] Compared to other countries, Japanese representatives are more likely to have an account than legislators from the

[1] By comparison, the United States has 59.4 million active users (18% of the population). Statista, "Leading Countries Based on Number of Twitter Users as of January 2020," February 14, 2020.

[2] The character limit was doubled to 280 characters for most users in 2017, but remains at 140 characters for Japanese, Korean, and Chinese languages.

[3] Nithin Coca, "Why Japan Loves Twitter More Than Facebook," *Ozy*, May 31, 2018.

[4] As of June 1, 2020, 335 of 465 (72%) members of the House of Representatives and 187 of 245 members (76%) of the House of Councilors had active Twitter accounts. *Kokkai giin risuto* (List of Diet Members), https://democracy.minibird.jp/, accessed June 1, 2020.

United Kingdom (55%), but are less likely than legislators from Australia (83%), New Zealand (85%), Canada (88%), or the United States (99%).[5]

Why do Japanese politicians lag behind some of their counterparts in other democracies despite the widespread use of Twitter among voters? Twitter may have initially been less popular among candidates because of Japan's strict regulations on election campaigns. Candidates are not allowed to purchase advertising on television, in newspapers, or even on the radio, and they cannot conduct door-to-door canvassing. Instead, every candidate is given a certain amount of free time for advertising, with heavy restrictions on both the amount and type of print, email, and online advertising permitted (McElwain 2008). Contemporary campaigns in Japan thus seem at odds with its reputation for technological innovation. Candidates devote much of their time to making stump speeches outside of crowded train stations, riding around their district in campaign cars and repeating their names over loudspeakers, and affixing colorful posters that emphasize their faces and names to voters (Lewis and Masshardt 2002).

As for the Internet, before 2013, candidates in Japan were permitted to create personal websites, blogs, and profiles on social media platforms such as Facebook or Twitter, but they could not use these sites to solicit support from voters directly. Moreover, as soon as the official campaign period began—ranging from 5 to 17 days before the election depending on the office—candidates had to freeze these sites and could not update them until after the election.[6]

Why did such a ban exist? Article 142 of the Public Office Election Law (1950), which sets the rules for campaigns in Japan, includes strict stipulations on the amount of print materials (e.g., postcards, leaflets, posters) that a candidate can distribute during their campaign. In

[5]Numbers represent the percent of legislators that had a Twitter account and tweeted between January 1 and June 30, 2019. The relatively low number for the United Kingdom is due to only 28% of members of the House of Lords using Twitter compared to 90% of House of Commons members. Kat Devlin, Regina Widjaya, and Jeremiah Cha. "For Global Legislators on Twitter, an Engaged Minority Creates Outsize Share of Content." Pew Research Center, May 18, 2020. https://www.pewresearch.org/global/2020/05/18/for-global-legislators-on-twitter-an-engaged-minority-creates-outsize-share-of-content/.

[6]The official campaign period is 17 days for the Upper House and gubernatorial elections; 14 days for designated-city mayors; 12 days for the Lower House; 9 days for prefectural and designated-city assemblies; 7 days for other city mayor and assemblies; and 5 days for town and village mayors and assemblies.

1996, as the Internet started to gain wider traction in Japan, the Ministry of Home Affairs interpreted content published online as essentially being distributed to an unknown number of voters, thereby violating Article 142, and thus instituted the ban during campaign periods.[7] Penalties for disobeying the law were strict and compliance was high.[8] Initially, many politicians were hesitant to revise the law because they were used to traditional-style campaigning, feared that the costs of Internet advertising might exacerbate inequalities between candidates, and worried that online campaigning might increase incidents of candidate harassment or fraud (Wilson 2014). However, in April 2013, after much debate, an amendment to the Public Office Election Law finally authorized the use of election campaigning over the Internet.[9]

As Twitter has become more popular among candidates in Japan and elsewhere, a debate has emerged as to whether social media can help to level the playing field among aspirants for public office, or whether it will only reinforce traditional power arrangements. Some claimed that the ability to use Twitter for inexpensive, fast, targeted voter outreach might be especially helpful for traditionally disadvantaged candidates (Gainous and Wagner 2014), such as younger people. When the law permitting social media was passed in Japan in 2013, many expressed hope that it would encourage more young people to become involved in politics and increase transparency between politicians and voters by creating a new way for the public to directly contact their lawmakers.[10] On the other hand, several studies found that well-established parties, incumbents, and candidates with larger campaign budgets are the ones who are most likely to use Twitter (Peterson 2012; Evans, Cordova and Sipole 2014; Vergeer and Hermans 2013). In the first *netto senkyo* (Internet election) for the House of Councillors in 2013, for example, it was the long-ruling Liberal Democratic Party that invested the most in creating a social media team to

[7]The Ministry of Home Affairs became part of the Ministry of Internal Affairs and Communications in 2001.

[8]Violators of the law faced up to two years of imprisonment, a fine up to ¥500,000 (approximately $4,700), and could be stripped of the right to run for office or even vote for multiple offenses.

[9]Japan still has strict regulations concerning Internet campaigning. For example, only parties and candidates are allowed to send campaign emails.

[10]Charles T. McClean, "Getting Out the Youth Vote in Japan," *Asia Unbound*, August 5, 2013.

support their candidates' use of Twitter and Facebook.[11]

In short, while it may be inferred that Twitter is a useful tool for less powerful groups such as younger people to communicate directly with voters and compete with more traditional campaigns, there is little systematic research to show this is, in fact, the case. Past studies on Twitter use by elected officials have found that it can differ significantly between candidates depending on their partisan affiliation, ideology, district competitiveness, incumbency status, and ascriptive characteristics such as gender (Barberá et al. 2019; Evans and Clark 2016; Evans, Cordova and Sipole 2014; Peterson 2012; Straus et al. 2013; Vergeer and Hermans 2013; Wagner, Gainous and Holman 2017; Lassen and Brown 2011; Jackson and Lilleker 2011). While age is mentioned in many of these studies, the discussion of its role has largely been limited to the finding that younger legislators were more likely to be early adopters of Twitter in the early 2010s. Since then, other representatives have caught up, and as of 2020, most national politicians are on Twitter. However, apart from early adoption, we know little about how the use of Twitter differs by a candidate's age, either in terms of style or content.

5.2 The Youth Twitter Advantage?

When younger candidates run for mayor in Japan, they do as well or better than candidates from other age groups (Chapter 4). However, young people remain significantly under-represented in political institutions throughout Japan because they lack either the ambition or resources to run for office (Chapter 3). It is especially difficult for candidates interested in public office to amass the necessary financial resources (*kaban*), name recognition (*kanban*), and support organizations (*jiban*) at an early age. These obstacles inhibit young people from mounting competitive campaigns, and depress their interest in even entering the race in the first place (e.g., Lawless and Fox 2015; Shames 2017). Thus, even if voters are supportive of younger candidates

[11] Hiroko Tabuchi, "Ban Lifted, Japan's Politicians Race Online," *New York Times*, July 4, 2013.

in surveys, young people can still face and perceive an age disadvantage when seeking office.

Younger candidates, aware of these disadvantages, may view social media platforms such as Twitter as giving them a greater opportunity to exert control over their campaigns. By relying more on Twitter compared to traditional means of campaigning, younger candidates can potentially reduce the financial costs (*kaban*) of building name recognition (*kanban*) and a support network (*jiban*). Twitter also makes it easier for younger candidates to target younger voters in particular, who are more likely to support younger candidates (Chapter 4) and are the ones that tend to feel the most disconnected from Japan's traditional style of campaigning (Krauss and Pekkanen 2011). Just as younger people are more comfortable using social media to communicate with their friends, family, and others, I expect younger candidates to be the most likely to see value in using these low-cost tools to help them connect with voters during their election campaigns.

H1: Younger candidates will use Twitter more frequently than older candidates.

One of Twitter's advantages as a platform is that it allows candidates to not only advertise themselves and their activities but also interact directly with voters. However, one of the most common findings among studies to date is that candidates tend to use Twitter to broadcast their messages rather than interact with others (Golbeck, Grimes and Rogers 2010; Evans, Cordova and Sipole 2014; Jungherr 2016). In Japan, too, studies suggest that many candidates have turned Twitter into simply another broadcasting tool (e.g., Uenohara 2014). In the 2013 House of Councillors election, a joint study by *Mainichi Shimbun* and Ritsumeikan University found that the three most common words tweeted by candidates during the campaign were *enzetsu* (speech), *senkyo* (election), and *eki* (train station).[12] These results indicated that candidates were mostly using their new online tool to announce when they would next be making a traditional soap-box speech in front of a train station.

Younger people are not only more likely to be early adopters of social media platforms, but also more effective users of them, including when it comes to politics (Vromen, Xenos

[12]Mainichi Shimbun and Ristumeikan University, *Netto senkyo tsuitta bunseki* (Internet Election Twitter Analysis), *Mainichi Shimbun*, July 18, 2013.

and Loader 2015). While other studies find that interactions between candidates and voters are infrequent, and do not investigate the effects of age, there is evidence that dialogues are much more common among certain candidates than others (Vergeer, Hermans and Sams 2013; Graham et al. 2013). I expect younger candidates to be more sophisticated users of social media and to use Twitter to engage more with others on the social network rather than purely broadcasting their message.

> **H2:** Younger candidates will interact with others on Twitter more frequently than older candidates.

Finally, I expect the policy content of campaign messaging on Twitter to differ in two important ways between candidates depending on their age. First, I hypothesize that candidates will focus more on welfare issues important to members of their age group. I expect that younger candidates will tweet more often about policies that benefit younger families, whereas older candidates will place greater emphasis on policies that target elderly retirees. Second, I expect that younger candidates will be more likely to stress welfare policies that allocate greater funding toward the long term, compared to older candidates who will be more focused on short-term benefits. Chapter 4 found evidence for the presence of both dimensions in voter inferences based on a hypothetical candidate's age. In this chapter, I test whether these expectations are borne out in real-world communications on Twitter by candidates during actual campaigns for municipal elections.

> **H3:** Younger candidates will tweet more about child welfare than older candidates, who will tweet more about elderly welfare.
> **H4:** Younger candidates will tweet more about long-term welfare policies than older candidates, who will tweet more about short-term welfare policies.

5.3 Data and Method

Twitter offers a vast amount of data on politicians that is relatively easy to obtain. It is especially useful in the case of candidates for municipal elections, as data on local politicians'

campaigns is otherwise difficult and prohibitively expensive to collect at a large scale. Unlike national elections in Japan, there is no nation-wide survey of local candidates (such as the Asahi-Todai Elite Survey for national candidates), publicly provided data on their parliamentary speech and activities before the election (such as the Diet Record Search System for the national parliament),[13] or information on their campaign manifestos (such as Catalinac's (2016) work on candidates for the House of Representatives). The homogeneity in Twitter's format also facilitates comparisons between municipal candidates compared to individual websites or blogs, which can differ substantially between candidates. Finally, Twitter has the added benefit of temporal granularity. Thanks to Twitter's timestamp for individual tweets, it is possible to identify precisely when candidates share specific messages with their followers (Steinert-Threlkeld 2018).

I choose to focus on Twitter in this chapter both because it is a useful tool for political communication and because it is a platform through which municipal candidates share the policy issues that are important to them. Of course, whether a candidate's behavior online is generalizable to their behavior offline is a concern for all studies relying on social media data. Yet, recent research has suggested that many online behaviors correlate strongly with their offline analogs (Barberá and Steinert-Threlkeld 2019). For example, studies have found that the issues that candidates discuss on social media represent the same issues that they emphasize in their offline press releases and communications (Barberá et al. 2019; Casas and Morar 2015). Likewise, estimates of political behavior by Twitter users concerning their ideology, issue attitudes, and social networks have been shown to correlate highly with offline estimates (Barberá 2015; Bisbee and Larson 2017). By using Twitter, I am thus able to observe important behavior—the real-time communications between thousands of municipal candidates and the public during election campaigns across Japan—that is difficult, if not impossible to observe offline otherwise, and can also offer insights into the candidate's broader campaign messaging.

Analyzing candidate communication at the municipal, rather than the national level, offers

[13]National Diet Library, *Kokkai kaigiroku kensaku shisutemu* (Diet Record Search System), https://kokkai.ndl.go.jp/.

several advantages as well. In national campaigns, we might expect fewer differences between candidates because they are likely to have more resources than municipal candidates and can hire staff to run their Twitter accounts. Party influence is also much greater at the national level, and thus candidates may be strongly encouraged or pressured to use Twitter even if they have no interest in the platform. With municipal races, where most candidates run as independents, we can be more confident that the choices of whether to be on Twitter, how often the platform is used, and which policy issues are emphasized are more likely to be made by the individual candidate. In my interviews with local and national politicians, for example, I found that many mayors controlled their Twitter accounts entirely by themselves, whereas national politicians were more likely to share responsibilities for tweeting with members of their staff. If politicians in municipal elections have greater autonomy over their Twitter use, this allows more room for ascriptive characteristics such as age to influence their behavior.

Assembling a dataset of the tweets of municipal assembly and mayoral candidates consisted of a two-step process. In the first step, I collected the user names of as many municipal candidates as possible. In building the Japan Municipal Elections Dataset (JMED) discussed in Chapter 3, I also scraped every Twitter account listed for a candidate on go2senkyo.com between 2010 (when Twitter was first introduced to Japan) and 2019. In total, I was able to identify the Twitter user names for 5,789 of 110,728 (5%) local candidates: 623 of 8,391 (7%) mayoral candidates and 5,166 of 102,337 (5%) municipal assembly candidates.

In the second step, I used this account information to collect the individual tweets of candidates. Using the Twitter API, I downloaded the 3,200 most recent tweets for each of these candidates.[14] I collected 562,387 tweets in the three months preceding their election, or 97 tweets per candidate on average, just over one per day.

For my hypotheses concerning Twitter use and engagement with others (H1 and H2), I

[14]Initially, I planned to download more tweets via a service such as Crimson Hexagon. However, only a small number of candidates tweeted more than 3,200 times, and only in an even smaller number of cases did this prevent me from gaining access to their campaign tweets.

rely on candidate-level information from JMED and the metadata associated with each tweet from the Twitter API. For H1, I test whether the candidate's age predicts whether the candidate had a Twitter account when they contested the election. For H2, I measure engagement with others via three common behaviors on Twitter, namely, what percent of a candidate's tweets were retweets, replies, or included hashtags. I also look at the total number of tweets and whether candidates received more engagement from others via favorites or retweets of their tweets.

For the hypotheses related to the content of tweets (H3 and H4), I utilized supervised text analysis with a support vector machine (SVM). I first had three research assistants code a random sample of 5,000 tweets along two dimensions: (1) whether the tweet concerned welfare benefits for younger families (child welfare), the elderly (elderly welfare), or neither; and (2) whether the tweet discussed long-term welfare policies, short-term welfare policies, or neither.

Next, I set aside 70% (3,500) of these tweets for the training set and 30% (1,500) for the test set.[15] The SVM seems to have performed well: using a 4-fold cross-validation, I found that the F1 scores of the SVM ranged from 0.58 (elderly welfare) to 0.88 (short-term welfare). In total, 5.5% of tweets were classified as child welfare, 2.5% as elderly welfare, 6.1% as short-term welfare, and 2.6% as long-term welfare.

While examining more than 500,000 candidate tweets offers insights into municipal election campaigns in Japan, there are a few limitations to my approach. The first is that candidates whose account names are listed on go2senkyo.com are not necessarily representative of the population of candidates on Twitter. The information on go2senkyo.com can be provided either by the candidate themselves, the public, or site administrators, but there may be systematic differences between the types of candidates whose information appears on the site and those whose information is absent. Thus, in testing my expectations for H1 and H2, I measure online campaign behavior based both on whether the candidate had a Twitter account *and* whether they listed that account on go2senkyo.com.

[15]For the training set, I only selected tweets that were coded the same way by at least two of the three coders.

A second limitation also relates to the generalizability of the findings concerning tweets' content (H3 and H4). The decision to use Twitter may be correlated with an individual's age (as hypothesized in H1 for candidates) and their opinions toward policy issues such as social welfare. Although Twitter is the most representative social network in Japan, and studies in other settings have found that Twitter activity correlates with offline behavior, we lack research that looks more specifically at municipal candidates in Japan. Unfortunately, testing this assertion at a large scale is difficult because of the challenges mentioned earlier with collecting data on local candidates.

Instead, I test whether the findings from municipal candidate behavior on Twitter generalize to candidates for Japan's House of Representatives (HOR), where data on candidate issue emphases is more readily available. To do so, I rely on the Asahi-Todai Elite Survey, a survey of all candidates for HOR elections (2003–2017) that has an exceptionally high response rate (often exceeding 95%) and asks questions about candidate issue priorities and positions, including those that concern social welfare. With this data, I can test both whether my findings generalize to offline behavior (survey responses) and the extent to which the policies that municipal candidates of different ages emphasize on Twitter are representative of the issue emphases of younger and older candidates for national elections in Japan.

5.4 Results

5.4.1 Age and Twitter Use

What types of candidates for mayor and municipal assembly are active on Twitter? Table 5.1 reveals the results of linear regression models for the more than 100,000 candidates that contested races between 2010 and 2019. Models 1 and 3 use the linear *Age* as the key independent variable, whereas Models 2 and 4 break down candidate ages into five discrete categories, with middle-aged candidates (*50–59 Years Old*) as the baseline group. Models 1 and 2 test only for the effects of age on having a Twitter account. Models 3 and 4 add controls for the candidate's sex,

Table 5.1: Younger Candidates Are More Likely to Use Twitter

	Candidate Has a Twitter Account			
	(1)	(2)	(3)	(4)
Age	-0.005^{***}		-0.003^{***}	
	(0.001)		(0.0003)	
Under 40 Years Old		0.11^{***}		0.08^{***}
		(0.02)		(0.01)
40–49 Years Old		0.06^{***}		0.05^{***}
		(0.01)		(0.01)
60–69 Years Old		-0.05^{***}		-0.03^{***}
		(0.005)		(0.002)
70 Years Old and Over		-0.06^{***}		-0.04^{***}
		(0.01)		(0.003)
Female			0.02^{***}	0.02^{***}
			(0.004)	(0.004)
Incumbent			0.03^{***}	0.02^{***}
			(0.003)	(0.003)
Mayoral Election			0.05^{***}	0.05^{***}
			(0.005)	(0.005)
Constant	0.32^{***}	0.07^{***}		
	(0.04)	(0.01)		
Observations	110,728	110,728	110,728	110,728
Municipality Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	No	No	Yes	Yes
R^2	0.04	0.04	0.21	0.21

Notes: Baseline age group is candidates between 50–59 years old. Standard errors clustered by candidate and municipality are shown in parentheses.

incumbency status, election type, and municipality and year fixed effects.

Across models, it is clear that younger candidates are more likely to use Twitter than older candidates. The estimates in Model 3 suggest that for every 10 years of a candidate's age, their likelihood of using Twitter decreases by three percentage points. In Model 4, I similarly find that candidates under 40 are the most likely group to be on Twitter: they are eight percentage points more likely to have an account compared to 50–59-year-olds, whereas candidates 70 and over are four percentage points less likely to have an account relative to middle-aged candidates. These results hold even when controlling for municipality and year fixed effects, suggesting that the

within-municipality change in the age of candidates contesting elections can significantly affect the likelihood of those candidates using Twitter to communicate with voters.

Apart from age, Table 5.1 also supports some of the findings from studies of Twitter use in other electoral contexts. Women and incumbents are two percentage points more likely to use Twitter than men or challengers (Model 4), as found in studies of candidates for the U.S. House of Representatives (Evans, Cordova and Sipole 2014; Wagner, Gainous and Holman 2017). Mayoral candidates are five percentage points more likely to be on Twitter compared to assembly candidates, which makes sense given that mayoral candidates tend to have more resources and need to reach a wider range of voters in the municipality to win their single-member district contests. These effects also help to add context to the main finding (H1), as age has the greatest impact on a candidate's likelihood of using Twitter in a local race, exceeding that of gender, incumbency status, or election type.

Younger candidates are more frequent Twitter users than older candidates, but does this mean that they also use the social networking service to engage more with others? Table 5.2 looks at how often candidates of different ages tweeted during their campaigns, the extent to which they used Twitter to interact with others (via retweets, replies, or the use of hashtags), and whether they received engagement from others (via candidate tweets receiving favorites or retweets). For space reasons, I show only the fully specified model for each dependent variable with all controls and fixed effects. I also focus only on discrete age groups, although I find similar results if the continuous version of age is used instead (Table A.3).

In terms of the total number of tweets, we can see that younger candidates are not only more likely to have Twitter accounts, but also tweet more often during their campaigns than older candidates. Model 1 suggests that a candidate under 40 tweets 32 more times during the three months leading up to the election than a candidate in their 50s. While the estimates for the other age groups range from insignificant to marginally significant, they tell a similar story in that Twitter use declines with age. Candidates in their 70s and 80s, for example, tweet 37 fewer times

Table 5.2: Younger Candidates Engage with Others More on Twitter

		Engagement with Others			Engagement by Others	
	Tweets (n)	Retweets (%)	Replies (%)	Hashtags (%)	Favorites (median)	Retweets (median)
	(1)	(2)	(3)	(4)	(5)	(6)
Under 40 Years Old	32.24***	0.04**	0.04***	0.06***	−1.03	−84.68
	(10.78)	(0.02)	(0.01)	(0.02)	(1.01)	(145.49)
40–49 Years Old	8.91	0.02	0.02	0.06***	−1.55	−161.64
	(9.41)	(0.01)	(0.01)	(0.02)	(1.53)	(187.74)
60–69 Years Old	−13.06	0.03	0.01	−0.001	−1.57	−127.78
	(9.83)	(0.02)	(0.02)	(0.02)	(1.93)	(188.93)
70 Years Old and Over	−36.96*	−0.02	−0.02	−0.04	−3.75	−154.58
	(19.13)	(0.04)	(0.03)	(0.06)	(2.60)	(168.02)
Female	21.72***	0.07***	0.01	−0.003	−0.81	−132.72
	(7.35)	(0.02)	(0.01)	(0.02)	(1.39)	(209.29)
Incumbent	−24.62**	−0.02	−0.02	−0.02	−1.06	15.60
	(10.70)	(0.01)	(0.01)	(0.02)	(1.23)	(75.43)
Mayoral Election	21.86*	0.01	−0.01	0.08**	11.26	−30.20
	(12.85)	(0.03)	(0.02)	(0.04)	(7.27)	(43.49)
Observations	5,789	5,789	5,789	5,789	5,789	5,789
Municipality Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.32	0.30	0.33	0.39	0.40	0.08

Notes: Baseline age group is candidates between 50–59 years old. Standard errors clustered by candidate and municipality are shown in parentheses.

on average relative to candidates in their 50s.

Again, I find that age is a stronger predictor of Twitter behavior than other candidate characteristics. Women and mayoral candidates tweet about 22 times more than men and assembly candidates, whereas incumbents tweet 25 times less than challengers. The latter finding is surprising given that incumbents are more likely to have Twitter accounts. Then again, even if incumbents have a Twitter account as part of serving in office, they may need to rely less on Twitter when campaigning than challengers because of their other electoral advantages.

In addition to tweeting more often, candidates under 40 are significantly more likely to engage more with others on the platform, as shown in Models 2–4. Candidates in their 20s and

30s devote four percentage points more of their tweets to retweets or replies, and six percentage points more to the use of hashtags relative to candidates in their 50s. While there is some mixed evidence that a candidate's gender (Model 2) or election type (Model 4) are influential for certain interactive behaviors, only the youngest age group is consistently significant across models.

With that being said, Models 5 and 6 show that younger candidates are not more likely to receive engagement from others in return for their greater activity on Twitter. In fact, age, gender, incumbency status, and election type are not predictive of whether the average tweet sent by a candidate is likely to receive either a favorite or a retweet. Part of the difficulty in finding an effect is that it is not uncommon for typical tweets by candidates to draw little attention from others on Twitter. In the previously discussed study by Pew Research of legislators in five countries (Australia, Canada, New Zealand, United Kingdom, United States), the researchers found that the median number of favorites for a national representative's tweets ranged from 5 to 18, while the median number of retweets ranged from 0 to 5.[16] In this sample, the median tweet by a municipal candidate received just a single favorite and retweet, though the mean across tweets is much higher at 10 favorites and 283 retweets. As with national legislators in other contexts, only a small percentage of Japanese municipal politicians' tweets receive significant engagement from other users on Twitter.

Across Tables 5.1 and 5.2, the findings nevertheless indicate that municipal candidates in their 20s and 30s are more likely to have Twitter accounts, tweet more often, and use a higher percentage of those tweets to engage with others on the platform compared to older candidates. The coefficient estimates for each of these behaviors are large and meaningful, and their effect is cumulative from the perspective of voters. Voters in a municipality where candidates under 40 enter the race can expect to see not only a greater total amount of candidate activity on Twitter but also a greater relative amount of candidate tweets that interact with others.

[16]Pew Research, May 18, 2020.

Table 5.3: Candidates Tweet More About Welfare Issues Important to Their Age Group

	Child Welfare (% of tweets)		Elderly Welfare (% of tweets)	
	(1)	(2)	(3)	(4)
Age	-0.001^{***}		0.0003^{***}	
	(0.0002)		(0.0001)	
Under 40 Years Old		0.018^{**}		-0.009^{**}
		(0.008)		(0.004)
40–49 Years Old		0.010^{*}		-0.008^{**}
		(0.005)		(0.004)
60–69 Years Old		-0.006		-0.003
		(0.006)		(0.004)
70 Years Old and Over		-0.020		-0.009
		(0.017)		(0.007)
Female	0.033^{***}	0.033^{***}	0.007^{**}	0.007^{**}
	(0.007)	(0.007)	(0.003)	(0.003)
Incumbent	0.011^{**}	0.010^{**}	-0.0004	-0.0003
	(0.005)	(0.005)	(0.004)	(0.004)
Mayoral Election	-0.003	-0.003	-0.007	-0.007
	(0.010)	(0.010)	(0.008)	(0.008)
Observations	5,789	5,789	5,789	5,789
Municipality Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
R^2	0.363	0.364	0.277	0.279

Notes: Baseline age group is candidates between 50–59 years old. Standard errors clustered by candidate and municipality are shown in parentheses.

5.4.2 Age and Twitter Content

Younger candidates are more likely to be active and engaged on Twitter, but does the content of tweets vary by a candidate's age? For instance, are candidates more likely to emphasize welfare issues that target members of their age group? Do younger candidates tweet more about long-term welfare policies, and older candidates more about short-term policies?

The results from the first SVM analysis for child and elderly welfare are shown in Table 5.3. Before estimating the linear regression models, I first aggregate the classified tweets up to the level of the individual candidate. Thus, each model's dependent variable is the percentage of

that candidate's tweets during the three months leading up to the election classified as discussing child or elderly welfare, respectively. As with Table 5.2, I show only the fully specified models in the main text with controls for sex, incumbency status, election type, and municipality and year fixed effects.

Table 5.3 offers support for the hypothesis that a candidate's age affects the welfare policies they emphasize in their campaign (H3). Across Models 1–4, I find that a candidate's age is negatively correlated with their likelihood of tweeting about child welfare, but positively correlated with tweets about elderly welfare. Candidates in their 20s and 30s devoted two percentage points more of their tweets to discussing welfare policies that targeted younger families, and one percentage point less to welfare policies for the elderly. While the effect sizes may appear small, they are substantively meaningful relative to the percentage of total tweets typically dedicated to child (5.5%) and elderly (2.5%) welfare. Looking at the raw data of tweets from the 5,789 candidates, I find that the average candidate under 40 dedicated 6.7% of their campaign tweets to child welfare, more than double that of the typical candidate 70 and over (3.3%). In comparison, the average candidate in their 70s and 80s was 1.5 times more likely to tweet about elderly welfare (3.0%) than a candidate in their 20s and 30s (2.0%).

The results for the time orientation of a politician's tweets about welfare, shown in Table 5.4, are also in line with my expectations (H4). Following the same organization as Table 5.3, I find that older candidates are more likely to tweet about short-term welfare benefits, whereas younger candidates tweet more often about long-term welfare policies. The estimates in Models 1 and 3 suggest that for every 10 years of a candidate's age, candidates spend one percentage point more of their tweets on the short term and 0.4 percentage points less in the long term. Compared to candidates in their 50s, Models 2 and 4 likewise show that a candidate in their 20s or 30s is 1.1 percentage points less likely to focus on immediate welfare needs, and 0.7 percentage points more likely to discuss future-oriented policies. Turning again to the full sample of over 500,000 tweets, I find that 8.7% of tweets from candidates 70 and over spoke about welfare policies for the short

Table 5.4: Younger Candidates Tweet More About Long-Term Welfare Policies

	Short-Term Welfare (% of tweets)		Long-Term Welfare (% of tweets)	
	(1)	(2)	(3)	(4)
Age	0.001***		−0.0004***	
	(0.0003)		(0.0001)	
Under 40 Years Old		−0.011**		0.007**
		(0.005)		(0.003)
40–49 Years Old		−0.005		0.001
		(0.007)		(0.004)
60–69 Years Old		0.014		−0.007**
		(0.010)		(0.003)
70 Years Old and Over		0.043		−0.009
		(0.046)		(0.009)
Female	0.012**	0.012**	0.001	0.001
	(0.006)	(0.006)	(0.003)	(0.003)
Incumbent	0.001	0.003	−0.002	−0.003
	(0.005)	(0.005)	(0.003)	(0.003)
Mayoral Election	−0.008	−0.006	0.012**	0.011**
	(0.009)	(0.009)	(0.005)	(0.005)
Observations	5,789	5,789	5,789	5,789
Municipality Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
R^2	0.264	0.264	0.525	0.525

Notes: Baseline age group is candidates between 50–59 years old. Standard errors clustered by candidate and municipality are shown in parentheses.

term, twice that of candidates under 40 (4.1%). The results for long-term welfare, by contrast, estimate that 3.1% of the tweets sent by candidates in their 20s and 30s addressed long-term welfare issues, compared to 2.4% from candidates in their 70s and 80s.

In sum, the findings from this section indicate that the age of a candidate has a significant impact on how they discuss age-related welfare policies on the campaign trail. While the generalizability of these findings will be addressed in the next section, another perspective is that Twitter represents a challenging case for the theory. After all, if Twitter users are younger than the average age of the electorate, and municipal candidates can choose to have a Twitter account, then we might expect all candidates to similarly tweet about policies that concern younger people,

such as welfare for younger families and discussions of the long-term sustainability of the welfare system. However, even in this context, I find that a candidate's age makes a substantial difference in their style of Twitter use and the content of the policy messages that they convey to their supporters.

5.5 Evidence from Candidate Surveys

Thus far, the findings indicate that younger and older municipal candidates communicate different policy priorities to voters over Twitter in campaigns. Younger candidates are more likely to tweet about child welfare and longer-term welfare policies than older candidates, but less likely to emphasize elderly welfare and the short term. While Twitter represents an important, new form of political communication, one concern is that we do not know whether the patterns observed on Twitter generalize to offline campaign behavior. Similarly, we might wonder whether the findings in Twitter patterns are limited to municipal elections, or whether age-based differences among candidates can also be observed in national-level political competition, where party influence is much stronger.

To address these concerns, I use the Asahi Todai Elite Survey (ATES), a joint study undertaken by Tokyo University, Japan's leading university, and the *Asahi Shimbun*, one of Japan's leading newspapers. The ATES is unfortunately not available for local elections, but it has been administered to both candidates and a representative sample of voters in elections for the House of Representatives (HOR) since 2003.[17] In the analyses in this chapter, I focus on surveys for the last three HOR elections held in 2012, 2014, and 2017.[18]

The ATES has several advantages over other data for measuring what issues are important to candidates. The first is that the ATES is administered to every candidate—more than 1,300 candidates per election, on average—and has an astonishingly high response rate of 93.4%, 95.0%,

[17] Data is also available for House of Councillors elections since 2004.

[18] I focus on these three because the key questions concerning welfare are phrased the same way across surveys.

and 96.6% for the 2012, 2014, and 2017 surveys, respectively. This high response rate is due in part to the prestige of the two organizations behind the survey and the fact that the results are published in the *Asahi Shimbun* before the election. Japan has the highest newspaper penetration rate in the world, and the *Asahi Shumbun* is the second most circulated newspaper (7 million) in the world after the *Yomiuri Shimbun* (9 million), another Japanese paper.[19] Many voters learn about candidates in the newspaper, and thus candidates are thought to pay careful attention to how they answer the ATES.

A second benefit is that the ATES asks the same policy questions to both candidates and voters at the election.[20] The response rates for the public opinion surveys are lower than those for candidates but are still high compared to other public opinion surveys at 63.3% (2012), 60.4% (2014), and 59.2% (2017). Nearly all respondents answer each question as well, which means that there is little missing data across respondents.[21]

Third, the ATES provides a simple, standardized measure for comparing policies and positions across candidates and over time, giving it an advantage over either roll-call voting records or independent candidate manifestos. Roll-call voting records, popular in U.S. analyses, are limited to incumbents and may be difficult to compare across terms because of the different legislation under consideration. In Japan, roll-call votes are rarely taken, apart from the election of a new prime minister or when passing the annual budget, and the records of individual politician's votes are not recorded.[22] A second possibility could be to draw on the individual manifestos created by candidates, as used by Catalinac (2016). While these manifestos are useful as a measure of issue salience across candidates, we cannot test how all candidates would respond to

[19] WAN-IFRA, "World Press Trends 2016," 2016, p.8.

[20] The ATES is administered to voters after the election is over, whereas candidates answer the ATES before the election.

[21] Of the 5,491 respondents who took the survey across these three waves, 5,447 (99.2%) answered all of the questions needed for my analysis.

[22] While the Speaker of the House can call for a roll-call vote, in practice such votes are not used even for major pieces of legislation such as the passage of the electoral reform bill in 1993 (Curtis 1999, 74). Instead, the assumption is that Diet members will organize themselves into parliamentary causes, typically by party, and decide on their position on the bill before the vote. Party discipline is very high in Japan, and rebels are rare (Taniguchi 2006).

the same question about a specific policy issue or compare candidates' answers with those given by voters, as we can with the ATES.

Finally, the ATES is useful for my purposes because the three most recent editions (2012, 2014, and 2017) include questions about social welfare, and the 2017 version of the survey even includes a specific question about views on long-term trade-offs concerning welfare. Focusing first on the question common to all three surveys, the ATES asks candidates and voters to choose their top three policy priorities for the legislature in the next parliamentary session from a list of 15 policy areas. The list represents a wide range of issues, from social welfare to foreign policy, economic policy, agriculture, environment, administrative reform, decentralization, protection/revision of the constitution, nuclear power, and natural disaster prevention. Candidates and voters can also select "other policy," although less than 5% do so.

Among the 15 topics, I focus on candidates and voters who listed either "Education and Childcare" or "Pensions and Healthcare" as one of their top three policy areas, as these are the closest to the child and elderly welfare topics discussed on Twitter. I estimate each topic separately using linear regression models, coding the dependent variable as equal to 1 if a candidate or voter listed the respective issue in their top three, and 0 otherwise. For space reasons, I again focus only on the fully specified models that include controls for sex, incumbency status (for candidates), party affiliation (with dummies for the Liberal Democratic Party and Komeito, the two parties in the ruling coalition since 2012), and district and year fixed effects.[23]

The results in Table 5.5 provide further support for the findings from municipal candidate campaign messages on Twitter. Looking first at *Education and Childcare* (Models 1–3), I find that younger candidates and voters are both significantly more likely to list the issue as a government priority.[24] Candidates and voters in their 20s and 30s are 5.4 and 7.7 percentage points more likely to include the issue as one of their top three policy priorities, respectively, compared to

[23]While party affiliation is official for candidates, for voters, this variable represents the party that voters said that they supported in the proportional representation tier of the election.

[24]The ATES does not list the specific age of voters who answered their survey. Instead, voters choose their age from a list of options divided into ten-year intervals (e.g., 20s, 30s, 40s).

Table 5.5: Candidates and Voters Prefer Welfare Policies That Benefit Their Age Group

	Education and Childcare			Pensions and Healthcare		
	Candidates		Voters	Candidates		Voters
	(1)	(2)	(3)	(4)	(5)	(6)
Age	−0.003***			0.002**		
	(0.001)			(0.001)		
Under 40 Years Old		0.054**	0.077***		−0.066**	−0.252***
		(0.022)	(0.015)		(0.027)	(0.019)
40–49 Years Old		0.047**	0.007		0.014	−0.153***
		(0.024)	(0.016)		(0.021)	(0.021)
60–69 Years Old		−0.032	−0.035**		0.011	0.033
		(0.020)	(0.016)		(0.022)	(0.020)
70 Years Old and Over		−0.059*	−0.071***		0.001	0.092***
		(0.035)	(0.024)		(0.039)	(0.032)
Female	0.154***	0.155***	0.073***	0.007	0.008	0.045***
	(0.024)	(0.025)	(0.011)	(0.021)	(0.021)	(0.012)
Incumbent	0.012	0.011		0.006	0.004	
	(0.032)	(0.032)		(0.032)	(0.033)	
Liberal Democratic Party	0.102**	0.102**	0.117***	0.002	0.002	0.157***
	(0.040)	(0.040)	(0.015)	(0.035)	(0.035)	(0.015)
Komeito	0.194***	0.192***	0.152***	0.085***	0.084***	0.206***
	(0.022)	(0.022)	(0.022)	(0.020)	(0.020)	(0.025)
Observations	3,875	3,875	5,447	3,875	3,875	5,447
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.232	0.233	0.110	0.117	0.118	0.160

Notes: Baseline age group is candidates and voters between 50–59 years old. Standard errors clustered by district (and candidate) are shown in parentheses. While party affiliation is official for candidates, for voters this variable represents the party that voters said that they supported in the proportional representation tier of the election. Source: Asahi-Todai Elite Surveys of Candidates and Voters, 2012, 2014, 2017.

candidates and voters in their 50s. By comparison, we can see the opposite is true for candidates and voters 70 and over, who are 5.9 and 7.1 percentage points less likely to respond that the government should focus on education and childcare compared to middle-aged candidates.

For *Pensions and Healthcare* (Models 4–6), the age patterns are just the opposite. Older respondents are more likely to view pensions and healthcare as a priority relative to younger respondents, although here, the effects are much stronger among voters than candidates. Candidates under 40 years old are 6.6 percentage points less likely to list the issue than middle-aged

candidates, but otherwise, there are no significant differences among the other age groups. By comparison, the effects for voters are several times stronger: voters in their 20s and 30s were over 25 percentage points less likely to list the issue than voters in their 50s, whereas voters in their 70s and 80s are nine percentage points more likely than middle-aged voters to include pensions and healthcare among their top three priorities. In other words, candidates appear to track the opinions of the public much more closely when it comes to childcare issues than they do with elderly welfare, as the gaps in opinion between the two groups are much smaller for the former than the latter.

As with the Twitter analyses, all of these results hold even when controlling for a candidate's sex, incumbency status, and time-invariant factors specific to a given HOR district or election year. Thus, I find that a national candidate's age can substantially affect their age-related welfare priorities to the extent that they are willing to share these positions with their constituents via the widely read *Asahi Shimbun*.

In terms of characteristics apart from age, I also find that female candidates and voters for the HOR are substantially more likely to emphasize education and childcare, as suggested by past research. Incumbency status does not appear to matter, but membership in or support for the ruling coalition matters for both candidates and voters. LDP candidates and voters were more likely to support education and childcare, though only voters for the LDP were significantly more likely to emphasize pensions and healthcare. By comparison, the effects are much stronger among candidates and supporters of the LDP's junior coalition partner, Komeito, which makes sense given the party's focus on social welfare policies (Hasunuma and Klein 2014).

Apart from the question about overall policy priorities, the 2017 edition of the ATES also includes a question that discusses the trade-offs between short- and long-term welfare priorities. More specifically, the question asked both candidates and voters whether they supported reducing current government benefits for pensions and healthcare to improve Japan's long-term economic management.

Table 5.6: Younger Candidates and Voters Favor Longer-Term Welfare Policies

	Reduce Pensions and Healthcare for Long-Term Economic Management		
	Candidates		Voters
	(1)	(2)	(3)
Age	-0.005^{***}		
	(0.001)		
Under 40 Years Old		0.115^{**}	0.073^{**}
		(0.051)	(0.029)
40–49 Years Old		0.028	0.019
		(0.038)	(0.029)
60–69 Years Old		-0.062^{**}	-0.045^{*}
		(0.029)	(0.024)
70 Years Old and Over		-0.039	-0.017
		(0.053)	(0.026)
Female	-0.052^{*}	-0.052^{*}	-0.062^{***}
	(0.030)	(0.030)	(0.017)
Incumbent	0.047	0.043	
	(0.047)	(0.047)	
Liberal Democratic Party	-0.069	-0.070	0.026
	(0.047)	(0.048)	(0.021)
Komeito	-0.221^{***}	-0.216^{***}	-0.013
	(0.026)	(0.026)	(0.038)
Observations	1,121	1,121	1,702
District Fixed Effects	Yes	Yes	Yes
R^2	0.223	0.220	0.160

Notes: Baseline age group is candidates between 50–59 years old. Standard errors clustered by district are shown in parentheses. Source: Asahi-Todai Elite Survey of Candidates and Voters, 2017.

Table 5.6 shows the results for this survey question. As with Table 5.5, I find large differences by age among both candidates and voters. Candidates and voters under 40 were the most supportive of the proposition: Models 2 and 3 find that they are 11.5 and 7.3 percentage points more likely to support the reduction in benefits for the elderly than candidates and voters in their 50s. The most opposed group, by comparison, is not the oldest group, but instead the second oldest. Candidates and voters in their 60s were 6.2 and 4.5 percentage points less likely than those in their 50s to respond that benefits should be reduced to benefit the long-term economy. These results make sense given that individuals in their 60s are those on the cusp of retirement

and thus risk the most by having their benefits reduced by this policy in the near term.

The findings from the ATES thus suggest that the age effects found in Twitter communication in municipal elections do generalize to national-level elections for the HOR. Whether it is elections for municipal assembly, mayor, or the HOR, a candidate's age is a significant predictor of the stance they will take in their campaign on how welfare resources should be allocated between age groups and over time.

5.6 Discussion

Age affects both the political communication and welfare policies of candidates. In the first half of the chapter, I find that younger municipal candidates are more likely to have Twitter accounts, tweet more frequently during their campaigns, and interact with others on the platform more often than older candidates. Within their tweets about welfare, I further show that younger candidates tweet more about policies for younger families and the long term, and older candidates tweet more about policies supporting the elderly and the short term.

In the second half of the chapter, I use the ATES to demonstrate that the influence of a candidate's age is also visible among national candidates for the HOR. When asked what the top priority for the government should be in the next parliamentary session, both candidates and voters under 40 were substantially more likely to say "education and childcare" compared to older age groups, who instead said that "pensions and healthcare" should be the government's focus. Likewise, when asked whether the government should reduce current benefits for the elderly to improve the economy's health for future generations, younger voters and candidates were more supportive of the proposal than older individuals.

The evidence from Twitter and an elite survey thus suggest that the inferences made by Japanese voters in Chapter 4 are accurate. When respondents in the survey experiment were randomly assigned to view either a younger or older-looking hypothetical candidate photo, they

assumed that a candidate's age would affect their policy agenda. In this chapter, I provide evidence that voters' two strongest informational shortcuts are supported by actual candidate behavior in municipal and national elections. A candidate's age affects their age-related welfare priorities and the time orientation of their decision-making.

More generally, I show that age matters for both the campaign behavior and policy preferences of candidates. In doing so, I add to a growing literature on how candidates' ascriptive characteristics can influence their behavior, both offline and online. Studies of female candidates in the United States, for example, have long shown that gender influences campaign behavior (see Lawless 2015 for a review). More recently, other work has shown that women candidates are also more likely to be active on Twitter and tweet more about so-called "women's issues" such as health, welfare, and education (Evans and Clark 2016; Wagner, Gainous and Holman 2017). In this chapter, I similarly document how age affects a candidate's campaign style and substance both online and offline. Younger candidates in municipal races are more likely to use Twitter, and they also use it to interact with others more and communicate different agendas concerning child welfare and long-term policies.

While the results from this chapter suggest that Twitter can be a useful medium for analyzing candidate behavior, one potentially worrying finding is that voters do not frequently engage with politicians on the platform, at least not publicly. Future research could explore whether candidates receive more engagement depending on the substance of their tweets, such as whether they are discussing policy issues as opposed to purely broadcasting their activities. Also, this chapter discusses the overall effect of a candidate's age on campaign behavior but does not explore how this effect may be moderated by various contextual factors such as the level of competition, district magnitude, or demographic characteristics of the candidate's district that might affect welfare attitudes. Studies should also explore how age might interact with other identities such as gender on Twitter and through other forms of communication.

Lastly, while this chapter seeks to establish a connection between a candidate's age and

their policy priorities, it is important to keep in mind that politicians in their 20s and 30s are numerically under-represented in nearly every Japanese political institution. Particularly within municipal and national legislatures, even if younger candidates win, they are unlikely to be in a position to exert much influence over policy because of strong seniority norms. As documented in Chapters 1 and 3, the vast majority of assembly representatives are in their 50s and 60s. Within the national cabinet, only Shinjiro Koizumi is under 40 years old, as the other 19 members are evenly split between MPs in their 50s, 60s, and 70s. Nearly all of the politicians in key decision-making positions across Japan—from the municipal to the national level—come from an age group that is more likely to say that the government's priorities should be to focus on welfare benefits for the elderly and shorter term.

Of the three elected offices discussed in this chapter—municipal assembly, mayor, and national assembly—only in the mayor's office are younger elected officials likely to have significant discretion over the government's policy direction as executives. This is what I will explore in the next chapter: When given the opportunity to govern, do younger politicians follow through on their campaign communications and implement more welfare policies that target younger families and the long term?

Chapter 6

Implementation: Age and Representation

Do younger and older politicians enact different welfare policies in office? While the age bias of political institutions may be well known, past studies have, for the most part, neglected whether the age of politicians has consequences for substantive representation or policy outcomes. This is surprising given that there are well-developed literatures on how other characteristics such as race, gender, class, and sexual orientation influence elite behavior (Butler and Broockman 2011; Chattopadhyay and Duflo 2004; Carnes 2012; Reynolds 2013). Moreover, the shortage of younger politicians across all levels of public office may be concerning for several reasons. There are many issues that disproportionately affect the young, from policies on education to those addressing unemployment, childcare, and newer technologies (Busemeyer, Goerres and Weschle 2009; Levy 2005). Younger people will also be more affected by policies that address longer-term issues such as climate change, public debt, and social welfare reform (Bidadanure 2017; Song, Storesletten and Zilibotti 2012). Without the greater presence of younger politicians in public office, the policies enacted by mostly older politicians may be detrimental to both the short- and long-term interests of younger generations.

In this chapter, I examine how the age of mayors in Japan affects the social welfare policies they enact in office. As discussed in Chapter 1, intergenerational conflict over welfare is

an especially salient issue in many advanced democracies that confront the challenges of aging populations, as shrinking workforces struggle to support rising welfare costs for growing elderly populations (Muramatsu and Akiyama 2011; Harper 2014). Japan, as the world's oldest country, is at the forefront of this demographic trend and thus provides an ideal setting in which to analyze how younger and older politicians allocate scarce resources between competing priorities for social welfare: encouraging younger people to have more children and supporting the needs of elderly retirees.

I argue that age will influence the welfare policies of mayors along two key dimensions, as first outlined in Chapter 1 (Figure 1.3). First, I theorize that a mayor's age will affect both their personal preferences and electoral incentives to increase welfare benefits that target members of their age cohort. As a result, I expect younger mayors to spend more on child welfare (relative to elderly welfare) than older mayors. Second, I hypothesize that age will affect a mayor's preferences for the allocation of welfare spending over time. Younger mayors have longer time horizons than older mayors, both as people with longer remaining lifespans and as politicians with longer remaining careers. I expect that younger mayors will therefore discount the future less and be more willing to impose short-term costs on their municipalities in exchange for long-term social returns via investment in welfare. By combining these two dimensions, my central argument is that younger mayors will invest more in child welfare than older mayors, who will instead increase present-oriented benefits for the elderly.

One reason for the relative absence of past work on age may be that studying its effect on the political elites' behavior presents challenges for causal identification. Younger and older mayors are not randomly distributed across Japanese municipalities. Cities that elect younger mayors may differ significantly from those with older mayors in their attitudes toward the age of politicians and their policy preferences regarding social welfare (Chapter 3). To address these concerns, I use a regression discontinuity design (RDD) in the context of close elections between younger and older candidates for mayor. In these races, cities that narrowly elect the younger

candidate should on average be similar to those that narrowly elect the older candidate. This allows me to estimate the causal effect of a city electing a younger mayor (over an older mayor) on social welfare outcomes while holding city characteristics constant.

Focusing on mayors instead of other elected officials offers further advantages for measuring the relationship between the age of politicians and welfare policy (Chapters 1 and 3). While most studies of social welfare in Japan and other advanced democracies focus on national politics (e.g., Lynch 2006; Estevez-Abe 2008), it is typically local political actors that take the primary role in administering welfare programs to citizens. Mayors also have executive powers that can help them translate their policy preferences into the allocation of resources for welfare. Legislators, by comparison, have to work with other representatives and often the executive to enact legislation. This makes it difficult to estimate the impact that a single additional younger or older legislator has on social welfare policy.

Another challenge for identification has been the lack of data. While the Japanese government publishes detailed data on municipal expenditures, until the creation of JMED, there has been no publicly available dataset on mayoral candidates or election outcomes. Using data from JMED, I focus on the 13,341 mayoral candidates that competed in 6,888 elections between 2004 and 2019.[1] For the subset of close elections between younger and older candidates in the RDD, I further collect information on each candidate's educational background, family structure, level of party support, and prior political and professional experience. I then supplement the findings from this new dataset by drawing on the interviews that I conducted with 15 mayors and 20 municipal bureaucrats working inside social welfare departments.

I find that the election of a younger mayor leads municipalities to change the age orientation of their welfare expenditures. Younger mayors increase discretionary spending on child welfare by more than 30% and more than double their municipality's prior investment in child welfare. In doing so, younger mayors do not defund programs for elderly welfare, but instead,

[1] I choose not to use elections before 2004 because of concerns about missing data.

raise money by issuing municipal bonds. Older mayors thus do not redistribute more welfare benefits overall to older residents, but they do change the temporal dimension to these benefits by decreasing long-term investment in favor of present-oriented benefits. Additional analyses suggest that responsiveness to the age demographics of the municipality may be an important mechanism. The effects of electing younger and older mayors on welfare spending are concentrated in younger and older municipalities, respectively, suggesting mayors are more likely to represent issues important to their age group when the size of that group is relatively larger. By contrast, there is less evidence of political selection or personal experience with welfare as explanatory factors. Robustness checks further show that these results are not driven by incumbency effects, municipality size, municipal mergers, or national policy changes.

Overall, the findings provide evidence that age matters for representation and policy outcomes. While existing studies on the age orientation of welfare programs emphasize the role of electoral systems, I find that even under a majoritarian system, the age of politicians can make a substantial difference in the well-being of citizens, especially those at the child-rearing life stage. The results further suggest that the greater presence of younger politicians in public office can increase the substantive representation of younger people's interests. The descriptive representation of young adults may be especially important in aging societies such as Japan, as elected officials may otherwise choose to ignore younger citizens to focus their energies on older constituents who are more numerous, wealthier, and vote at much higher rates. Finally, the finding that age affects politicians' time horizons may offer insights into how elites of different ages make decisions on other long-term issues such as climate change that will disproportionately affect younger generations.

6.1 The Age and Time Orientation of Social Welfare

Why do some governments devote most of their welfare resources toward protecting the elderly, whereas others do more to support younger families? How do governments decide between minimizing taxes and maximizing welfare benefits in the present, on the one hand, and increasing future economic growth and the long-term sustainability of the welfare system on the other? Classic studies in comparative political economy on the variation in form and function of welfare states have pointed to a wide range of factors such as modernization, familialism, religion, corporatism, and the relative political power of actors such as social democratic parties, unions, and employers (Myles 1989; Vans Kersbergen 1995; Esping-Andersen 1990; Orloff 1993; Pierson 1994). However, two more recent accounts have focused on disentangling how the orientation of welfare spending differs significantly across countries on two dimensions: by age group and over time (Lynch 2006; Jacobs 2011).

Both of these studies focus on cross-national variation, and stress the role of historical development and political institutions rather than the age of politicians. In her seminal study, Lynch (2006) notes the dramatic differences in how some countries spend significantly more on benefits for the elderly such as pensions and nursing services, whereas others provide more generous spending on benefits for young people such as education and childcare. She argues that these patterns cannot be explained by the relative power of elderly voters or the classic typologies of welfare states. Instead, Lynch's argument hinges on two elements. The first is whether states adopted citizenship-based or occupational welfare regimes in the early 1990s. Countries such as Sweden and Denmark that adopted citizenship-based regimes also implemented welfare policies to cover labor market "outsiders," such as mothers and children, and became more youth-oriented. By contrast, countries with occupationalist regimes tended to target labor market "insiders," protecting workers as they moved into retirement and thus became more elderly-oriented. Within occupational systems, Lynch points to a second historical turning point

in the nature of political competition that emerged after World War II. In countries with more particularistic competition, such as the United States and Japan, politicians faced strong incentives to target welfare benefits at specific groups of workers in return for electoral support, which exacerbated the elderly-youth divide. In countries with more programmatic competition, such as France and Germany, governments instead struck a middle ground by introducing some broader, universal programs for families and the young.

The literature on welfare in Japan has also tended to stress the role of political institutions, especially the electoral system. For example, Estevez-Abe (2008) similarly credits the particularistic nature of political competition, encouraged by the electoral system, as determining the direction of Japan's welfare policies. While Estevez-Abe's primary focus is not on age-based distinctions, she notes that Japan has very generous universal policies that benefit the elderly, such as pensions and health care, similar to Nordic countries. On the other hand, she notes that Japan has traditionally provided only meager benefits for children and families. Estevez-Abe argues that the government has instead substituted for this meager spending with "functional equivalents": public works, subsidies, market-restricting regulations, and employment laws to protect the livelihood of citizens. Thus, the government has preferred to target policies at workers (labor market insiders) compared to younger families and children (labor market outsiders). When Japan reformed the electoral system in 1994 (Chapter 3), some observers expected more programmatic competition to follow and with it the introduction of more universal programs. While this has happened to an extent, such as increases in family allowances, benefits for families and the young remain low compared to other advanced democracies (Estevez-Abe 2008; Boling 2015). As noted in Chapter 1, Lynch (2006) finds that Japan's welfare system is the most biased toward the elderly in her study of 20 OECD countries, even accounting for population demographics.

Existing work on the time dimension to social welfare has similarly tended to point to institutional and electoral factors rather than individual characteristics of politicians such as their age. In his novel work on the subject, Jacobs (2011) makes the critical observation that decisions

made by politicians on welfare involve not only the question of *who gets what*, but also the timing decision of *when*. Welfare spending can be allocated toward the present, such as by taking tax revenues and redistributing all of the benefits immediately to different groups. Subsidies, for example, can function in this regard either by directly providing payouts to the public or by giving money to firms so that they can reduce the costs of their goods and services. Alternatively, welfare resources can be allocated toward the future, such as by instead investing a portion of tax revenues in the creation of infrastructure. These investments often come with a short-term cost to the public, but they potentially have a larger payoff in the future.

As one example, Jacob's (2011) study focuses on pension systems. He notes that countries differ in whether their welfare systems are pay-as-you-go or funded. In countries such as Japan with pay-as-you-go welfare systems, the premiums that current workers pay are used to finance the benefits for people in retirement immediately. In contrast, under a funded pension system, the premiums that workers pay are instead set aside, and individuals receive those benefits, including investment gains when they retire. Thus, Jacobs notes the trade-offs for policymakers in choosing between a present-oriented system that maximizes current benefits (pay-as-you-go) compared to a future-oriented system with possibly larger payoffs and sustainability in the future (funded). His ultimate argument is that politicians naturally trend toward emphasizing the short-term because of reelection considerations, and can only be encouraged to focus on the long term if institutions guarantee electoral safety, capacity, and long-term expected returns. While Jacobs does not refer to Japan, as evidence, he discusses the United States as an example of a funded system compared to the United Kingdom, which developed a pay-as-you-go system.

Jacobs' work on social welfare thus builds on a much broader literature, discussed in Chapter 1, that suggests that politicians tend toward short-termism in the absence of political institutions that encourage longer-term thinking (Dal Bó and Rossi 2011; Kousser 2010; Olson 1993; Simmons 2016; Titiunik 2016; Jacobs 2011). While these studies do not consider the age of politicians, the implication from their findings is that older politicians may be more long-term

oriented because they are more likely to be in a position where institutional characteristics such as seniority systems and safe seats protect them enough to think about the long term. In the Japanese context, for example, Naoi (2015) finds that senior LDP leaders are more willing to engage in long-term trade policy, whereas Kato (1994) has suggested that senior bureaucrats implement more long-term policies because of their protections from the LDP.

The direct link between the age of politicians and the redistribution or timing of welfare, by contrast, has mostly been ignored, with two recent exceptions. The first is Curry and Haydon (2018), who provide evidence that older members of Congress are more likely to sponsor bills important to seniors than younger members, although this relationship only holds for low-salience legislation. For high-salience issues, the determining factor is instead the age distribution of a member's district. In the second, Alesina, Cassidy and Troiano (2019) find that younger mayors in Italy are more likely to engage in political business cycles than older mayors. The authors do not consider welfare or redistribution between age groups, but instead, look at total expenditures and suggest that younger politicians are more short-term oriented because they are more likely to run for reelection than older mayors. However, neither study looks at both the redistribution and timing dimensions to welfare together or examines the link between the under-representation of younger adults in political institutions and policy outcomes for society.

This is the first study to systematically analyze how a politician's age affects the welfare policies they enact in office. Existing studies can explain why countries such as Japan have a welfare system that is more elderly-oriented, or for its pay-as-you-go pensions system. However, as this study will show, they cannot explain substantial variation across municipalities within Japan in both the type and amount of welfare services. These municipalities share similar institutions, yet exhibit vast differences in the level of care and protection they provide their citizens along both age and time dimensions. Controlling for institutions and electoral conditions, I argue that the age of politicians can help us better understand this variation.

6.2 How the Age of Politicians Affects their Welfare Policies

The theoretical discussion in Chapter 1 (Figure 1.3) lays out my reasoning for how a politician's age will affect a politician's welfare preferences along two key dimensions: between age groups and over time.

My initial expectations for this chapter are thus relatively straightforward. First, I argue that a politician's age will shape their behavior concerning the redistribution of welfare spending between age groups. Therefore, I expect that younger politicians will advocate spending more on younger families, whereas older politicians will favor spending on the elderly.

> **H1**: Younger politicians will redistribute more welfare spending toward younger families than older politicians.
> **H2:** Older politicians will redistribute more welfare spending toward the elderly than younger politicians.

For the second dimension, I expect that younger politicians with longer time horizons will shift relatively more welfare resources toward the future. In contrast, older politicians with shorter time horizons will promote more present-oriented welfare benefits.

> **H3**: Younger politicians will transfer more welfare spending toward the future than older politicians.
> **H4** Older politicians will transfer more welfare spending toward the present than younger politicians.

Thus, the cumulative effect of these two dimensions is that I expect younger representatives will implement policies that increase future-oriented spending for younger families, and older representatives will increase spending on present-oriented benefits for the elderly.

6.2.1 Mechanisms

In addition to testing these overall effects, in the second part of the chapter I investigate two potential mechanisms at work. The first is personal experience with welfare. As will be discussed in subsequent sections, analyzing the effect of personal experience with elderly welfare

is challenging in the Japanese context because pensions, healthcare, and elderly welfare policies are universal, and everyone of a certain age has access to them. In contrast, child welfare benefits are not available to *all* younger adults, but rather only those who are the parents of younger children.

Therefore, one possibility is that personal experience as a parent can increase the salience of child welfare for younger politicians. While elected officials, as political elites, may be insulated from some of the problems facing the public, studies in other contexts have found that the experience of having children can change elite perspectives on child-related policy issues (Burden 2007; Washington 2008). In Japan, there is similar evidence that elected officials are affected by the struggle to balance work with family and raising children.[2] If personal experience is a major driver of a younger politician's social welfare policies, then we should expect younger mayors with children to be more likely to increase future-oriented spending for younger families.

> **H5** Younger politicians with children will spend more on future-oriented child welfare than younger politicians without children.

The second potential mechanism is responsiveness to voters of a similar age. Even if a politician does not have personal experience with welfare policies, they may be more attuned to the welfare needs of similarly aged voters. Elected officials often build support groups with subsets of their constituency with whom they share a certain affinity, such as a shared social identity (Fenno 1978). Whether they have direct personal experience or not, politicians may be more likely to have friends and peers who face welfare challenges important to their age group, which could give them an informational advantage in tackling these issues. For example, younger politicians may be more familiar with difficulties such as the availability of daycare centers, rising education expenses, or limited parental leave. In contrast, older politicians are likely more knowledgeable about the challenges that come with transitioning to retirement, quality of elderly care centers, or availability of social security benefits.

[2] See for example "Female Lawmakers In Japan Still Disparaged Over Pregnancy, Maternity Leave," *The Mainichi Shimbun*, July 28, 2017, and Philip Brasor, "Shinjiro Koizumi's Paternity Leave Raises a Few Eyebrows," *The Japan Times*, February 1, 2020.

Politicians may be more likely to pursue these issues because of these informational advantages, via their social groups, or because they feel they have a comparative advantage in reaching out to similarly aged voters. Particularly when two candidates of very different ages face off against one another in an election, a candidate's age may give them a strategic edge in making credible appeals to similarly-aged voters on age-salient issues. As discussed in Chapter 4, we saw evidence that voters in Japan use age as a heuristic in elections to infer the social welfare policies that a mayor is likely to emphasize in office. If responsiveness to voters of a similar age is important, then I expect politicians to spend more in line with their distributional and temporal preferences when there are relatively more voters from their age group in the municipality.

> **H6** Younger politicians will spend more on future-oriented child welfare in younger municipalities compared to older municipalities.
> **H7** Older politicians will spend more on present-oriented elderly welfare in older municipalities compared to younger municipalities.

6.3 Research Design

6.3.1 Japanese Mayors

As discussed in Chapter 1, municipalities in Japan offer an ideal setting to test how the age of elected officials affects their social welfare policies for several reasons. First, thanks to the country's declining birthrate, rapid aging, and shrinking population, municipal spending on social welfare is one of the most pressing issues in Japanese politics. Especially for many towns and villages, struggling to pay for growing elderly communities with decreasing tax revenues from a declining number of younger workers can pose an existential crisis. Second, as noted in Chapter 3, municipalities are numerous (1,741) and vary widely in population demographics.

Third, mayors in Japan have significant powers to implement their preferred welfare agenda. While the national government administers pensions, welfare is otherwise primarily the

domain of municipalities, which account for more than half (56%) of all welfare expenditures.[3] Unlike Japan's national government, which uses a parliamentary system, municipalities use presidential systems in which voters directly elect mayors to four-year terms, and there are no term limits. Although mayors share power in principle with municipal assemblies, in practice, they have broad authority over welfare spending (Tsuji 2017). 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.[4] Mayors are also relatively free to enact their preferred policies because parties are less involved in local compared to national politics, and nearly all mayors (99%) run as independents during elections. This makes it easier to identify the preferences of younger and older politicians without the mediating complication of party influence.[5]

This authority over the budget often puts mayors on the frontlines of responding to perceived generational inequalities in social welfare. Many young people complain that welfare benefits are too focused on the elderly, at the expense of spending on younger families, and on addressing short-term needs at the expense of longer-term investment. Within spending on child welfare, past governments have typically focused on either increasing the benefits of the childcare allowance system—which gives a monthly stipend per child to parents—or creating subsidies that reduce the costs of childcare centers. These efforts, coupled with the greater participation of women in the workforce, have greatly driven up the demand for publicly provided childcare, yet municipalities have lagged in investing the necessary resources to build more daycare centers. As a result, long waitlists for public daycare have become a major policy issue. The Japanese government estimates that about 30,000 children are on waitlists for daycare, although this number does not include parents who have given up waiting. The actual waiting list including all those

[3]Compared to 30% from the central government and 14% from prefectures. Ministry of Internal Affairs and Communications, "White Paper on Local Public Finances," 2018.

[4]Council of Local Authorities for International Relations, "Local Government in Japan," 2008.

[5]Japan's unitary government structure also means that mayors have largely similar powers across the country, except for core cities (population greater than 200,000) or designated cities (population greater than 500,000), as discussed in Chapter 3.

children, according to some estimates, is between 600,000 and 850,000.[6]

As younger citizens have started to demand more benefits, we can now see several examples of younger mayors responding by promoting welfare policies that increase investment in children. For instance, when Shuhei Azuma, 28, managed to defeat a 61-year-old incumbent in Shijonawate to become the younger 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, 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. Finally, Naomi Koshi, 37, as mayor of Otsu, has 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.

6.3.2 Municipal Social Welfare

To study the effect of younger and older mayors on social welfare policy, I use data from the annual Local Public Finance datasets published by the Ministry of Internal Affairs and Communications.[7] These datasets provide a detailed accounting of expenditures for municipal governments. I adjust all monetary figures into 2015 yen based on the consumer price index. I then merge this data with demographic information from population censuses.[8] In my main analyses, I use per capita expenditures to account for population differences across municipalities.

Public welfare is the largest expenditures category of municipal budgets (35%), followed by general administration (12%), civil engineering (12%), and education (10%). Municipal expenditures on welfare have generally increased over the past ten years, while spending on civil

[6]Minami Funakoshi, "Japan Cries Out for Daycare," *The Wall Street Journal*, Apr. 7, 2013.

[7]Ministry of Internal Affairs and Communications, "Local Public Finance Survey," 2000–2020.

[8]While the census in Japan is published every five years, the government publishes official population estimates for the intervening years.

engineering and agriculture has decreased.[9]

The Local Public Finance data have three benefits that make them ideal for my research purposes.

First, the Ministry of Internal Affairs and Communications and municipal governments keep careful track of whether spending is discretionary or non-discretionary. This distinction is important because the central government implements policies as well that establish a basic minimum level of welfare services that all municipalities must be able to provide. For example, the childcare allowance system in Japan (*jidou teate*) provides all parents of children under the age of 15 with a monthly allowance. The amount of this allowance has changed over the years, but the central government has always ensured that municipalities have enough resources to fund it. However, this allowance shows up as municipal expenditures, so it is critical not to include it in my analyses as the spending is determined by a formula based on age demographics and income levels. Thankfully, the detail in the Public Finance Data allows me to only focus on non-mandatory, discretionary welfare expenditures where the mayor has more control.[10]

Second, municipalities use discrete budget categories to account for welfare spending targeted at children compared to the elderly. 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 directly pays out pensions, but the "Elderly Welfare" category includes public expenditures on nursing services, subsidies, and facilities for the elderly. Although Japan's overall social welfare system is biased toward supporting the elderly (Lynch 2006), municipalities on average spend more per capita on child welfare than elderly welfare, although there is significant heterogeneity.[11]

Third, within discretionary spending, municipal budget reports also distinguish welfare

[9]Ministry of Internal Affairs and Communications, "White Paper on Local Public Finances," 2019.

[10]Mandatory categories of welfare expenditures include salaries for municipal government personnel, social assistance programs set by the central government such as the childcare allowance, or debt services. Mandatory expenses usually account for about half of all municipal expenditures. *Ibid.*

[11]In contrast, prefectures spend more per capita on elderly welfare than child welfare.

spending by type. Among these categories, the two largest ones are "Subsidies" and "Investment." In the case of age-related welfare, these subsidies can take the form of direct social payments to constituents or funding directed to firms to reduce the costs of providing welfare services to the public. I treat these subsidies as present-oriented spending because they comprise benefits that are actualized as soon as they are paid out. In contrast, I use the "Investment" category as my proxy for future-oriented spending. Within the context of child and elderly welfare, this investment consists almost entirely of public works spending used to construct, expand, or upgrade childcare and elderly care centers.

Municipalities do face constraints from higher tiers of government to fulfill certain services, but they still maintain significant policy discretion, and both the content and amount of services vary widely across municipalities. To reduce the possibility that a few outliers could drive my results, I focus on the natural logarithm of spending per capita, dividing spending on the elderly by the population 65 and over and spending on children by the population under 15. However, the results are substantively similar for non-logged values of welfare spending.

6.3.3 Regression Discontinuity Design

Identifying the causal effect of a mayor's age on the age and time orientation of welfare expenditures is not easily solved through typical OLS methods. As discussed in Chapter 3, and shown in Tables A.4 and A.5, municipalities where younger candidates are more likely to run for mayor differ in observable characteristics from municipalities where younger candidates are less common: they tend to be younger and more populous. Moreover, it is unlikely that OLS will be able to account for other, unobservable differences between these municipalities that affect local preferences for the age of mayors and welfare services.

To address these concerns, I use a regression discontinuity design (RDD) in the context of close elections between younger and older candidates for mayor.[12] The core assumption of this

[12]This approach is similar to past studies that used RDDs to estimate the effects of a mayoral candidate's gender

design is that in close single-member district elections, where 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 on either side of the 50% vote threshold should be largely similar in observable and unobservable characteristics, differing only in whether they receive the treatment of electing the younger mayor. In the Appendix, I conduct several placebo tests to show that municipalities on either side of the election threshold are balanced in terms of their population size, age demographics, and pre-existing social welfare infrastructure and expenditures (Tables A.6 and A.7). McCrary (2008) density tests further indicate that there is no evidence of sorting among younger and older politicians at the election threshold (Figure A.3).

To estimate the local average treatment effect of electing a younger or older mayor on welfare policy, I begin with a cutoff of 50 for a younger mayor and 70 for an older mayor. Following the age distribution of mayors shown in Chapter 4 (Figure 4.1), these cutoffs represent approximately the youngest and oldest 10% of mayoral candidates, respectively. While the cutoff for a younger mayor is older than that used in earlier chapters, this makes sense given that the candidate pool for executive offices is typically older than it is for legislative offices (as discussed in Chapter 1). Moreover, from a technical standpoint, there are too few mayors under 40 in close elections to estimate an RD effect.

In the results that follow, I thus analyze races with younger mayors separately from those with older mayors, where the reference group for both is predominantly middle-aged candidates between 50 and 70 who make up 80% of all mayoral candidates. For the RD analyses with younger mayors, I focus on close races where one of the top-two candidates is under 50, and the other is 50 or older. Likewise, for older mayors, I compare competitive elections where one candidate is 70 or older, and the other is under 70.[13] The running variables for each analysis are

(Ferreira and Gyourko 2014; Brollo and Troiano 2016), partisanship (de Benedictis-Kessner and Warshaw 2016; Gerber and Hopkins 2011), and race (Hopkins and McCabe 2012) on policy outcomes.

[13]The differences between the youngest 10% of mayors and oldest 10% of mayors is thus not causally identified because I am running the RDD on two different samples of elections.

the candidate under 50's vote margin, and the candidate 70 and over's vote margin. In the main text and Appendix, I also discuss the robustness of the results to alternative age cutoffs.

For the outcome variables, I follow the example of de Benedictis-Kessner and Warshaw (2016), who suggest differencing the dependent variable in an RDD to increase statistical efficiency. This means that I estimate treatment effects on changes in welfare spending rather than on levels. 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 younger mayor. My main analyses focus on the differences in spending on child and elderly welfare between the year leading up to the mayoral election and the second year of the mayor's term.[14]

6.4 Results

Do younger mayors implement different welfare policies than older mayors in office? This section investigates the impact of a mayor's age, first on the redistribution of welfare between age groups and then on the allocation of welfare over time.

6.4.1 Age and Redistribution

Figure 6.1 presents a graphical representation of the main RD results for races with younger candidates. Panel (a) shows the results for child welfare and panel (b) the results for elderly welfare. The y-axis in each plot is the logged per capita change in spending for each welfare category from the year before to the year after the mayoral election, and the x-axis is the candidate under 50's vote margin 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,

[14] I focus on two years later 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 (de Benedictis-Kessner and Warshaw 2016). However, I obtain similar results if I instead look at spending in year 3, year 4, or an average of years 2–4.

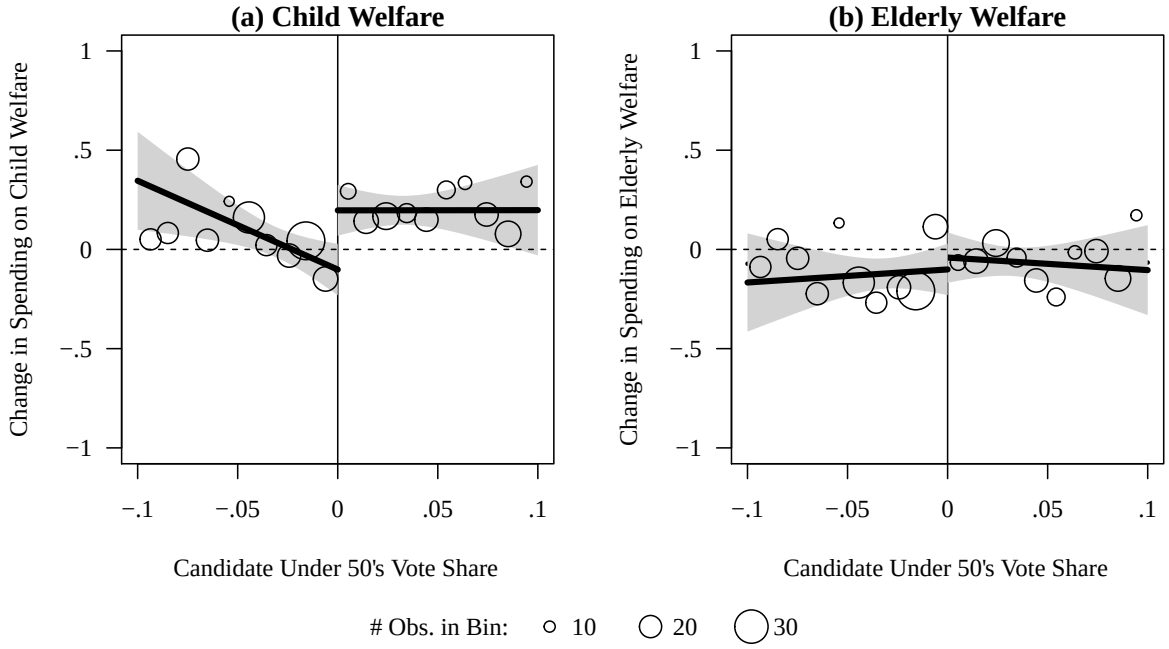


Figure 6.1: Younger Mayors Spend More on Child Welfare

Notes: RD plots show the effect of electing a mayor under 50 on the change in logged per capita spending on child and elderly welfare from the year before to the year after the election. Lines are fit using local linear regression on either side of the election threshold. Circles represent bins of the raw data.

Table 6.1: Younger Mayors Spend More on Child Welfare

DV:	Δ Child Welfare				Δ Elderly Welfare			
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	.310**	.251**	.319**	.393**	.017	.096	.095	−.058
	(.147)	(.101)	(.139)	(.195)	(.121)	(.092)	(.111)	(.146)
Bandwidth	.080	.160	.200	.200	.072	.144	.200	.200
N	320	515	575	575	287	489	575	575

Notes: RD models show the effect of electing a mayor under 50 on the change in logged per capita spending on child and elderly welfare from the year before to the year after the election. *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.

where the margin of victory is equal to zero, I fit lines using a local linear smoother. The grey shaded areas represent 95% confidence intervals.

Figure 6.1 shows that younger mayors increase discretionary spending on child welfare relative to older mayors. Looking first at panel (a), we can see a clear, vertical jump at the election threshold. Municipalities that narrowly elect the candidate under 50 increase their spending on child welfare compared to municipalities that narrowly elect the older candidate, which tend to decrease spending on children. By comparison, the lack of a significant jump in panel (b) suggests that younger mayors do not change spending on elderly welfare.

To test these results more formally, Table 6.1 presents several models of the RD effect. For each spending category, the estimate is first calculated using local linear regression and an optimal bandwidth, h, chosen to minimize the mean square error, and then for $2h$ to test whether any results change after widening the bandwidth to include more observations around the treatment threshold (Cattaneo, Idrobo and Titiunik 2019; Imbens and Kalyanaraman 2012). The third and fourth models test whether the results are robust to changing the functional form of the RD specification to be quadratic and cubic.

The results from Table 6.1 reinforce the findings from Figure 6.1 that younger mayors target more welfare resources at younger families than older mayors. The effect is not only statistically significant but also substantively meaningful. Model 1 finds that mayors under 50 increase discretionary spending on child welfare by as much as 31% relative to older mayors, and this effect holds across Models 2–4. In contrast, the effects of younger mayors on elderly welfare expenditures do not reach conventional levels of significance in Models 5–8. Together, these results offer support for H1: younger mayors increase their municipality's spending on benefits for younger families relative to older mayors.

Do older mayors similarly increase spending on the elderly? To test H2, Figure 6.2 repeats the analysis from Figure 6.1 for races where one candidate is 70 or older. The only change in Figure 6.2 is that the x-axis is now the candidate 70 and over's vote margin in the election.

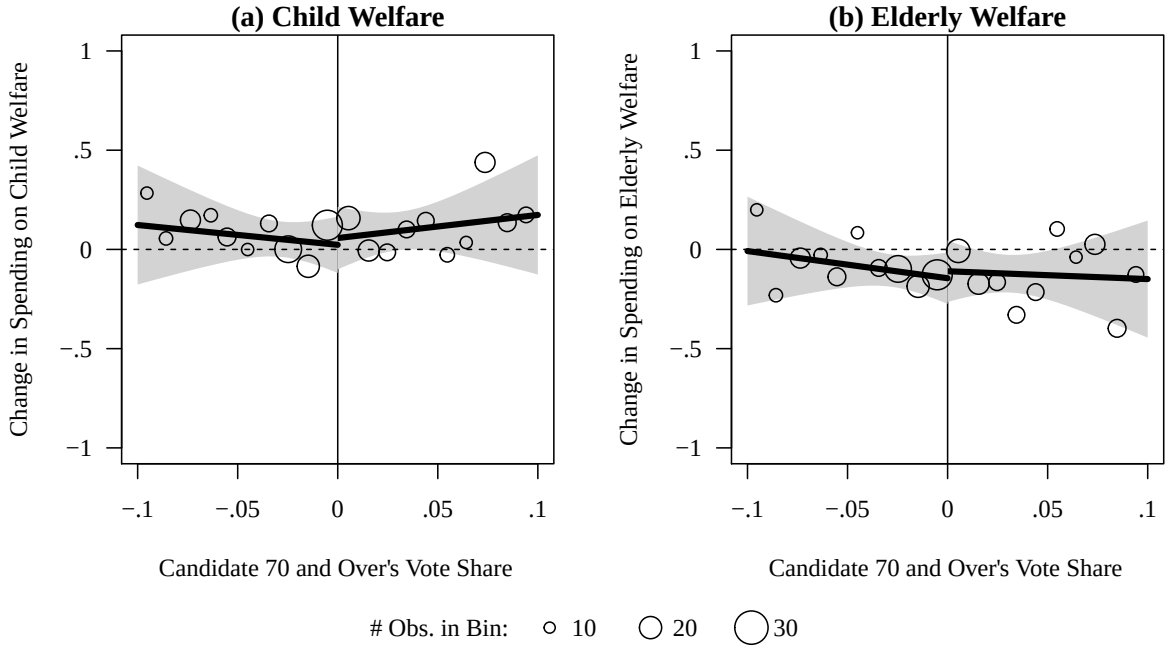


Figure 6.2: Older Mayors Do Not Spend More on Elderly Welfare

Notes: RD plots show the effect of electing a mayor 70 and over on the change in logged per capita spending on child and elderly welfare from the year before to the year after the election. Lines are fit using local linear regression on either side of the election threshold. Circles represent bins of the raw data.

Table 6.2: Older Mayors Do Not Spend More on Elderly Welfare

DV:	Δ Child Welfare				Δ Elderly Welfare			
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 70 and Over	.047	.038	.045	.055	.036	−.016	.063	.089
	(.120)	(.093)	(.152)	(.202)	(.113)	(.088)	(.125)	(.155)
Bandwidth	.146	.292	.200	.200	.105	.210	.200	.200
N	418	553	490	490	332	501	490	490

Notes: RD models show the effect of electing a mayor 70 and over on the change in logger per capita spending on child and elderly welfare from the year before to the year after the election. *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.

The RD plots in Figure 6.2 show that older mayors do not have a significant impact on either child or elderly welfare expenditures. These null findings are further supported by the lack of any significant effects in Table 6.2. In sum, I do not find evidence in support of H2. Mayors 70 and over do not increase their municipality's discretionary spending on welfare benefits for the elderly relative to mayors under 70.

Together, these results offer support for an asymmetric effect of a mayor's age on their welfare policies. Younger mayors direct more of their municipality's resources toward benefits for younger families, but older mayors do not similarly distribute more government resources toward members of their age group. Notably, the increases made by mayors under 50 on spending for child welfare do not come directly at the expense of elderly welfare. Thus, while younger mayors redistribute more government benefits toward parents and children, they do not take these resources away from the elderly. These asymmetric effects could reflect the asymmetric nature of age-related welfare. We may observe a stronger link between age and redistribution among younger mayors because these mayors expect to become older themselves and benefit from elderly welfare in the future, whereas older mayors will not benefit from child welfare. It is also possible that older constituents have a much stronger constraining effect on mayors than younger constituents because of their greater political participation, which could explain the null effect of a mayor's age on elderly welfare.

6.4.2 Age and Time Horizons

Do younger mayors allocate welfare resources over time in different ways than older mayors? To investigate H3, Figure 6.3 begins by exploring the impact of mayors under 50 on investment and subsidies for child welfare. This figure is organized as before, although here the two y-axes represent the changes in logged per capita spending on (a) subsidies and (b) investment in child welfare from the year before to the year after the election.

Figure 6.3 finds that younger mayors make significant changes to both aspects of the child

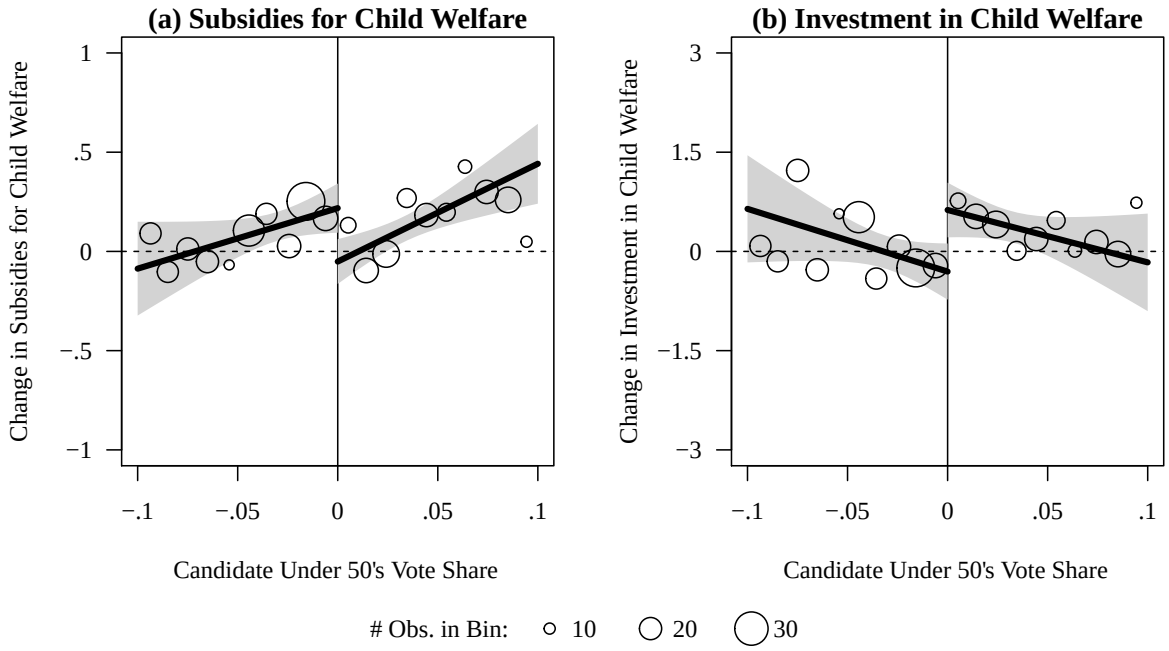


Figure 6.3: Younger Mayors Invest in Child Welfare

Notes: RD plots show the effect of electing a mayor under 50 on the change in logged per capita spending on subsidies and investment in child welfare from the year before to the year after the election. Lines are fit using local linear regression on either side of the election threshold. Circles represent bins of the raw data.

Table 6.3: Younger Mayors Invest in Child Welfare

	Δ Child Welfare							
DV:	Δ Subsidies				Δ Investment			
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	−.256**	−.215***	−.288***	−.439***	.997**	.721**	.981**	1.299**
	(.099)	(.082)	(.097)	(.115)	(.486)	(.323)	(.431)	(.631)
Bandwidth	.060	.120	.200	.200	.076	.152	.200	.200
N	246	437	575	575	303	507	575	575

Notes: RD models show the effect of electing a mayor under 50 on the change in logged per capita spending on subsidies and investment in child welfare from the year before to the year after the election. *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.

welfare budget, albeit in opposite directions. As suggested by H3, panel (b) finds that younger mayors increase spending on investment relative to older mayors. In doing so, however, panel (a) finds that younger mayors also decrease spending on subsidies relative to older mayors, albeit by a smaller percentage.

Table 6.3 supports these findings. While younger mayors increase spending on child welfare overall, I find that there is significant heterogeneity by type of spending. Younger mayors decrease spending on subsidies by 25% (Model 1), but increase spending on investment by nearly 100% (Model 5). Apart from reallocating funds within the child welfare budget, Appendix Table A8 shows that younger mayors raise money for these investment projects by issuing municipal bonds. These estimates are robust to each of the eight specifications shown in Table 6.3 and offer strong evidence in support of H3: younger mayors change the nature of how child welfare is allocated over time.

If younger mayors are more likely to shift spending on children toward the future, then do older mayors shift spending on the elderly toward the present? Figure 6.4 tests H4 by analyzing whether mayors 70 and over change the nature of welfare benefits provided for the elderly in their municipality. The two panels show the changes in spending on subsidies and investment in elderly welfare, respectively.

Figure 6.4 shows that older mayors have a smaller, albeit statistically significant effect in the opposite direction. The jumps at the election threshold suggest that older mayors increase subsidies for the elderly but decrease investment. As shown in Table 6.4, the estimated effects are clearer for subsidies than investment. Model 1 finds that mayors 70 and over increase subsidies for elderly welfare by 18% relative to mayors under 70. The results also indicate that older mayors reduce investment in elderly welfare, although the effects only reach statistical significance in Model 6.

Overall, the findings suggest that while the effect of a mayor's age on the redistribution of welfare between age groups is *asymmetric*, the effect of age on their allocation over time is

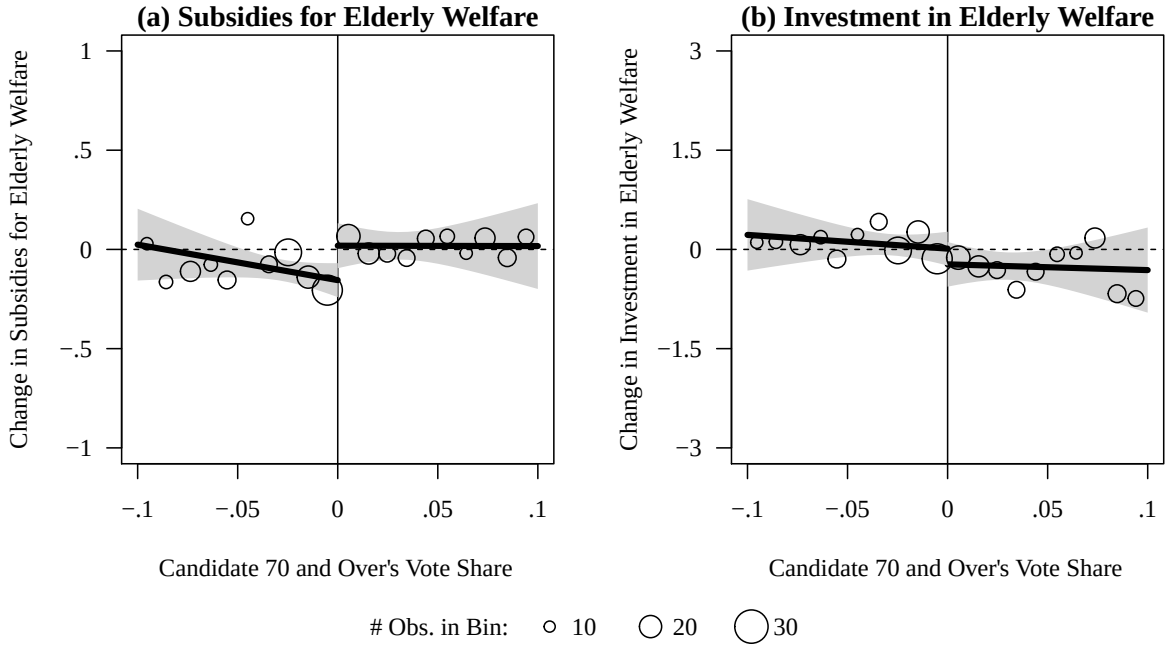


Figure 6.4: Older Mayors Subsidize Elderly Welfare

Notes: RD plots show the effect of electing a mayor 70 and over on the change in logged per capita spending on subsidies and investment in elderly welfare from the year before to the year after the election. Lines are fit using local linear regression on either side of the election threshold. Circles represent bins of the raw data.

Table 6.4: Older Mayors Subsidize Elderly Welfare

	Δ Elderly Welfare							
DV:	Δ Subsidies				Δ Investment			
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 70 and Over	.184***	.160***	.196***	.212***	−.255	−.380**	−.203	−.052
	(.068)	(.057)	(.072)	(.093)	(.240)	(.186)	(.276)	(.342)
Bandwidth	.091	.182	.200	.200	.120	.240	.200	.200
N	300	469	490	490	369	522	490	490

Notes: RD models show the effect of electing a mayor 70 and over on the change in logged per capita spending on subsidies and investment in elderly welfare from the year before to the year after the election. *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.

more *symmetric*. Within welfare spending geared toward members of their age groups, mayors who are relatively younger or older than the typical mayor in Japan have different preferences regarding welfare allocation. Younger mayors are willing to decrease short-term subsidies that benefit younger families to increase longer-term investments in child welfare infrastructure. By contrast, older mayors prefer to direct spending on the elderly toward subsidies given out in the present, and if anything are willing to decrease the level of investment for the elderly.

In sum, the results are largely in line with the original theory (Figure 1.3). Younger mayors move their municipality's status quo toward greater investment in child welfare. By contrast, the results for older mayors are mixed. Older mayors do not increase overall spending on the elderly, but they do increase present-oriented subsidies, and there is suggestive evidence that they are less willing to invest in infrastructure.

6.4.3 Robustness Checks

In the Appendix, I run several tests to address alternative explanations and analyze the main results' sensitivity. Three possibilities come to mind. The first is that I could be attributing changes in spending to mayoral discretion that are driven by other factors, such as changes in the income level or age demographics of municipalities over time. While the RDD setup should assuage some of these concerns, in the Appendix I implement placebo tests to assess whether younger or older mayors influence areas of the welfare budget that they should be unable to change, namely, areas that are determined by the national government according to formulas based on income and demographics (Tables A.10 and A.11). The lack of any significant effect in these areas is reassuring that the results presented thus far capture the role of a mayor's discretion over welfare expenditures.

Second, it could be that that by focusing only on social welfare, I am obscuring a broader trend that the age of a mayor has over the municipal budget. Tables A.12, A.13, A.14, and A.15 show the effect of younger and older mayors on other categories of municipal expenditures and

revenues. Notably, both tables find that a mayor's age does not have substantial effects on other dimensions to the budget. Instead, the significant effects are concentrated in social welfare. These findings make it unlikely that other age-related patterns drive the changes in spending as described here.

A third possibility is that the effects are dependent on the chosen age cutoffs. Figures A.4, A.5, A.6, and A.7 test the robustness of the estimated effects to alternative age cutoffs for both younger and older mayors. For the effect of younger mayors on child welfare spending (H1) and investment (H3), the RD estimates remain statistically significant for any cutoff between the ages of 42 and 52, and peaks at 43.[15] At its peak, the results suggest that mayors under 43 increase spending by 51%, and investment by 197%. In the case of older mayors and subsidies for elderly welfare (H4), the RD effect is significant for cutoffs between 67 and 73, with a peak of a 21% increase at 68.

Finally, all of the main results also hold when including controls for incumbency, gender, population, municipal mergers, and year fixed effects to help account for national-level policy changes during specific years (Tables A.16, A.17, A.18, and A.19).

6.5 Mechanisms

Thus far, the results show that younger mayors increase their municipality's spending on child welfare compared to older mayors, who do not increase spending on elderly welfare. Moreover, younger mayors invest more in child welfare infrastructure, whereas older mayors increase the amount of subsidies given to elderly citizens. Drawing on the theoretical arguments outlined earlier, this section begins to explore the potential mechanisms at work.

[15] Below the age of 42, the number of observations begins to become too small to estimate an RD effect.

6.5.1 Personal Experience

Do younger mayors increase investment in child welfare because of their personal experience as the parents of younger children?

To assess this possibility, I compile data on whether candidates had a child at the time of the election or not. Collecting this information is not an easy task. Candidates are not required to disclose their family structure, and a comprehensive survey of mayoral candidates does not exist. Thus, I rely on publicly available information for each candidate, including personal and municipal websites as well as newspaper coverage of the election. Thankfully, there is a strong norm in Japan for politicians to have a profile page on their website that includes an outlined summary of their prior education, work history, and family structure. Many municipal governments similarly publish the profiles of current and past mayors on their websites, and many politicians likewise share information about their families on social media websites such as Facebook and Twitter.

To evaluate whether younger mayors with children invest more in child welfare than younger mayors without children, I subset the dataset into two groups depending on whether the candidate under 50 had a child at the time of the election. In total, 45% of the younger candidates entered the race with a child. In Table 6.5, I then rerun the RD analysis for each group. Partitioning the main sample into two groups in effect changes the local average treatment effect estimated by each analysis. Models 1–4 estimate the effect of electing a younger mayor *with* a child on child welfare investment, whereas Models 5–8 estimate the effect for younger mayors *without* children.

Overall, the results in Table 6.5 indicate that younger mayors have a significant impact on investment in child welfare regardless of whether they have children. Across all eight models, the coefficients are similarly signed and statistically significant. There are a few models where the effect for mayors with children appears to be slightly larger (Models 1 and 4) than the comparable effect for mayors without children (Models 5 and 8), although this difference is not consistent

Table 6.5: Younger Mayors Invest More Regardless of Whether They Have Children

DV:	Δ Investment in Child Welfare							
Children:	Candidates Under 50 With a Child				Candidates Under 50 Without a Child			
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	1.023**	.688**	.891**	1.321**	0.906**	.802**	1.003**	1.105**
	(.481)	(.334)	(.415)	(.568)	(.376)	(.374)	(.487)	(.520)
Bandwidth	.080	.160	.200	.200	.075	.150	.200	.200
N	157	239	260	260	198	283	315	315

Notes: RD models show the effect of electing a mayor under 50 on the change in logged per capita investment in child welfare. Sample split by whether the candidate under 50 had at least one child at the time of the election. *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.

across specifications.

These findings do not rule out the role of a younger mayor's personal preferences on welfare expenditures, but they suggest that these preferences are not solely dependent on personal experience as parents. As theorized earlier, even younger mayors without children may be well attuned to other members of their age cohort's concerns.

One caveat to the findings presented here is that measuring the effect of personal experience raising children is complicated by whether candidates choose to share this information with voters. In interviews with mayors, most suggested that candidates prefer to share their family information to forge a more personal connection with their constituents. However, it is possible that some candidates do not share this information in order to protect their children from the public eye. If this behavior is common and correlated with preferences for expanding child welfare investment, then it is possible that there could be a larger effect of having children. However, given the publicly available information, the results suggest that the main effect of younger mayors on child welfare investment is not driven by whether they have personal experience raising children.

6.5.2 Responsiveness to Voters of a Similar Age

A second way that age could affect the preferences is through responsiveness to voters of a similar age. Even if mayors do not have personal experience with welfare policies, they may be more attuned with issues important to members of their age group or see a strategic incentive to targeting voters of a similar age. If so, then younger and older mayors may be more likely to increase spending in line with their distributional and temporal preferences in municipalities where their age group makes up a larger share of the electorate.

To put this argument to the test, I first collect municipal-level data on the percentage of the population under 15 and 65 years and older from the census. I then divide the main samples into two subgroups by the median values of these percentages: 13% for children under 15 and 28% for senior citizens 65 and older. I rely on census data about the number of children, rather than the number of parents, because of greater data availability and the fact that the Census of Japan publishes estimates for every year.

Tables 6.6 reruns the main statistical models for younger mayors and child welfare investment by subgroup. Consistent with the theory, the significant effects of younger mayors on child welfare investment are concentrated in municipalities with more children. The coefficients in Models 5–8 are all larger in magnitude than their respective counterparts in Models 1–4 and are statistically significant. The RD estimates in Models 1–4 are in the expected positive direction. However, none of them reach conventional levels of significance.

I find similar results in Table 6.7 for older mayors and elderly welfare subsidies. Again, the effects in municipalities with more elderly (Models 5–8) are all larger and more significant than the estimates in municipalities with fewer elderly (Model 1–4). However, the effects are not as clear as in Table 6.6, as the estimate in Model 5 is only marginally significant, and in Model 8, it is not significant.

The finding that younger mayors pay more attention to child welfare in younger municipalities highlights an important point that longer-term investments can also confer short-term

Table 6.6: Younger Mayors Invest More in Municipalities with More Children

DV:	Δ Investment in Child Welfare							
Subgroup:	Muni. with Fewer Children				Muni. with More Children			
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	.665	.354	.719	.911	1.267**	.900**	1.152**	1.619**
	(.737)	(.502)	(.694)	(1.023)	(.503)	(.357)	(.507)	(.727)
Bandwidth	.085	.170	.200	.200	.085	.170	.200	.200
N	155	263	285	285	186	271	290	290

Notes: RD models compare the effect of electing a mayor under 50 on investment in child welfare. *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 6.7: Older Mayors Subsidize More in Municipalities with More Elderly

DV:	Δ Subsidies for Elderly Welfare							
Subgroup:	Muni. with Fewer Elderly				Muni. with More Elderly			
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 70 and Over	.150	.045	.110	.152	.235*	.264***	.254***	.261
	(.099)	(.087)	(.096)	(.123)	(.124)	(.088)	(.130)	(.175)
Bandwidth	.078	.156	.200	.200	.089	.178	.200	.200
N	134	223	256	256	144	222	234	234

Notes: RD models compare the effect of electing a mayor 70 and over on subsidies for elderly welfare. *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.

electoral benefits to mayors when their core supporters want greater investment. In municipalities where childcare infrastructure is woefully inadequate, younger mayors may feel that they face relatively less electoral risk in dedicating their time and effort to investment projects. Signaling a commitment to addressing the shortage of daycare centers, for example, may give the mayor some leeway with younger voters even if the project takes more than one electoral cycle to complete.

Moreover, younger voters with longer time horizons should similarly be more supportive of the long-term goal of reversing Japan's declining birthrate and enhancing the welfare system's sustainability.

Although these differences between subgroups are heterogeneous effects and not causally identified, the results run counter to what we might expect if a mayor's age did not influence their welfare policy. Given the lack of child welfare investment in the past, municipalities with more young parents are also those that tend to have the highest demand for child welfare infrastructure such as daycare centers (Fukai 2017). If all mayors are equally responsive to younger parents' demands, then we might expect to see smaller differences between younger and older mayors in these municipalities. Instead, the opposite appears to be the case. In younger municipalities with a greater need for childcare investment, younger and older mayors are more likely to diverge in their welfare policies for younger families.

6.6 Ruling Out Alternative Explanations

While the findings suggest a direct connection between a mayor's age and welfare policies, one potential counter-argument is that selection effects could drive these results. There may be differences by age in the types of people that choose political careers and the pathways that individuals take to the mayor's office. These different backgrounds could affect the preferences of mayors toward welfare spending and their relative ability to enact their preferred policies in office. Four possibilities come to mind.

First, the age of mayors may be correlated with their gender. There is a large literature on how the gender of politicians affects welfare policy, with women being more likely than men to focus on childcare issues (e.g., Chattopadhyay and Duflo 2004). Second, younger and older mayors may have differing levels of education. If younger mayors are more educated than older mayors, this may affect their welfare preferences and efficacy as mayors. Third, there may be

a relationship between a mayor's age and their political party. While nearly every mayor in the sample officially ran for office as an independent, parties can offer their recommendations and support to candidates during election campaigns. If a mayor's age is related to their partisan support, any observable differences could be attributed more to party platforms than individual characteristics. Finally, age is perhaps most directly connected to experience. Mayors of different ages may have significantly different careers before entering office, which could affect their welfare policies.

To examine the potential influence of selection effects, I begin by collecting biographical information on the candidates in these close elections from personal and municipal websites as well as newspaper coverage. First, I use candidate profiles to verify the gender of each candidate as recorded through the initial construction of JMED. Second, I record the highest level of school that each candidate completed. Third, I code whether the candidate received any form of support from Japan's long-ruling Liberal Democratic Party or any other political party. Fourth, I account for each candidate's prior experience in elected office or government. Given that I rely on information that is available online, there is some missing data. However, the regularity with which candidates list their profiles helps to avoid this problem—while there is some variation across categories, overall, I am able to collect approximately 90% of the target biographical data.[16]

To test whether differences in backgrounds between younger and older candidates could be driving their differences in child welfare policy, I again rely on RDDs to assess whether there are any discontinuities in these covariates at the election threshold. In statistical terms, I look for any evidence of a compound treatment, wherein the mayor's age is not the only characteristic that changes when a candidate under 50 (70 and over) narrowly defeats a candidate 50 or older (under 70) in a close election. Moreover, in the case of a compound effect, I also look for any evidence

[16]This percentage assumes that candidates do not strategically omit parts of their history as in the case of having children. It seems unlikely for these particular categories, and I try wherever possible to corroborate personal and municipal websites with information from newspaper coverage of the election.

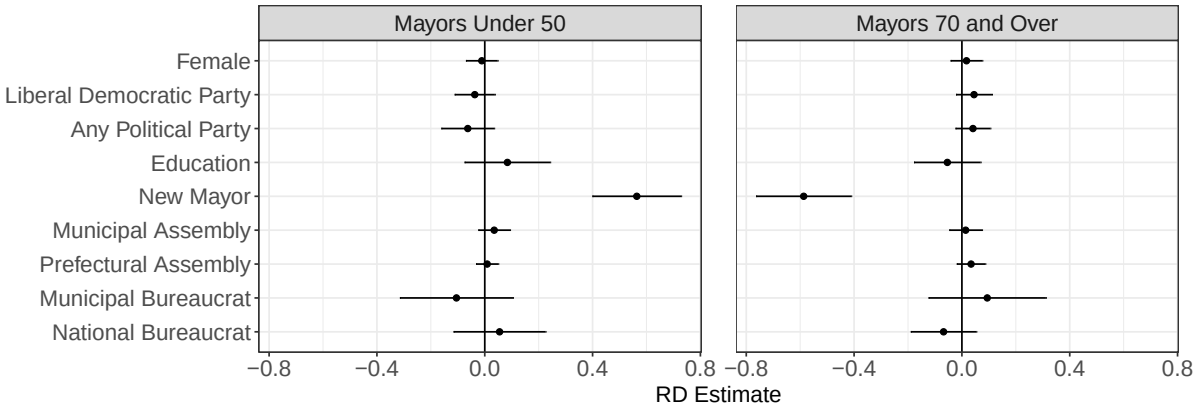


Figure 6.5: Pathways to the Mayor's Office for Younger and Older Mayors

Notes: Education is coded by the highest level of school completed: 0 (high school), 1 (college), 2 (graduate school). All RD models are estimated using local linear regression, a bandwidth h chosen to minimize mean square error, and standard errors clustered by municipality.

as to whether this background characteristic can explain the observed variation between younger and older candidates in their child welfare policies.

Figure 6.5 displays the results. While the findings suggest that there are some interesting patterns between younger and older mayors, the vast majority of individual characteristics are not statistically significant. The signs of the coefficients indicate that 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 compared to older mayors. Each of these trends is reversed for mayors 70 and over. 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.

The one category where a significant difference exists between younger and older mayors is their prior experience as mayor. Mayors under 50 are significantly more likely to be entering the mayor's office for the first time, while mayors 70 and over tend to have prior experience as mayor. Interestingly, younger mayors in the sample do not have any less overall experience in elected office than older mayors. Younger mayors are more likely to enter office with experience

Table 6.8: New Mayors Do Not Spend More on Child or Elderly Welfare

DV:	Δ Child Welfare				Δ Elderly Welfare			
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)
New Mayor	.066	.034	.066	.086	.054	.006	.068	.076
	(.084)	(.061)	(.087)	(.118)	(.062)	(.048)	(.069)	(.088)
Bandwidth	.097	.194	.200	.200	.115	.230	.200	.200
N	1,083	1,629	1,647	1,647	1,214	1,739	1,647	1,647

Notes: RD models show the effect of electing a new mayor on the change in logged per capita spending on child and elderly welfare from the year before to the year after the election. *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.

serving in the municipal assembly, prefectural assembly, or House of Representatives than older mayors, although the RD estimates are not statistically significant.[17]

Is the difference in past mayoral experience the main driver of differences between younger and older mayors in their welfare policies? I take two approaches to assess this possibility. First, as discussed earlier, Table A7 shows that the main results are robust to controlling for the mayor's experience and incumbency status. Second, Table 6.8 estimates the RD effect of electing a new mayor on welfare expenditures. To do so, I use a similar RD approach as the main results, but instead focus on the 2,239 elections in the dataset where the top-two candidates feature an incumbent facing off against a challenger candidate. Table 6.8 finds that there is no significant effect of electing a newcomer on either child or elderly welfare.[18] As a result, it is unlikely that the effect of age is purely a proxy for past mayoral experience. Overall the results in this section do not suggest that political selection is the main explanatory factor for differences between younger and older mayors in their spending on child and elderly welfare.

[17] One mayor in the sample served previously in the House of Councillors and one mayor served previously as governor. These offices are omitted from Table 6 given that there are too few cases to estimate an effect.

[18] I similarly find no effect of new mayors on subsidies or investment for either welfare category.

6.7 Evidence from Interviews

Finally, interview evidence drawn from fieldwork in Japan offers support for the main argument and helps to further illustrate the mechanisms at work. This evidence comes from interviews conducted by the author with 15 mayors of different ages and 20 local bureaucrats across 20 municipalities in Japan between September 2018 and July 2019.[19]

Local officials were near-unanimous in emphasizing the central role of mayors in determining the age orientation of 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" (Interview: Mayor 12). Especially in the case of investment in child welfare, local bureaucrats stressed the importance of the mayor's leadership, "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" (Interview: Bureaucrat 14). Many officials 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" (Interview: Bureaucrat 6).

Interviews also helped to shed light on some of the mechanisms underlying the empirical findings. For example, while it may seem surprising that the personal experience of being a parent appears not to affect a younger mayor's child welfare expenditures, speaking with mayors made it clear that even mayors without children understand the salience of childcare as "one of the most important issues for younger adults in their mid-20s to early 40s" (Interview: Mayor 8). Likewise, regarding the asymmetric effects of age on welfare spending, every mayor spoke openly about the greater power of the elderly in elections and the difficulty in attempting to transfer resources between age groups. One younger mayor even described directly asking a group of older citizens

[19]Interviews are anonymized to protect the identity of mayors and government officials.

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" (Interview: Mayor 11). Lastly, while every mayor said that their main goal is to represent "every member of their city" (Interview: Mayor 2), they were also keenly aware of how their age influenced voter perceptions of them. Mayors revealed that they were more likely to spend their free time with others of a similar age, have members from their age group in their support groups (*koenkai*), and knew well their comparative advantage in appealing to similarly-aged voters.

Finally, interviews provided insights into the link between a mayor's age and their time preferences concerning welfare. When asked how they felt their age affected their welfare policies, many mayors answered in inter-temporal rather than distributional terms. Younger mayors responded that they felt that their age gave them a "stronger sense of crisis about Japan's population shrinking in the future" (Interview: Mayor 4). They talked about "implementing policies that are sustainable for the next 20 to 30 years" (Interview: Mayor 3) and the "downstream benefits to investing in child welfare not only for the low birthrate problem, but also for increasing the number of women who work and encouraging more people to move to [their] municipality" (Interview: Mayor 15). 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" (Interview: Mayor 9), and said that they could have the "greatest impact by focusing on the immediate needs of their constituents" (Interview: Mayor 7) in confronting the challenges associated with population aging.

6.8 Discussion

There is significant evidence that social identities such as race, gender, class, and sexual orientation affect elected officials' behavior. In this chapter, I provide evidence that the age of politicians also matters for policy outcomes. Younger mayors enact substantially different

welfare policies in office than older mayors: their election leads municipalities to increase their overall spending on children and double their prior investment in child welfare. While older mayors do not spend more overall on elderly benefits, they do increase present-oriented subsidies. Mechanism tests suggest the responsiveness of mayors to the relative size of their age group in the electorate influences these effects, but not political selection or prior personal experience with child welfare.

These findings add to our understanding of why governments differ in the age orientation of their welfare programs and suggest that the age bias of political institutions deserves further attention. While this chapter stops short of offering specific recommendations about the optimal mix of welfare expenditures, the results do suggest that any reforms to increase the presence of younger people in public office will have clear policy implications (Chapter 7). On the one hand, individuals worried about intergenerational conflicts over social welfare might see good news in the asymmetric effects of a politician's age on welfare policies. Younger mayors do not seek to defund programs for the elderly to increase benefits for younger families. On the other hand, the results and interviews reinforce past work on the disproportionate power of the elderly in elections, casting doubt on whether younger people can get sufficient attention to issues important to them in cases where they lack descriptive representation.

Theoretically, this chapter also contributes to the literature on representation by providing evidence that individual characteristics can affect not only how politicians target government resources toward groups with a shared social identity, but also how they allocate them over time. Age is thus unique from other social identities 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 policymaking and representation theories, it is important to address the generalizability of these findings. Concerns about generalizability are common to RDDs, which have high internal validity, but limited external validity. The advantage of my design is that I can compare the effect of a mayor's age 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.

Importantly, I find a significant effect of age on child welfare investment in a setting where prior research has suggested that a close election's electoral uncertainty should discourage investment. Finding a substantial effect of age on the actual transfer of government resources in this context, an arguably demanding test, may indicate that age differences among politicians will translate to other settings. Alternatively, it could be that close elections induce different behaviors among politicians of different ages. For example, older politicians may react to electoral uncertainty by becoming more risk-averse and reducing investment. In contrast, younger politicians may take on relatively more risk and commit to new investments in childcare to shore up their support from younger constituents.

Further research is needed to explore the extent to which the results are generalizable to other country contexts. 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. While Japan is ahead of the curve, many advanced democracies are following closely in its footsteps with aging populations, such as Germany and Italy, or similarly have few young people in public office, such as South Korea and the United States. 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 isolate the effect of a politician's age on welfare expenditures, other studies could test whether younger legislators are more likely than their older colleagues to serve on committees that oversee education and childcare issues or respond to requests for welfare services from younger citizens. Beyond social welfare, we know from public opinion polls that individuals of different ages often have different preferences on a wide range of issues, including same-sex marriage, immigration, gender equality, global governance, and environmental protection (Norris and Inglehart 2001; Wattenberg 2007; Kissau, Lutz and Rosset 2012). Future work should explore the extent to which younger politicians adopt different positions on these issues in office than older politicians.

Chapter 6, in part, is currently being prepared for submission for publication of the material: McClean, Charles T. "Does It Matter That Politicians Are Older Than Their Constituents? Yes." The dissertation author was the sole researcher and author of the paper.

Chapter 7

Conclusion

> Younger generations are not adequately represented in formal political institutions such as parliaments, political parties, and public administrations. This leads many to feel leadership and policymaking are reserved for an elite. A society that does not fully respect everyone's equal right to participate is fundamentally unsound. The right to express opinions—including criticism—and to participate in public affairs are essential to ensuring state institutions are accountable, grounded in service to the people.
>
> (Zeid Ra'ad Al Hussein, UN High Commissioner for Human Rights, 2016)

Is Japan a silver democracy? Japan has the world's oldest and most rapidly aging population, declining turnout among younger voters, and few young people in public office compared to other democracies. All three of these characteristics raise concerns about whether middle-aged and older policymakers will be able to sufficiently implement policies that are crucial for Japan's long-term economic health and the sustainability of the welfare system, but may not be as popular with older citizens. To date, welfare expenditures in the country have been heavily tilted toward the elderly, with relatively meager benefits for younger families. To a certain extent, this is understandable given Japan's aging population, although studies suggest the age bias of current benefits go beyond age demographics (Lynch 2006; Estevez-Abe 2008). Ultimately, this dissertation's aim has not been to argue what the optimal mix of welfare expenditures should be, but rather to provide evidence that if young people were represented more equally in political

Table 7.1: Summary of Findings for the Causes of Youth Representation

Signs in parentheses denote the relationship between the variable and the level of youth representation			
Chapter 2 Cross-National Institutions	Chapter 3 National Institutions	Chapter 3 Municipal Institutions	Chapter 4 Voters
Personal Vote (–) Legislative Resources (–) Minimum Age of Candidacy (–)	Personal Vote (–) Open Recruitment (+)	Personal Vote (–) District Population (+) District Magnitude (+)	Voter Biases (X)

Notes: Summary of findings from Chapters 2, 3, and 4. X: no clear relationship.

institutions, policy outcomes would be significantly different from the status quo. Thus, if any country should be labeled a "silver democracy," it is Japan.

In the first half of the dissertation, I analyze the causes of youth under-representation in the world's 68 most populous democracies and across offices within Japan. The findings from Chapters 2, 3, and 4 are summarized in Table 7.1.

The most consistent finding across all three levels of analysis—cross-national, national, and sub-national—is the connection between the electoral system and the relative number of younger representatives in office. As theorized, electoral settings that put the onus on individual candidates to develop a personal vote via significant financial resources, long-term ties to a community, extensive prior experience in office, or name recognition have few younger politicians. Likewise, at the country level, legislative institutions with high minimum age requirements and those that provide incumbents with perquisites such as generous salaries, large staff, and developed committee systems can create strong barriers to entry for young people seeking to win a seat in national parliaments (Chapter 2).

In Chapter 3, I provide evidence that institutional reforms can be successful in increasing youth representation. When Japan reformed its electoral system for the House of Representatives from a candidate-centered system to a more party-oriented system, the number of young people running for office increased. Similarly, when the two major parties in Japan post-reform (the LDP and DPJ) changed their recruitment rules to open up competition, a more diverse set of young

people began to run for office.

I also find that while young people are under-represented in most political offices across Japan, there is significant heterogeneity across municipal institutions within the country. In cities and wards where populations are larger, party competition is more prevalent, and social norms are more liberal, younger politicians can be relatively common. In contrast, politicians are substantially older in smaller towns and villages where the personal vote is critical, competition is more intense, and conservative voters value political connections to the central government more heavily than candidates' policy stances. I also provide causal evidence that high district magnitudes and larger assembly sizes can encourage more young people to run in the next election, whether it is because of greater party encouragement or because they believe their youth will allow them to stand out among a larger pool of candidates.

In contrast to all of the evidence that points to supply-side, institutional explanations for youth under-representation, one of the most surprising findings of this dissertation is that demand-side voter biases do not seem to be as important. Even in the case of an executive position such as a mayor, voters are equally supportive of younger and middle-aged candidates, and greatly prefer younger candidates over elderly candidates. Voter preferences thus stand in stark contrast to the observed candidate pool for mayors, where the average age is 62. Moreover, older voters, who turn out to vote at higher rates, are no less supportive of younger candidates and are the most negative toward elderly candidates. Thus, I find no evidence that demand-side biases from voters are standing in the way of more young people running for office.

As noted in Chapter 4, these findings are positive signs for future youth representation in Japan. If institutions can be reformed to encourage more young people to run for office, the evidence suggests that voters will be happy to support them.

In the second half of the dissertation, I analyze the consequences of youth under-representation for policy outcomes, with particular attention paid to social welfare policy. The summary of the findings from Chapters 4, 5, and 6 are presented in Table 7.2.

Table 7.2: Summary of Findings for the Consequences of Youth Representation

Signs in parentheses denote the relationship between younger politicians and the variable		
Chapter 4 Voter Evaluations of Younger Candidates	Chapter 5 The Campaign Communications of Younger Candidates	Chapter 6 Younger Mayors and Municipal Expenditures
Child Welfare (+)	Child Welfare (+)	Child Welfare (+)
Elderly Welfare (–)	Elderly Welfare (–)	Elderly Welfare (X)
Long-Term Policy (+)	Long-Term Welfare (+)	Long-Term Welfare (+)
Experienced (–)	Short-Term Welfare (–)	Short-Term Welfare (–)

Notes: Summary of findings from Chapters 4, 5, and 6. X: no clear relationship.

At each stage of the political process—from initial voter judgments (Chapter 4) to campaign communications (Chapter 5) to behavior in elected office (Chapter 6)—I find that a politician's age can have a significant effect on the distributional and temporal dimensions to their welfare policies.

Beginning with Chapter 4, I find that voters use age as an informational shortcut and infer that politicians of different ages will pursue different policies along both of these dimensions. When voters in our experiments were randomly assigned to view a mayoral candidate's face that had been manipulated to look younger, they believed that the candidate would be more likely to promote policies related to education and childcare as well as climate change, anti-corruption measures, foreign residents, and multiculturalism. In contrast, voters randomly assigned to view the same candidate who had instead been altered to look older suddenly believed that the candidate would focus more on elderly care and healthcare. Similarly, respondents viewed elderly candidates as bringing the most experience into office, but as the least likely to pursue government policies from a longer-term perspective.

In Chapter 5, I find that voter expectations are borne out on the campaign trail. Younger candidates for municipal assembly and mayor are more likely to tweet about child welfare and long-term welfare, whereas older candidates emphasize elderly welfare and short-term benefits. Moreover, these age differences among candidates are not limited to the social media accounts of

municipal politicians. Drawing on an elite survey of candidates for the House of Representatives, I show that even when controlling for party, incumbency status, and gender, candidates in their 20s and 30s are more likely to list "childcare and education" as a top government priority. In contrast, candidates in their 60s and 70s are more likely to say that the government should instead prioritize "pensions and healthcare." Age differences among candidates are also visible in questions that ask about their temporal welfare preferences. Younger candidates are more likely than older candidates to say that they support reducing current welfare benefits to shore up the long-term sustainability of the country's economy.

Finally, in Chapter 6, I provide causal evidence that these campaign pledges are not just empty promises. Using a regression discontinuity design, I find that municipalities that narrowly elect a younger person mayor increase their spending on child welfare after the election. Moreover, this increase in spending comes mainly from greater investment in much-needed infrastructure, such as building more public daycare centers to alleviate Japan's challenges with long waitlists for younger parents. Interestingly, younger mayors do not fund these additional expenditures for younger families and children by taking resources directly away from the elderly. Older mayors are more likely to shift resources for the elderly along the temporal dimension away from investment and toward more immediate benefits, but they do not spend more overall on elderly welfare than younger mayors.

As noted in Chapter 6, ultimately, there are two different interpretations of the null (X) finding in Table 7.2 for the link between the age of a mayor and elderly welfare expenditures. A more positive interpretation is that the election of more young people to public office does not necessarily need to lead to an increase in intergenerational conflict. As seen in the experiments in Chapter 4, older voters do not dislike younger candidates even though they expect them to pay more attention to education and childcare. In Chapter 6, even though younger representatives increase expenditures on younger families, older voters can be somewhat reassured because this spending does not come at the expense of their welfare benefits. However, a more cynical

perspective is that the significant electoral power of the elderly constrains younger politicians. Thus, while older politicians have no problem spending relatively less on children, younger politicians are hesitant about crossing elderly voters by reducing their benefits to fund greater spending on younger families.

Ultimately, the combined findings of Chapters 4, 5, and 6 are that the age of politicians matters for representation and policy outcomes. Younger politicians promote and implement more policies that benefit younger families and allocate welfare resources toward the future, and this behavior is in line with voter expectations.

7.1 Recommendations for Increasing Youth Representation

As noted earlier, my intention in this dissertation is not to issue specific recommendations on either the optimal age composition of political institutions or the best mix of child and elderly welfare benefits. However, the second half of the dissertation's core finding is that efforts to increase youth representation will have clear policy implications for social welfare. Policymakers may thus be interested in increasing youth representation for instrumental reasons, such as a desire to see an increase in investment in child welfare, or for normative reasons because they care about intergenerational justice and equity.

Recently, some politicians, bureaucrats, and experts in Japan have cited both instrumental and normative justifications in putting forward four potential policies to increase youth representation. However, none of these policies have yet to gain sufficient traction with the politicians in positions of power to implement them. In this section, I draw on the findings from the first half of the dissertation to weigh in on these proposals and offer recommendations for policymakers interested in increasing youth representation.

Recommendation 1: Lower the age of candidacy to 18 for all elected positions.

In early 2018, the LDP's Headquarters for Party and Political System Reform Implemen-

tation (*tou seiji seido kaikaku jikkou*) announced that it was considering a policy of lowering the official age of candidacy to 20 for all offices in Japan. On May 24 that year, the Youth Policy Parliamentary Group—a group of 35 MPs in their 20s and 30s from six parties—said that they would take up discussion of the reform in their inaugural meeting.[1] In June, the group then surveyed 3,300 members of 44 youth groups to solicit their opinions on reducing the age of eligibility. All who responded thought that Japan should lower the eligibility age, although they differed in their views about the best target age: 69% of youth group members thought that the age minimum should be reduced to 18 to match the voting age compared to 23% that said 20 and 8% that said 22.[2] On November 27, the group issued its first official set of policy recommendations, with the very first proposal being that Japan should lower the age of candidacy to 18 for all offices.[3]

What do the findings of this dissertation suggest about age restrictions on eligibility? In the cross-national regressions conducted in Chapter 2, I find a robust and significant relationship between the minimum age of candidacy in a country and the number of MPs under 40 years old. When controlling for economic development and a host of other institutional characteristics, my fully specified model suggests that if Japan reduces its minimum age of candidacy from 25 to 18, the percentage of representatives under 40 will increase by four percentage points. Given that the most recent House of Representatives elections have typically witnessed 10% or less of MPs entering office in their 20s and 30s, this boost could expand youth presence by as much as 40% from its current level. Translated to the lower chamber's overall size, the results suggest that lowering the age of eligibility could lead to as many as 18 more representatives under 40 entering

[1] Yuki Murohashi, *Hisenkyoken nenrei, kyoutakukin wa doko made sagerubeki ka? Wakamono seisaku suishin giren daiichikai soukai* (To What Extent Should the Age of Voting and Deposit Money Be Lowered? Youth Policy Parliamentary Group First General Meeting), *Yahoo News*, May 29, 2018.

[2] Yuki Murohashi, *Daigakusei demo seijika ni - wakamono kara hisenkyoken 18-sai, kyoutakukin 10 man-en wo teigen: Wakamono seisaku suishin giren dainikai soukai* (Even College Students Can Become Politicians - Recommendations Suggest Lowering Age of Candidacy to 18 Years Old, Deposit to 100,000 Yen: Youth Policy Parliamentary Group Second General Meeting), *Yahoo News*, June 15, 2018.

[3] Youth Policy Parliamentary Group, *Wakamono seisaku suishin giin renmei teigen* (Proposal from the Youth Policy Parliamentary Group), November 27, 2018.

the House of Representatives after each electoral cycle.

Japan's relatively high minimum age of candidacy exists for all elected offices in the country and is even higher for governors and members of the House of Councillors. With that being said, I have tried to be cautious throughout Chapters 2 and 3 in noting that the claim that lower age minimums influence youth representation is based on correlational rather than causal evidence. We lack studies that have rigorously identified the effect by using over-time data in countries that implemented reforms. At the same time, there is also no evidence of adverse effects thus far in the many countries that have lowered their minimum candidacy ages, such as Austria, Belgium, France, Kenya, Turkey, and the United Kingdom.

From the standpoint of intergenerational justice and equity, the decision is clearer (Bidadanure 2015, 2017). Since 2016, even the United Nations has backed the reasoning that it is fundamentally undemocratic for young people to be old enough to vote at 18 but unable to stand for office themselves, as noted in the opening quote of this chapter. While we need more research to determine the actual effectiveness of these policies, it seems unlikely that lowering the age of candidacy will somehow discourage more young people from running. Japan lowered its voting age from 20 to 18 in 2016 and will lower the age of adulthood from 20 to 18 in 2022. Policymakers interested in increasing youth representation should similarly lower the age of candidacy to align it with other age restrictions at 18 years old.

Recommendation 2: Eliminate the minimum deposit system for candidates.

The second proposal put forward by the Youth Policy Parliamentary Group on November 27, 2018, argued that the minimum deposit needed to run for office should be substantially reduced or abolished.[4] As noted in Chapter 3, these entry fees for the HOR are expensive: 3 million yen ($28,000) for the SMD tier and 6 million yen ($56,000) for the PR tier.[5] In the same

[4] *Ibid.*

[5] As discussed in Chapter 3, these deposits can be returned to the candidate if they win or if they secure enough votes in the election. However, the formula for returning funds is set at a high enough threshold that effectively most candidates will not have their deposit refunded.

survey from June 2018, the parliamentary group asked youth advocacy group members across Japan to weigh in on the optimum minimum deposit. Among respondents, 60% believed it should be reduced to 100,000 yen ($947), 20% suggested 300,000 yen ($2,840), and 20% said it should be abolished altogether. The report also noted that Japan's high minimum deposits are at odds with many other countries: the cost is more than twice that of South Korea, more than four times that of Taiwan, and more than 10 times that of Canada or the United Kingdom. Additionally, several other countries, such as the United States and Germany, do not have any such deposits.

The work in this dissertation does not explicitly test the effects of minimum deposit systems, but it does consider the costs of running for office. Moreover, what causal evidence we have from other studies suggests that deposit systems are not having their supposedly intended effect, which is to deter fringe candidates. In their recent study, Harada and Smith (2014) find that fringe candidates are happy to continue paying the deposit, whereas the actual effect of the program has been to discourage major party candidates who lose the deposit in their first election from running a second time. While we need work that explicitly looks at younger people, these findings are worrisome given that minimum deposits could be deterring younger candidates from making one or multiple attempts at entering the HOR.

What I do find in this dissertation is evidence that when there are higher costs placed on individual candidates, young people can be discouraged from running for office. Electoral systems that create these high-cost barriers for individual candidates are also those with fewer younger representatives. In Chapter 2, I find suggestive evidence that public funding for parties is associated with higher youth representation, and in Chapter 3, I show how more young people ran for office for the HOR after public funding became available post-electoral reform.

From the standpoint of equity and fairness, many observers have also noted that the minimum deposit system is contrary to Article 44 of the Japanese Constitution:

> The qualifications of members of both Houses and their electors shall be fixed by law. However, there shall be no discrimination because of race, creed, sex, social status,

family origin, education, property or income.

(Constitution of Japan, Article 44)

Eliminating these minimum deposits, which are higher than any other country, may open the door not only to more young candidates but also to other financially disadvantaged candidates, including women and those from working-class backgrounds.

> **Recommendation 3:** Change the electoral system for municipal assemblies to one based on proportional representation.

In 2017 and 2018, the Ministry of Internal Affairs and Communications commissioned a series of expert panels to discuss potential reforms to municipal assemblies in Japan. The reports from these panels put forward three possible recommendations for revitalizing local assemblies.

The first option proposed the adoption of proportional representation (PR) for larger city and prefectural assemblies. The second suggested reducing the number of assembly members in towns and villages to approximately five full-time politicians with higher salaries, supported by a deliberative body filled with a random selection of citizens from the municipality. The third, also targeted at towns and villages, proposed instead to expand the size of assemblies by adding part-time members that earned a lower salary than regular, full-time members.[6]

All three of these proposals are promising for advocates of youth representation if only because they indicate a willingness on the part of the Ministry of Internal Affairs and Communications to at least consider reforms. With that being said, the findings in my dissertation suggest that the first option would have the clearest effect on increasing youth representation in municipal assemblies.

The most consistent finding across Chapters 2 and 3 is that electoral systems that give greater weight to parties, such as PR, have younger legislatures than those that incentivize candidates to cultivate a personal vote. Policymakers interested in increasing the number of

[6]For a thorough review of the three proposals, see Ken Victor Leonard Hijino, "Japan's Shrinking Democracy: Proposals for Reviving Local Assemblies," *nippon.com*, May 16, 2018.

younger politicians could, therefore, suggest implementing PR not only in larger cities but across municipalities in Japan. In doing so, proponents of youth representation could also find common cause with reformers interested in other goals. For example, PR would also likely bring greater party competition to municipal elections that are otherwise beset by particularistic, candidate-centered campaigns and corruption under the SNTV system. Moreover, PR can provide a means for opposition parties to make inroads into municipal politics, an area that has long been dominated by the LDP. These reforms could thus have a tremendous impact not only on increasing youth representation but also in transitioning local politics toward more policy-oriented campaigns and helping opposition parties to build local support bases so that they can better compete with the LDP in national politics.

Of the two other proposals, the one that suggests reducing the size of assemblies and increasing salaries would likely lead to even fewer young people in elected office. As I showed in Chapter 3, smaller district magnitudes and assembly sizes tend to lead to older legislative bodies. While young people could potentially influence politics through the randomly chosen deliberative body, the proposal suggested by the panel of experts gave no formal powers to this body. Thus, it is difficult to have confidence that middle-aged and senior full-time politicians would necessarily listen to young people's policy recommendations via this process.

Finally, I expect that the final proposal would also increase the number of young people in legislatures. Apart from increasing the size of assemblies, part-time members could also permit a more diverse set of people to participate in the assembly, including more young people. As noted at the end of Chapter 3, some researchers of local politics in Japan have suggested that municipal assemblies can be exclusionary toward young people because they do not permit members to hold other jobs at the same time, yet offer low salaries. The question of this proposal's effectiveness might depend on whether the "part-time schedule" would allow younger legislators to work regular jobs and only join the parliament in the evenings or on weekends. At the same time, one downside to this proposition is that creating two tiers of assembly members, with some irregular

and some regular, raises concerns about whether younger, part-time members will be able to influence the policymaking process. Moreover, compared to PR, this reform does nothing to address the SNTV system, which has historically seen relatively few younger candidates.

In sum, of these three proposals, I expect that changing the electoral system to introduce PR will likely have the greatest effect on increasing youth representation in municipal assemblies. PR can also lead to other outcomes that may be desirable for policymakers, from greater party competition to enhanced gender diversity (Norris 2004).

Recommendation 4: Consider introducing youth quotas.

On May 23, 2018, just a week before the first meeting of the Youth Policy Parliamentary Group, the Japanese parliament enacted the Act on Promotion of Gender Equality in the Political Field.[7] The act encourages parties in municipal and national elections to promote gender equality by making "the numbers of male and female candidates as even as possible."[8] The act took three years to make its way through the parliament, partly because of significant resistance from the LDP, and ultimately only won passage because it was nonbinding.[9] Because these gender party recommendations are not mandatory, however, the effect of the act thus far is questionable. In the 2019 House of Councillors election, some opposition parties did increase their nominations of female candidates, but just 14.6% of the LDP's candidates were women.[10]

Quotas can be effective strategies for securing the descriptive representation of under-represented groups only if designed and implemented effectively (Chapter 2). While the 2018 reform did not consider young people, the evidence from the gender parity law suggests that the long-ruling LDP has little appetite for discussing formal quotas. Enacting reserved seats or a legislated youth quota in this environment may be challenging, but certain opposition parties may

[7] Act on Promotion of Gender Equality in the Political Field, *Seiji bunya ni okeru danjo kyoudou sankaku no suishin ni kansuru houritsu*, Act No. 28 of May 23, 2018.

[8] *Ibid.*

[9] For a thorough discussion of the process, see Mari Miuri, "Japan's Leader Wants to Empower Women. Just Not in His Party." *New York Times*, July 26, 2019.

[10] The LDP's coalition partner, Komeito, nominated even fewer women at 8.3%. *Ibid.*

be more open to party youth quotas. The DPJ, for example, found great success in 2009 when it recruited the youngest slate of candidates in Japanese history. While the DPJ is no longer in the electoral arena, a newer opposition party could see a strategic incentive to instituting youth quotas to help it stand out from the traditional image of the LDP.

At the local level, in contrast, it is unclear how such quotas can be effective. While some countries such as Peru have found great success with youth quotas for local offices, in the Japanese case the challenge is that the vast majority of candidates run for office as independents.[11] Without the greater influence of party competition, such as via Recommendation 3, the effectiveness of youth quotas at the municipal level may be limited to larger cities and wards.

While there may be challenges at both the national and municipal levels, policymakers interested in youth representation should consider the costs and benefits of implementing youth quotas, as quotas are the most direct, legal means of increasing the number of younger representatives.

7.2 Directions for Future Research

Lastly, the findings in this dissertation suggest several promising directions for future research.

First, studies can integrate the results concerning the consequences of youth underrepresentation into the broader comparative literature on candidate-centered and party-centered systems. My findings suggest that legislatures may face a trade-off between balancing youth and experience. On the one hand, a legislature with only older politicians may push government spending toward the elderly at the expense of younger families, be slow to adapt to newer policies for tackling welfare reform, and further alienate young people from the policymaking process. On the other hand, a legislature with only younger representatives may lack the experience

[11] For a detailed discussion of Peru's youth quotas, see USAID, "Raising Their Voices: How Effective Are Pro-Youth Laws and Policies?" 2019.

necessary to efficiently govern, implement policies, and provide oversight of the executive. This dissertation's aim has not been to suggest that qualities such as previous elected experience or ties to a community have no value. Instead, the goal has been to suggest that some institutional settings may value these individual qualities to such an extent that there can be perverse externalities, such as a lack of legislative diversity or incentives for corruption under the SNTV system. Moreover, while this trade-off might exist, work could explore whether particular legislatures have been able to find a balance between the two goals, for instance, by studying the Nordic countries where legislatures are more reflective of the age composition found in society.

Second, more research is needed to understand better the symbolic effects of youth representation in elected offices. In this dissertation, my main focus has been on the consequences of older legislatures for the age and time orientations of welfare policies important to young people, such as support for education and investment in childcare. However, the greater presence of younger politicians in public office may also have a symbolic effect and encourage more young people to participate in the political process because they view politicians as more like them. In Chapter 4, I did not find evidence from my survey experiment that viewing a younger mayoral candidate on the ballot increased younger people's likelihood of voting in an election, but work in other contexts suggests that symbolic effects can be important (Pomante and Schraufnagel 2015; Stockemer and Sundstrom 2018). Studies could explore, for example, how the presence of younger representatives affects not only youth turnout but trust in government among young people. Moreover, research is needed to explore whether there are "role model" effects where a young person's election can inspire other young people to run for office themselves.

Third, researchers should investigate the intersection of age with other social identities, such as gender, race, and ethnicity. From a research design standpoint, the poor diversity in Japanese municipal races enables me to isolate better the effects of age in a setting where other social cleavages are less common. However, we need work that explores whether and to what extent the effects of age persist in settings where other identities are salient. For example, many

studies connect female politicians with social welfare policies, and it would be interesting to test how age interacts with gender in affecting the age orientation of the welfare policies that women promote in office.

Fourth, I hope that this work can inspire others to test the extent to which the findings in Japan generalize to other countries and cultural contexts. As discussed in Chapter 2, there is significant variation across countries in the age demographics of both societies and parliaments. In this dissertation, I have focused on a case where the population is rapidly aging, younger voters turn out at lower rates than older voters, and young people are under-represented in the legislature. However, other studies are needed to test whether younger and older legislators similarly behave differently in other OECD countries where young people turn out to vote at higher rates or have equal representation in the legislature, such as in Italy, Finland, and Denmark. As discussed in Chapter 2, research should also investigate youth representation in developing countries where the representation gaps can be the largest, as in newer, younger democracies in Africa.

Finally, future studies can analyze the broader influence of age on a politician's representation style and policy agenda. In Chapter 5, I provided evidence that younger politicians in a traditional campaign environment, such as that found in Japan, are better at adapting to new mediums of communicating with voters, such as Twitter. Besides using social media, research could test whether younger candidates are more likely to utilize other technologies in their campaigns, whether they adopt different speaking styles when they converse with voters, or whether they respond differently in office to requests for services from citizens. Lastly, while past studies on elite characteristics have tended to focus on how they affect preferences for the redistribution of benefits between groups, one of the unique findings of my dissertation is that age can also affect a politician's preferences for the allocation of benefits over time. More work is needed to test the limits to which a younger politician's longer time horizons can affect their positions on other policy issues with long-term trade-offs such as government debt, trade protectionism, and climate change.

Appendix A

Table A.1: Balance Checks for Fuzzy RDD

	RD Estimate	SE	Bandwidth (h)	N
Population	3,355.356	(2,582.435)	7,224.4	1,365
% Under 15	−0.004	(0.003)	9,749.0	1,515
% 15–64	0.002	(0.004)	9,842.7	1,521
% 65 and Over	0.002	(0.007)	9,867.2	1,522

Notes: All fuzzy RD 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.

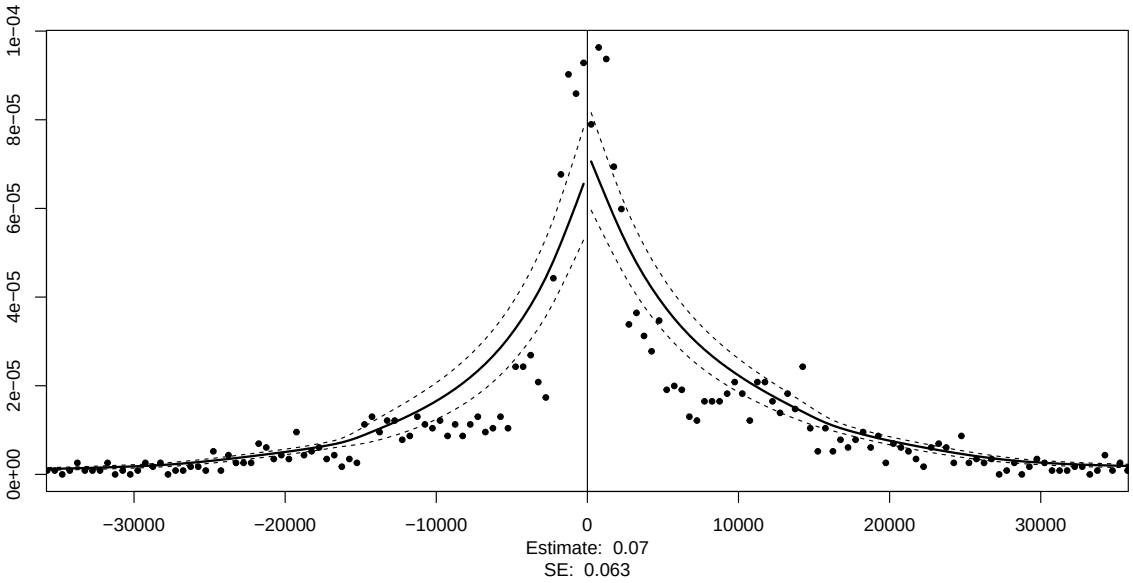


Figure A.1: McCrary Density Test for Fuzzy RDD

Notes: Figure shows the density of municipality population is continuous at the threshold.

Table A.2: First Stage Estimations for District Magnitude

	District Magnitude		
	(1)	(2)	(3)
Upper Limit of Assembly Size	0.870***	0.893***	0.895***
	(0.012)	(0.012)	(0.012)
Bandwidth	9,619	15,243	15,789
Polynomial	1st	2nd	3rd
Observations	1,510	1,867	1,883
R^2	0.772	0.763	0.769

Notes: First-stage results for the two-stage least square regressions in Table 3.4 (Models 2, 3, and 4). Table only shows results for Upper Limit of Assembly Size. The first-stage F test also rejects the null that the Upper Limit of Assembly Size is a weak instrument. $^{*}p<.1$; $^{**}p<.05$; $^{***}p<.01$.

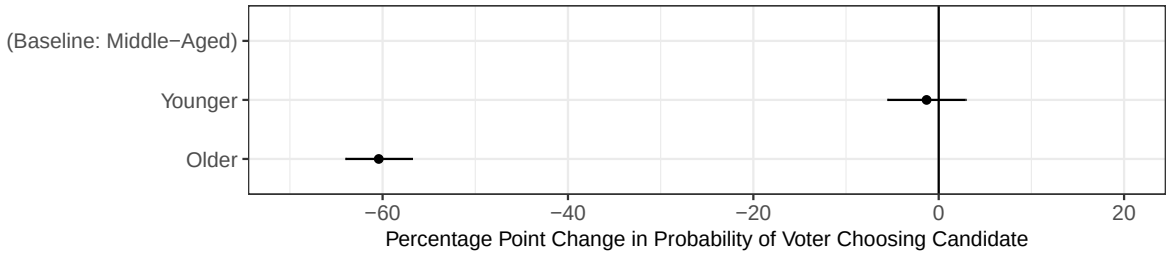


Figure A.2: Candidate Age and Vote Choice (Likely Voters)

Notes: Dependent variable is equal to 1 if the respondent said they would vote for the candidate, and 0 otherwise. Bars show 95% confidence intervals.

Table A.3: Younger Candidates Engage with Others More on Twitter (Linear Age)

		Engagement with Others			Engagement by Others	
	Tweets (n)	Retweets (%)	Replies (%)	Hashtags (%)	Favorites (median)	Retweets (median)
	(1)	(2)	(3)	(4)	(5)	(6)
Age	-1.52^{***}	-0.001	-0.002^{***}	-0.003^{***}	-0.01	1.24
	(0.38)	(0.001)	(0.0005)	(0.001)	(0.02)	(2.10)
Female	21.92^{***}	0.06^{***}	0.01	-0.01	-0.63	-121.83
	(7.37)	(0.02)	(0.01)	(0.02)	(1.25)	(196.96)
Incumbent	-22.95^{**}	-0.02	-0.01	-0.02	-0.86	22.35
	(10.75)	(0.01)	(0.01)	(0.02)	(1.06)	(83.91)
Mayoral Election	23.51^{*}	0.01	-0.01	0.07^{**}	11.52	-17.12
	(13.33)	(0.03)	(0.02)	(0.04)	(7.55)	(29.40)
Observations	1,697	1,697	1,697	1,697	1,697	1,697
Municipality Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.32	0.30	0.33	0.38	0.40	0.08

Notes: Standard errors clustered by candidate and municipality are shown in parentheses.

Table A.4: Mayoral Elections With and Without Younger Candidates

	At Least One Candidate Under 50					
	Yes		No		Difference in Means	
	A	SD(A)	B	SD(B)	A–B	SE(A–B)
Municipality						
Population (thousands)	152.1	(319.9)	61.3	(156.7)	90.8***	(10.7)
% Under 15	0.129	(0.022)	0.123	(0.024)	0.005***	(0.001)
% 15 to 64	0.607	(0.05)	0.586	(0.054)	0.021***	(0.002)
% 65 and Over	0.264	(0.064)	0.290	(0.072)	−0.026***	(0.002)
Region						
Hokkaido	0.061	(0.24)	0.103	(0.304)	−0.042***	(0.009)
Tohoku	0.071	(0.257)	0.143	(0.35)	−0.072***	(0.01)
Kanto	0.271	(0.445)	0.164	(0.37)	0.107***	(0.016)
Chubu	0.168	(0.374)	0.185	(0.388)	−0.017	(0.013)
Kansai	0.185	(0.389)	0.121	(0.327)	0.064***	(0.014)
Chugaoku	0.057	(0.232)	0.064	(0.245)	−0.007	(0.008)
Shikoku	0.041	(0.198)	0.059	(0.235)	−0.018**	(0.007)
Kyushu and Okinawa	0.146	(0.353)	0.161	(0.368)	−0.015	(0.013)
Election						
Year	2011.1	(3.83)	2010.9	(3.82)	0.255*	(0.137)
Contested	0.896	(0.305)	0.609	(0.488)	0.287***	(0.012)
Winning Vote Share	0.612	(0.095)	0.612	(0.096)	0.000	(0.004)
Municipalities	616		1,694		1,741	
Prefectures	47		47		47	
Elections	933		4,837		5,770	

Notes: Mayoral elections with and without at least one candidate under 50 years old among the top-two candidates. Data comes from JMED and Statistical Handbook of Japan 2018. *p<.1; **p<.05; ***p<.01.

Table A.5: Mayoral Elections With and Without Older Candidates

	At Least One Candidate 70 and Over					
	Yes		No		Difference in Means	
	A	SD(A)	B	SD(B)	A–B	SE(A–B)
Municipality						
Population (thousands)	65.9	(187.2)	78.1	(197.1)	−12.2*	(6.569)
% Under 15	0.122	(0.025)	0.125	(0.023)	−0.003***	(0.001)
% 15 to 64	0.585	(0.056)	0.591	(0.054)	−0.006***	(0.002)
% 65 and Over	0.293	(0.074)	0.284	(0.071)	0.009***	(0.003)
Region						
Hokkaido	0.061	(0.239)	0.104	(0.305)	−0.043***	(0.009)
Tohoku	0.130	(0.337)	0.131	(0.338)	−0.001	(0.012)
Kanto	0.194	(0.395)	0.179	(0.383)	0.015	(0.014)
Chubu	0.209	(0.406)	0.177	(0.382)	0.032**	(0.014)
Kansai	0.134	(0.341)	0.131	(0.338)	0.003	(0.012)
Chugaoku	0.069	(0.253)	0.062	(0.241)	0.007	(0.009)
Shikoku	0.053	(0.223)	0.057	(0.231)	−0.004	(0.008)
Kyushu and Okinawa	0.152	(0.359)	0.160	(0.367)	−0.008	(0.013)
Election						
Year	2011.4	(4.04)	2010.8	(3.77)	0.556***	(0.138)
Contested	0.754	(0.431)	0.634	(0.482)	0.119***	(0.015)
Winning Vote Share	0.617	(0.099)	0.610	(0.095)	0.007**	(0.004)
Municipalities	734		1,712		1,741	
Prefectures	47		47		47	
Elections	1,007		4,763		5,770	

Notes: Mayoral elections with and without at least one candidate 70 years old or older among the top-two candidates. Data comes from JMED and Statistical Handbook of Japan 2018. *p<.1; **p<.05; ***p<.01.

Table A.6: Balance Checks for Pre-Treatment Covariates (Younger Candidates)

	Mayors Under 50 vs. Mayors 50 and Over			
	RD Estimate	SE	Bandwidth (h)	N
Population	−55,906.615	(71,734.268)	0.108	451
% Under 15	−0.006	(0.006)	0.065	283
% 15–64	−0.010	(0.010)	0.078	336
% 65 and Over	0.016	(0.015)	0.072	307
Daycare Centers	−1.200	(9.816)	0.096	358
Elderly Care Centers	−0.231	(2.459)	0.091	367
Child Welfare	−428,275.877	(472,195.838)	0.087	375
Subsidies	−47,871.675	(120,858.774)	0.091	400
Investment	−147,854.584	(137,597.541)	0.089	386
Elderly Welfare	−303,879.249	(399,381.132)	0.089	355
Subsidies	−102,200.548	(117,551.418)	0.101	432
Investment	−155,361.376	(176,999.776)	0.091	394
Total Expenditures	-26,272,664.591	(30,132,453.642)	0.107	448

Notes: All RD 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 A.7: Balance Checks for Pre-Treatment Covariates (Older Candidates)

	Mayors 70 and Over vs. Mayors Under 70			
	RD Estimate	SE	Bandwidth (h)	N
Population	−13,976.508	(17,290.628)	0.095	346
% Under 15	0.004	(0.006)	0.070	269
% 15–64	0.002	(0.012)	0.078	298
% 65 and Over	−0.007	(0.017)	0.072	274
Daycare Centers	3.667	(5.115)	0.063	216
Elderly Care Centers	0.401	(0.827)	0.073	261
Child Welfare	140,914.584	(171,999.863)	0.050	205
Subsidies	23,261.376	(71,567.700)	0.053	212
Investment	−26,988.021	(40,285.409)	0.068	260
Elderly Welfare	48,031.011	(76,381.280)	0.041	161
Subsidies	−14,434.017	(17,252.429)	0.077	293
Investment	13,093.879	(22,372.780)	0.057	223
Total Expenditures	7,394,180.518	(8,794,621.782)	0.065	251

Notes: All RD 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.

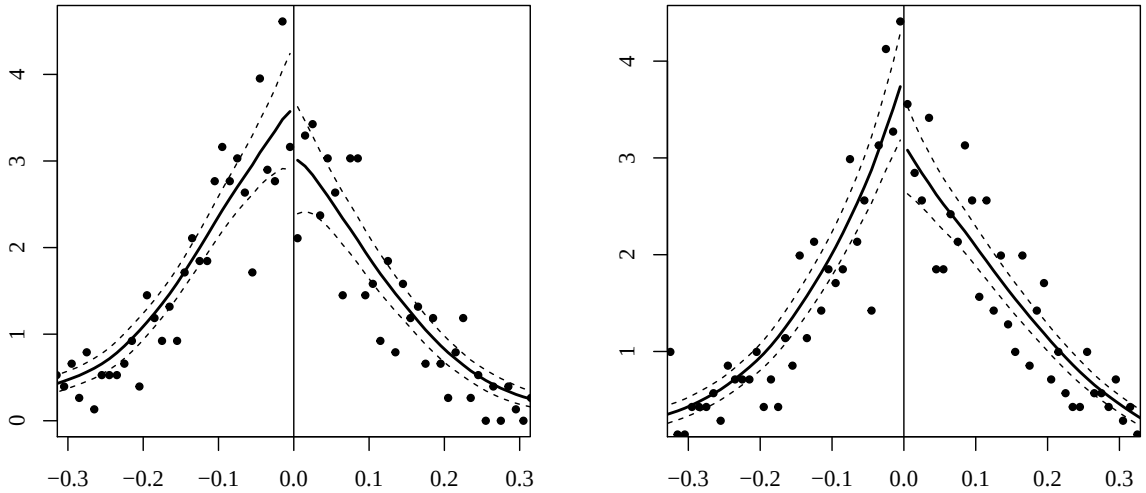


Figure A.3: McCrary Density Tests for RDDs

Notes: Panel (a) shows the density of the candidate under 50's vote share is continuous at the threshold (estimate: -0.172, standard error: 0.16). Panel (b) similarly shows that the density of the candidate 70 and over's vote share is continuous at the threshold (estimate: -0.206, standard error: 0.15).

Table A.8: Summary Statistics for Regression Discontinuity Analysis (Younger Candidates)

	Mean	SD	Min	Max	N
Candidate Under 50's Vote Margin	−0.018	(0.145)	-0.424	0.440	759
Δ Child Welfare	0.144	(0.541)	-2.070	3.188	759
Δ Subsidies	0.126	(0.561)	-4.917	2.621	759
Δ Investment	0.230	(1.722)	-6.229	6.115	759
Δ Elderly Welfare	−0.074	(0.513)	-2.588	2.262	759
Δ Subsidies	−0.053	(0.419)	-2.961	3.076	759
ΔInvestment	0.019	(1.049)	-3.959	3.940	759

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.

Table A.9: Summary Statistics for Regression Discontinuity Analysis (Older Candidates)

	Mean	SD	Min	Max	N
Candidate 70 and Over's Vote Margin	0.001	(0.152)	-0.449	0.500	708
Δ Child Welfare	0.119	(0.628)	-2.645	3.559	708
Δ Subsidies	0.101	(0.675)	-3.066	3.785	708
Δ Investment	0.147	(1.819)	-7.211	7.679	708
Δ Elderly Welfare	−0.097	(0.573)	-4.667	2.316	708
Δ Subsidies	−0.049	(0.438)	-2.616	2.848	708
Δ Investment	−0.080	(1.185)	-5.868	5.386	708

Notes: Mayoral elections where one candidate is over 70 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.

Table A.10: Mandatory Expenditures Placebo Check (Younger Mayors)

	Effect of Electing a Mayor Under 50			
	RD Estimate	SE	Bandwidth (h)	N
Child Welfare				
Δ Social Assistance	0.017	(0.048)	0.074	297
Δ Personnel	0.028	(0.047)	0.061	251
Elderly Welfare				
Δ Social Assistance	0.053	(0.058)	0.128	459
Δ Personnel	0.001	(0.090)	0.088	353
Δ Transfers	−0.020	(0.043)	0.066	267

Notes: All RD 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 A.11: Mandatory Expenditures Placebo Check (Older Mayors)

	Effect of Electing a Mayor 70 and Over			
	RD Estimate	SE	Bandwidth (h)	N
Child Welfare				
Δ Social Assistance	0.041	(0.057)	0.112	344
Δ Personnel	0.031	(0.053)	0.097	316
Elderly Welfare				
Δ Social Assistance	−0.025	(0.073)	0.097	316
Δ Personnel	−0.005	(0.092)	0.106	332
Δ Transfers	0.033	(0.030)	0.075	257

Notes: All RD 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 A.12: Younger Mayors and Revenues for Social Welfare

	Effect of Electing a Mayor Under 50			
	RD Estimate	SE	Bandwidth (h)	N
Child Welfare				
Δ Total Revenues	0.081	(0.051)	0.076	302
Δ General Resources	0.021	(0.026)	0.087	348
Δ National Treasury Disbursements	0.081	(0.109)	0.078	316
Δ Prefectural Treasury Disbursements	0.063	(0.057)	0.108	418
Δ Local Bonds	1.147**	(0.457)	0.063	258
Δ Other	0.035	(0.122)	0.090	363
Elderly Welfare				
Δ Total Revenues	−0.002	(0.036)	0.074	298
Δ General Resources	−0.001	(0.036)	0.074	298
Δ National Treasury Disbursements	−0.382*	(0.202)	0.061	252
Δ Prefectural Treasury Disbursements	−0.112	(0.165)	0.113	425
Δ Local Bonds	0.317***	(0.117)	0.083	334
Δ Other	0.065	(0.083)	0.094	378

Notes: RD models show the effect of electing a mayor under 50 on the change in logged per capita revenues for child and elderly welfare. All models are estimated using local linear regression, a bandwidth h chosen to minimize mean square error, and standard errors clustered by municipality. *p<.1; **p<.05; ***p<.01.

Table A.13: Older Mayors and Revenues for Social Welfare

	Effect of Electing a Mayor 70 and Over			
	RD Estimate	SE	Bandwidth (h)	N
Child Welfare				
Δ Total Revenues	0.053	(0.037)	0.082	275
Δ General Resources	−0.003	(0.034)	0.105	332
Δ National Treasury Disbursements	0.081	(0.090)	0.089	294
Δ Prefectural Treasury Disbursements	0.018	(0.078)	0.105	332
Δ Local Bonds	0.197	(0.307)	0.121	370
Δ Other	0.048	(0.088)	0.120	369
Elderly Welfare				
Δ Total Revenues	0.007	(0.027)	0.117	355
Δ General Resources	0.039	(0.024)	0.090	298
Δ National Treasury Disbursements	−0.074	(0.176)	0.125	380
Δ Prefectural Treasury Disbursements	−0.060	(0.199)	0.142	407
Δ Local Bonds	−0.068	(0.123)	0.122	375
Δ Other	−0.006	(0.072)	0.150	429

Notes: RD models show the effect of electing a mayor 70 and over on the change in logged per capita revenues for child and elderly welfare. All models are estimated using local linear regression, a bandwidth h chosen to minimize mean square error, and standard errors clustered by municipality. *p<.1; **p<.05; ***p<.01.

Table A.14: Younger Mayors and the Municipal Budget

	Effect of Electing a Mayor Under 50			
	RD Estimate	SE	Bandwidth (h)	N
Expenditures				
Δ Total Expenditures	0.053	(0.035)	0.068	275
Δ General	−0.047	(0.065)	0.100	390
Δ Welfare	0.061**	(0.025)	0.087	348
Δ Child	0.310**	(0.147)	0.080	320
Δ Elderly	0.017	(0.121)	0.072	288
Δ Social	0.071*	(0.037)	0.080	320
Δ Protection	0.090	(0.058)	0.081	323
Δ Disaster	0.087	(0.097)	0.079	317
Δ Sanitation	0.029	(0.052)	0.077	309
Δ Labor	0.072	(0.105)	0.105	411
Δ Agriculture	−0.003	(0.069)	0.096	382
Δ Industry	−0.142	(0.094)	0.103	405
Δ Civil	0.052	(0.055)	0.071	285
Δ Fire	0.003	(0.046)	0.090	364
Δ Education	0.123	(0.090)	0.081	327
Δ Debt	0.051	(0.035)	0.080	320
Revenues				
Δ Total Revenues	0.044	(0.034)	0.070	280
Δ Local Allocation Tax	0.076	(0.086)	0.130	454
Δ Local Taxes	−0.018	(0.014)	0.072	287
Δ National Treasury Disbursements	0.045	(0.088)	0.079	317
Δ Prefectural Treasury Disbursements	0.159	(0.104)	0.106	412
Δ Local Bonds	0.044	(0.125)	0.072	287

Notes: All RD 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 A.15: Older Mayors and the Municipal Budget

	Effect of Electing a Mayor 70 and Over			
	RD Estimate	SE	Bandwidth (h)	N
Expenditures				
Δ Total Expenditures	−0.011	(0.028)	0.104	331
Δ General	−0.094	(0.074)	0.114	350
Δ Welfare	0.006	(0.028)	0.079	269
Δ Child	0.047	(0.120)	0.146	418
Δ Elderly	0.036	(0.113)	0.105	332
Δ Social	−0.041	(0.033)	0.126	381
Δ Protection	−0.041	(0.048)	0.123	375
Δ Disaster	−0.018	(0.149)	0.096	315
Δ Sanitation	−0.016	(0.060)	0.115	352
Δ Labor	0.064	(0.111)	0.099	322
Δ Agriculture	−0.048	(0.080)	0.106	330
Δ Industry	0.001	(0.103)	0.103	330
Δ Civil	0.000	(0.088)	0.126	380
Δ Fire	−0.014	(0.059)	0.104	330
Δ Education	−0.027	(0.088)	0.078	268
Δ Debt	0.002	(0.032)	0.148	421
Revenues				
Δ Total Revenues	−0.016	(0.028)	0.109	340
Δ Local Allocation Tax	−0.119	(0.076)	0.126	374
Δ Local Taxes	−0.021	(0.015)	0.079	269
Δ National Treasury Disbursements	−0.139	(0.125)	0.117	355
Δ Prefectural Treasury Disbursements	−0.173	(0.137)	0.098	317
Δ Local Bonds	0.110	(0.136)	0.112	343

Notes: All RD 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 A.16: Younger Mayors Spend More on Child Welfare (With Controls)

DV:	Δ Child Welfare				Δ Elderly Welfare			
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	.387***	.242**	.317**	.387**	−.060	.060	.053	−.107
	(.146)	(.101)	(.139)	(.195)	(.121)	(.093)	(.113)	(.147)
Bandwidth	.080	.132	.200	.200	.072	.144	.200	.200
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
N	320	515	575	575	287	489	575	575

Notes: RD models show the effect of municipalities electing a mayor under 50 on the change in logged per capita spending on child and elderly welfare from the year before to the year after the election. Controls include incumbency, gender, population, and municipal merger. *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 A.17: Older Mayors Do Not Spend More on Elderly Welfare (With Controls)

DV:	Δ Child Welfare				Δ Elderly Welfare			
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 70 and Over	−.011	.013	.001	.015	−.020	−.028	.051	.092
	(.119)	(.093)	(.151)	(.202)	(.109)	(.086)	(.121)	(.148)
Bandwidth	.146	.292	.200	.200	.103	.206	.200	.200
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
N	418	553	490	490	330	498	490	490

Notes: RD models show the effect of municipalities electing a mayor 70 and over on the change in logged per capita spending on child and elderly welfare from the year before to the year after the election. Controls include incumbency, gender, population, and municipal merger. *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 A.18: Younger Mayors Invest in Child Welfare (With Controls)

	Δ Child Welfare							
DV:	Δ Subsidies				Δ Investment			
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	−.254***	−.223***	−.291***	−.436***	.992**	.651**	.943**	1.246**
	(.096)	(.081)	(.095)	(.112)	(.486)	(.323)	(.431)	(.631)
Bandwidth	.060	.120	.200	.200	.076	.152	.200	.200
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
N	246	437	575	575	303	507	575	575

Notes: RD models show the effect of municipalities electing a mayor under 50 on the change in logged per capita spending on subsidies and investment in child welfare from the year before to the year after the election. Controls include incumbency, gender, population, and municipal merger. *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 A.19: Older Mayors Subsidize Elderly Welfare (With Controls)

	Δ Elderly Welfare							
DV:	Δ Subsidies				Δ Investment			
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 70 and Over	.204***	.194***	.237***	.274***	−.427*	−.463**	−.315	−.188
	(.069)	(.058)	(.074)	(.096)	(.235)	(.182)	(.270)	(.333)
Bandwidth	.120	.240	.200	.200	.091	.182	.200	.200
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
N	300	469	490	490	369	522	490	490

Notes: RD models show the effect of municipalities electing a mayor 70 and over on the change in logged per capita spending on subsidies and investment in elderly welfare from the year before to the year after the election. Controls include incumbency, gender, population, and municipal merger. *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.

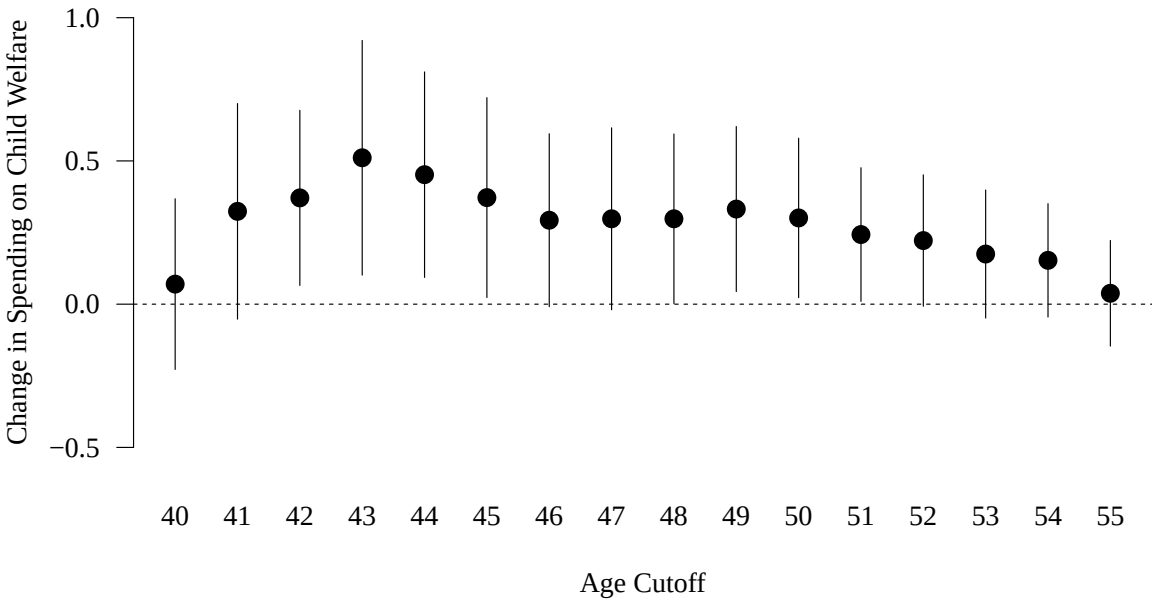


Figure A.4: Robustness to Different Age Cutoffs for Younger Candidates (Child Welfare)

Notes: Coefficient plot shows RD estimates of electing a younger mayor on the change in logged per capita spending on child welfare from the year before to the year after the election for different age cutoffs. All models are estimated using local linear regression, a bandwidth chosen to minimize mean square error, and standard errors clustered by municipality.

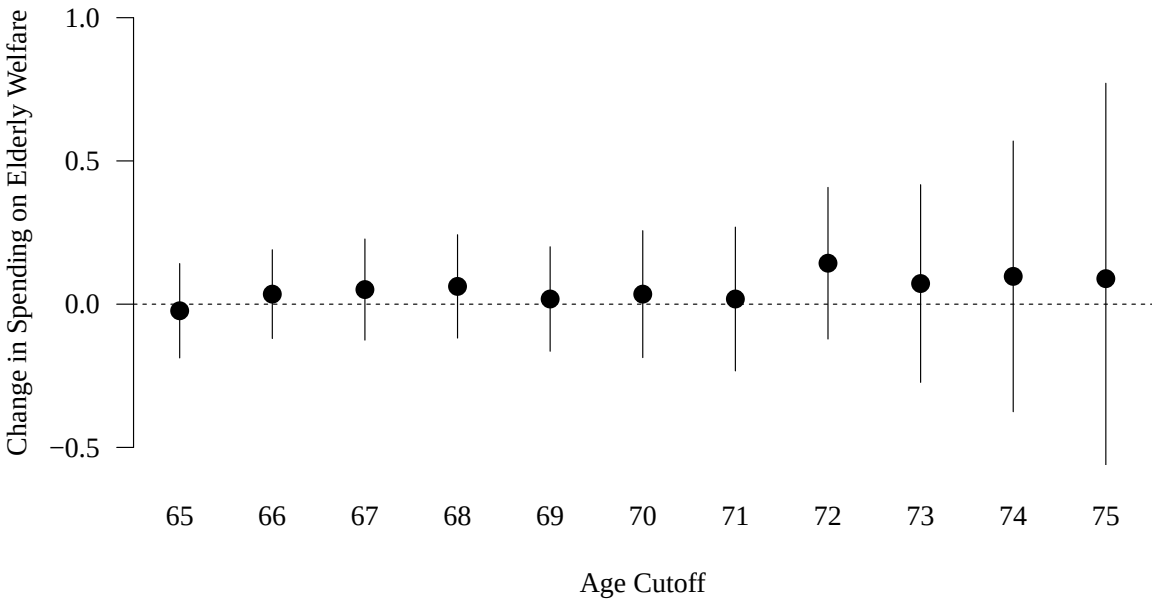


Figure A.5: Robustness to Different Age Cutoffs for Older Candidates (Elderly Welfare)

Notes: Coefficient plot shows RD estimates of electing an older mayor on the change in logged per capita spending on elderly welfare from the year before to the year after the election for different age cutoffs. All models are estimated using local linear regression, a bandwidth chosen to minimize mean square error, and standard errors clustered by municipality.

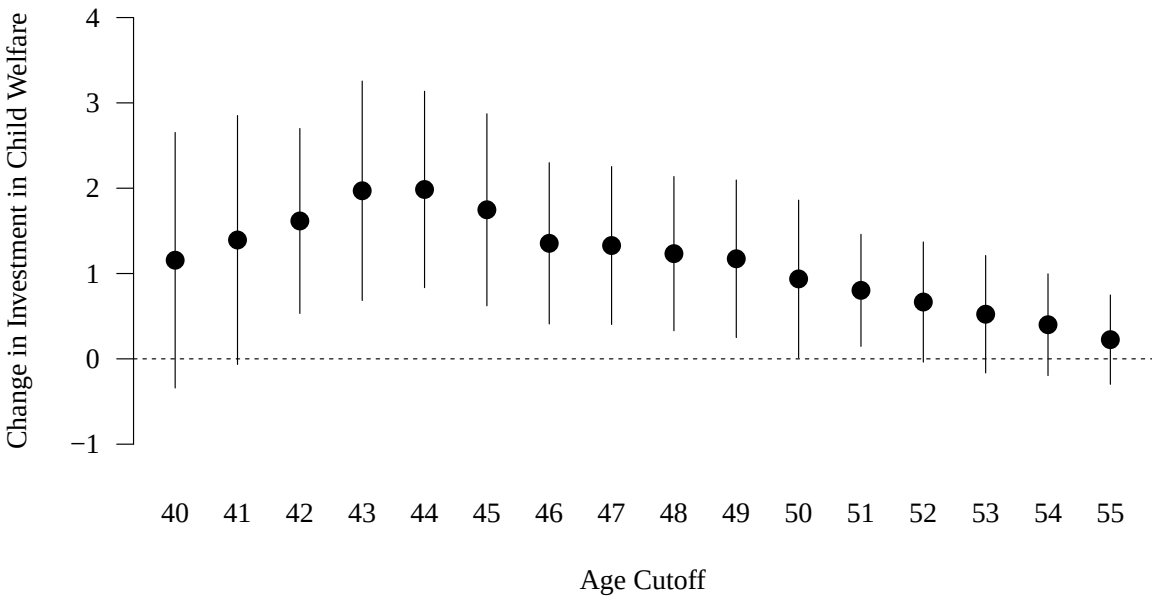


Figure A.6: Robustness to Different Age Cutoffs for Younger Candidates (Investment)

Notes: Coefficient plot shows RD estimates of electing an older mayor on the change in logged per capita investment in child welfare from the year before to the year after the election for different age cutoffs. All models are estimated using local linear regression, a bandwidth chosen to minimize mean square error, and standard errors clustered by municipality.

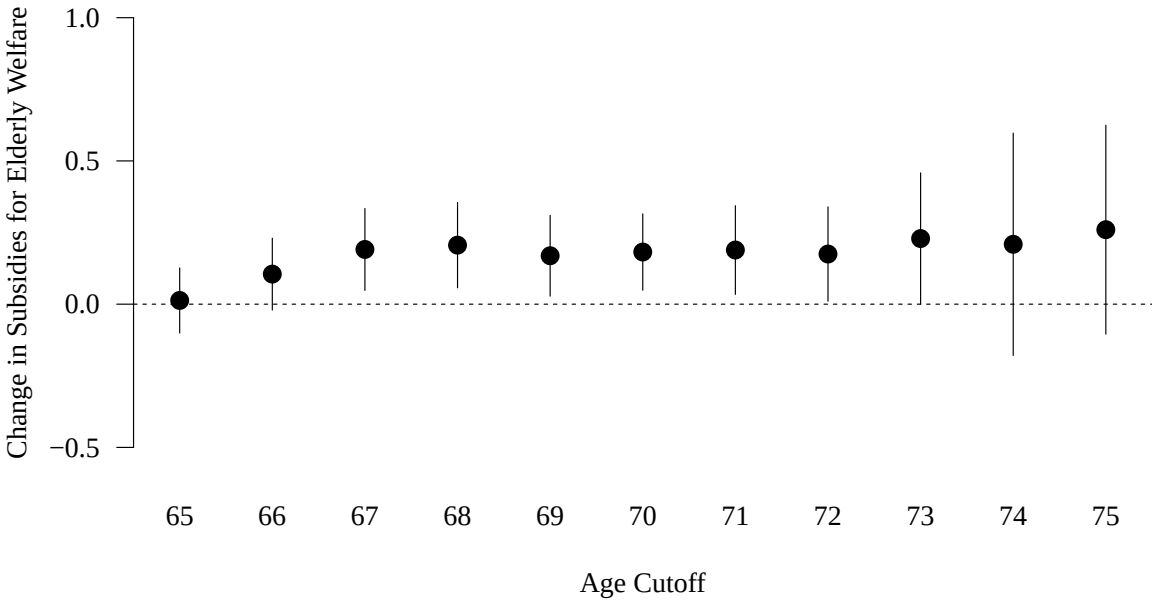


Figure A.7: Robustness to Different Age Cutoffs for Older Candidates (Subsidies)

Notes: Coefficient plot shows RD estimates of electing an older mayor on the change in logged per capita spending on subsidies for elderly welfare from the year before to the year after the election for different age cutoffs. All models are estimated using local linear regression, a bandwidth chosen to minimize mean square error, and standard errors clustered by municipality.

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