

# Can University Education Cultivate Immigrant Integration? The Case of Local Enfranchisement for Foreign Residents in Japan\*

Gento Kato<sup>†1</sup> and Fan Lu<sup>‡2</sup>

<sup>1</sup>*Nazarbayev University*

<sup>2</sup>*Queen's University*

Last Update: September 23, 2020

## Abstract

While there is lively debate on whether higher education cultivates support for admitting foreigners into North America and Europe, there is little discussion on the extent to which this relationship generalizes beyond these continents. In light of Japan's growing reliance on foreign workers to solve its labor shortage problem and the public's divided opinion on integrating foreigners, we examine the relationship between university education and Japanese attitudes toward local enfranchisement for foreign residents. We use matching techniques that incorporate individual attributes as well as residential zip codes to analyze public opinion surveys fielded between 2009 and 2014. Our findings suggest Japanese university education has limited effect on support for enfranchising permanent resident foreigners, and if there is any, it is more visible among females than males. Furthermore, it is mediated through improved attitudes toward Korea, the country of origin for most permanent resident foreigners, rather than attitudes toward China or more liberal political ideology.

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\*Online Appendix for this paper is available from <https://github.com/gentok/ForeignerJapan>.

<sup>†</sup>Gento Kato is an Assistant Professor, Department of Political Science and International Relations, Nazarbayev University, Kabanbay batyr street 53, Nur-Sultan, Kazakhstan ([gento.kato@nu.edu.kz](mailto:gento.kato@nu.edu.kz)).

<sup>‡</sup>Fan Lu is an Assistant Professor, Department of Political Studies, 68 University Ave, Kingston, Ontario, Canada ([fan.lu@queensu.ca](mailto:fan.lu@queensu.ca)).

Debates on immigration are dominated by research set within western contexts. A review of 288 published articles in 55 English-language journals between 1955 and 2011 show the four most prolific countries on immigration research are the United States, Canada, United Kingdom, and Australia (Bilodeau 2016). It is true that these countries are highly desirable destinations, but the issue of immigration is no less relevant for countries like Hong Kong, Singapore, and Japan. Immigrants in popular Asian destinations confront behavioral and institutional biases against the proverbial ‘other’ in much the same way as their counterparts do in North America and Europe. In particular, Japan recently passed a controversial immigration law that aims to attract 345,000 “semiskilled” foreign workers (Denyer and Kashiwagi 2018). To date, there is no concrete plan to integrate foreigners and it remains unclear how Japanese society will promote their presence in the long-term beyond as a workforce. So, given what we know about the effect of university education on pro-immigrant attitudes in some western democracies, to what extent does university education play a role in raising support for immigration among Japanese nationals? Our short answer is ‘not much.’ We provide a longer one in the following pages.

Higher education in North America and Europe has a consistently strong correlation with liberal attitudes toward immigration (Citrin et al. 1997; Hainmueller and Hiscox 2007, 2010) while evidence is mixed if education is a cause or outcome of such attitudes (Lancee and Sarrasin 2015; Cavaille and Marshall 2019). This paper makes three theoretical and methodological contributions to this body of work. First, we demonstrate limitation in applying a western-driven theory of attitude formation to non-western contexts, even for something as seemingly universal as education. To the extent university education has any effect on support for immigration in Japan, the effect is more visible among females and operates through different mechanisms. Second, we show how Japanese attitudes toward Korea and China mediate (and liberal ideology does not mediate) the effects of university education. Third, we use a novel method of geographic distance adjusted matching (Keele, Titiunik, and Zubizarreta 2015) to filter out the selection effects of geographic contexts (Branton and Jones

2005; Oliver and Mendelberg 2000) and indirectly account for geographic sorting based on pre-university socialization (Kustov, Laaker, and Reller, Forthcoming; Maxwell 2019, 2020).

The rest of the paper are as follows: we review scholarship on how university education shapes attitudes towards immigrants in North America and Europe, then discuss how this relationship may be different in Japan. We test our theoretical expectations using two Japanese public opinion surveys, followed by a discussion of limitations and extensions of this paper.

## Existing Evidence on Immigration and University Education

In empirical studies based on North America and Europe, there is consistent evidence on the correlation between university education and willingness to admit and integrate immigrants (Citrin et al. 1997; Hainmueller and Hiscox 2007, 2010, but see Hainmueller and Hopkins 2015). Evidence on the causal effects of education is less consistent. On one hand, using six compulsory education reforms that occurred in Europe as an instrument of education in regression discontinuity design, Cavaille and Marshall (2019) find additional years in secondary education decreases anti-immigration attitudes and suggest this relationship is indeed causal. On the other hand, Lancee and Sarrasin (2015) tracks Swiss youth’s willingness to grant equal rights to immigrants as they progress through schooling and find little within-individual change in attitudes.

Setting empirics aside for the moment, theoretically, why might education increase support for immigration? One explanation is the greater financial security and skills afforded by obtaining a higher degree, especially university degree. Since high-skilled native workers do not have to directly compete with immigrants—especially when a majority of immigrants are expected to be low-skilled—they may be less threatened by their presence (Scheve and Slaughter 2001; Mayda 2006). While intuitive, empirical evidence is not always consistent with this view (Hainmueller and Hopkins 2014). For example, Hainmueller and Hiscox (2010) conducts a survey experiment and show university education increases support for

both high-skilled and low-skilled immigration.

Perhaps a more convincing explanation lies in perception toward the sociotropic influence of immigrants (Chandler and Tsai 2001; Card, Dustmann, and Preston 2012; Hainmueller and Hopkins 2014). This mechanism rests on at least three expectations regarding educational content and student experience at university. Firstly, within classrooms, professors may pass on their ideological views to students. Here it is known that professors in western universities tend to be left-leaning (Gross and Simmons 2014; Langbert, Quain, and Klein 2016) and this tendency is particularly consistent in the issue of immigration (Werfhorst 2020). Secondly, the learning process in university education may promote positive views toward cultural diversity. Even if professors leave personal views out of classrooms, or if curriculum have nothing to do with social attitudes (for example, math and engineering courses), the “cognitive verbal proficiency and sophistication” (Nie, Junn, and Stehlik-Barry 1996, p.180) required in higher education emphasize the importance of open discussions and taking diverse opinions into account. This type of learning process can have a direct positive effect on students’ valuation of immigrants. Lastly, both in and outside of classrooms, university experience is expected to foster immigrant acceptance by reducing social distance between natives and foreigners (Sigelman and Welch 1993; Welch and Sigelman 2000). University coursework, dormitories and campus organizations provide opportunities for students to meet and mingle with people from different backgrounds. These social contacts lead to friendships (or at least, reduces negative stereotypes) between natives and foreigners, which encourages the former to become more supportive of immigration.

The mechanisms described above provide insights on how university education shapes attitudes toward immigration in western democracies. However, if “education system is the primary vehicle through which the ‘official’ or ‘ideal’ culture is transmitted to citizens” (Phelan et al. 1995), surely what is considered official or ideal changes across time and space. If liberal values, learning pedagogy and social contact are mechanisms driving the relationship between education and liberal immigration attitudes, then this relationship ought to

become more muted in contexts where these mechanisms are suppressed. We turn now to a discussion of universities and immigration in Japan.

## Immigrant Integration and University Education in Japan

The word ‘immigrant’ carries a different connotation in Japan than it does in western countries. While immigrants in the west are associated with ‘visible minorities’ marked by language, physiognomy, and/or phenotype, the marginalization of immigrants in Japan is largely “invisible”, an internal struggle that lies in the underbelly of the “homogeneity myth” (Tamura 1983). The first wave of Korean (and to a lesser extent, Taiwanese) immigrants in Japan trace their roots to the pre-WWII period.<sup>1</sup> Many adopt “tsumeï” (Japanese style names) and once they become fluent in Japanese, are not outwardly different from the natives. On the other hand, since Japan determines nationality strictly by parentage and naturalization, children of those first-wave immigrants are legally classified as ‘immigrants’ with special permanent resident status<sup>2</sup> even though they are born and raised in Japan. By the end of 2019, about 2.93 million foreigners live in Japan, most of whom are permanent residents, followed by technical intern trainees on short term visas (Itabashi 2020). Most foreign residents live in large metropolitan areas such as Tokyo, Aichi and Gunma (Mizuho Research Institute 2018). Since 2007, Chinese took over Koreans as the largest foreign group, generating controversy as “neo-Chinatowns” spilled beyond traditional ethnic neighborhoods (Schreiber 2018). They also form the largest group of regular permanent residents, though *Zainichi* Koreans still dominate in the total of special and regular permanent resident status (Tai 2006; Surak 2008; Day 2009).

The Japanese government promotes a policy to increase admission of immigrants but this policy does not come in tandem with plans to integrate them into Japanese society (Morita

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1. Since there were no North or South Korea in pre-WWII, first-wave Korean immigrants often identify themselves with Korea as a whole.

2. Specifically, special permanent resident status was granted for those who previously hold Japanese citizenship prior to the independence of South Korea, North Korea, and Taiwan. Special permanent residents generally receive more benefits than regular permanent residents, but not voting rights.

2017). Japan is one of only two Asian countries ranked by the 2015 Migrant Integration Policy Index (MIPEX). Based on eight indicators of integration—labor market mobility, family reunion, health, education, political participation, permanent residence, access to nationality and anti-discrimination—Japan ranks 27 out of 38 countries while South Korea ranks 18. It scores higher on measures of labor market mobility, but low on measures of long-term pathways to becoming a permanent part of Japanese society. A recent example of the foreign residents’ tenuous position is that in response to COVID-19, foreign students and even permanent residents were denied entry into Japan. For comparison, U.S. President Donald Trump tried to implement a similar policy but could not due to widespread protests. Even when they are allowed to enter the country, Japan implements one of the most restrictive immigration policies in developed democracies. Barriers to attaining permanent residence and citizenship in Japan are particularly high, and it essentially grants no non-citizen voting rights at any level of elections (Justwan 2015, Table 1).<sup>3</sup> This contrasts to countries like Sweden, the Netherlands and Belgium where local voting rights are granted to non-citizens, and evidence points to higher levels of political trust, higher levels of political participation, and stronger ties with the host country among non-citizens (Martiniello 2006; Munro 2008).

Historically, the demand for non-citizen’s voting rights in Japan has been made by the population of *Zainichi* Koreans. Given the contentious history between Japan and Korea, the end goal of political integration for *Zainichi* Koreans has never been to obtain Japanese citizenship, but to advance their status as foreigners in Japan (Kashiwazaki 2013). Bills to give local suffrage to foreigners with permanent resident status have been submitted to the Diet several times, especially after diplomatic pressure by the South Korean government in 2000 (Chung 2010). However, those bills never achieved enough support for deliberation on the floor because conservative politicians in the Liberal Democratic Party (LDP), the long-standing ruling party of Japan, express concerns that permanent resident foreigners, specifically *Zainichi* Koreans, may betray Japanese national interests if they can participate

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3. Several municipalities in Japan allow non-citizens to vote in the local referendum, but the outcome of local referendum has no legal binding authority.

in (any level of) Japanese politics (Strausz 2010).

In terms of university education in Japan, the connection to political attitudes/behaviors is not always consistent with findings in western countries. For example, political participation in Japan was negatively related to levels of education in the 1980s (Kabashima 1988), though this relationship changes overtime (Sakaiya 2013). For willingness to admit foreigners, correlational result from the experiments conducted by Kage, Tanaka, and Rosenbluth (2018a, 2018b) provide mixed evidence. They show college education in Japan is associated with willingness to admit foreigners due to both economic needs and cultural diversity. However, they also find college education “does not increase the likelihood that Japanese respondents appreciate immigrants solely for economic or cultural reasons” (Kage, Tanaka, and Rosenbluth 2018b, 2). In essence, these results suggest college education increases willingness to admit foreigners only when the enhancement of cultural diversity are bundled together with economic needs. Given this caveat, it is possible that previous expectations regarding the connection between university education and positive attitudes toward immigrants—liberal-leaning professors, process-oriented learning pedagogy, and the reduction in social distance between natives and immigrants through social contact—may not hold under the Japanese context.

First, there is little systematic evidence regarding Japanese university professors being (or perceived as) proponents of liberal ideology. For example, Azuma, Murata, and Kakeya (2010) machine-coded political ideologies of department chairs’ messages in top Japanese university websites through supervised learning. The results show that significant portions of those messages are in fact conservative, especially in the field of natural science and engineering. Also, a survey conducted by (Tarohmaru 2018) shows that the positive perception towards Japanese Academia does not strongly or consistently correlate with liberal ideology of respondents. In addition, ethnographic works on the experience of non-Japanese faculties show that non-Japanese professors in Japanese universities are socially and institutionally segregated (Whitsed and Wright 2011; Poole 2005). These evidence suggest not

many Japanese professors likely hold progressive views, much less pass on such views to students.

Similarly, learning pedagogy that facilitates diversity of opinions and open discussions may play a weaker role in Japan. Whitsed and Wright (2011) conduct interviews with foreign English teachers and suggest Japanese university education is mostly for ‘show’ rather than genuine learning. After working hard in high schools and *jukus* (cram schools) to get into universities, students tend to view universities as a “relaxing time before they have to go into society.” Granted, anyone walking past a sorority or fraternity house would also question the priorities of American students, but the “culture of indifference” and “the student is the customer” seem to spillover into Japanese professors’ approach to teaching as well. Instead of focusing on learning discourse that leads to appreciation of diverse opinions and characters, they go through rote motions of taking attendance and administering quizzes (McVeigh 2002).

Relative to the influence of professors and learning pedagogy, social contact with foreigners may play a stronger role in how Japanese university experience shapes immigration attitudes. In a homogeneous society like Japan, university is a particularly important channel to learn about and acquaint with foreigners in social settings because people rarely have those opportunities in their daily lives. Since relatively few foreigners enroll in primary/secondary schools, universities are probably the first institutions that provide multiple opportunities for Japanese nationals to interact with foreigners, both as classmates and as instructors (Green 2019). In addition, a corollary of less academic rigor is an intense focus on social activities such as “bu” (teams) and “sakuru” (cicles) (Baseel 2015; Vogel 2018).

There is an important caveat to this social contact mechanism in Japan: there is a sizable gender discrepancy in types of study pursued by students. Females are more likely to enroll in humanity programs such as global studies, communications, or linguistics, the programs in which the majority of foreign students are enrolled, and less likely to pursue such fields as math, science, and engineering (Cabinet Office, Government of Japan 2018; Japan



Table 1: Theoretical expectations on how university education affects public opinion on immigration under western and Japanese contexts

North America and Europe	Japan
· <b>University professors</b> pass on liberal views to students.	⇒ Potentially <b>weaker</b> . Little evidence regarding liberal political ideology of Japanese professors.
· <b>Learning pedagogy</b> increases the support for diversity.	⇒ Potentially <b>weaker</b> . Less focus on learning process rather than outcomes.
· University provides opportunities for <b>positive social contact with foreigners</b> .	⇒ Potentially <b>gendered</b> . Females are more likely than males to enroll in humanity and social studies fields in which the majority of foreigners are enrolled.

Student Services Organization 2019). This pattern can in part be attributed to different societal expectations on females versus males, but institutional biases play a role as well. For example, in 2018, Tokyo Medical University was found guilty of boosting male enrollment by giving them additional scores on entrance tests, and a subsequent Education Ministry survey discovered for about 80% of eighty-one medical universities, male applicants' success rate was significantly higher than that of females (Shirakawa 2019). For whichever reason, this gendered university experience may result in stronger relationships between university education and support of enfranchisement among *female* rather than male graduates. Female students may have more classmates who are foreigners, as well as more opportunities to interact with them in social settings.

**Table 1** summarizes our discussions above. The left column summarizes three explanations for why university education increases pro-immigrant attitudes in western countries. The right column extends these mechanisms to the Japanese context. Here, the influence of both professors and learning pedagogy are expected to be weaker in Japanese universities. Additionally, male students may have less opportunities to socially interact with foreigners. Therefore, all things equal, among Japanese males, university education should not have a significant effect on support for enfranchisement of foreign residents. We formalize this expectation with the following hypothesis:

H1: Japanese males with university degrees are not more supportive of granting suffrage to permanent resident foreigners than Japanese males with high school degrees at most.

However, since female Japanese university graduates are expected to have more opportunities than male students for socialization with foreigners, we expect university education to increase support for granting suffrage among Japanese females.

H2: Japanese females with university degrees are more supportive of granting suffrage to permanent resident foreigners than Japanese females with high school degrees at most.

To the extent university education has any effect on support for granting suffrage, three additional hypotheses can be derived from our theoretical argument. First, unlike western universities, not-so-liberal professors and outcome-oriented learning pedagogy may not lead students to have more liberal political values. In other words, the effect of Japanese university education on views towards immigrant integration, if any, should not be mediated by ideological beliefs.

H3A: The effect of Japanese university education on support for granting suffrage to permanent resident foreigners is *not* mediated by liberalization in political ideology.

Second, permanent residents' local suffrage in Japan is perceived to be an issue owned by *Zainichi* Koreans. Therefore, if Japanese university education has any effect on the opinion towards foreigner enfranchisement, we expect attitudes toward Koreans to mediate this effect.

H3B: The effect of Japanese university education on support for granting suffrage to permanent resident foreigners is mediated by more positive feeling toward Koreans.

Finally, although Chinese immigrants do not ‘own’ the issue of local suffrage, their growing population size and majority status in the category of regular permanent residents make them another relevant group for the issue of foreigner enfranchisement. Therefore we expect attitudes toward Chinese to mediate the effect of university education as well.

H3C: The effect of Japanese university education on support for granting suffrage to permanent resident foreigners is mediated by more positive feeling toward Chinese.

In summary, H1 tests the hypothesis university education has no effect on support for granting suffrage to permanent resident foreigners among males in Japan. H2 tests for the possibility any effects are driven by females. H3A, H3B, and H3C test our explanations as to *how* university education shapes support for foreigner suffrage in Japan. We turn next to discuss the way we test these hypotheses.

## Data and Empirical Strategy

Our primary datasource is the Survey on the Image of Foreign Countries and Current Topics (SIFCCT).<sup>4</sup> SIFCCT is a collection of online surveys conducted every month from October 2011 to September 2013. Each month, approximately 2000 respondents are newly sampled from a pool of online survey monitors. These respondents are registered at the survey organization, Nikkei Research, and sampling takes account of balance in distribution of gender and age cohorts (i.e., 20s, 30s, 40s, 50s, and 60s or over) according to the Japanese census. With over 50000 respondents in total, the large sample nature of SIFCCT allows us to generate precise estimates.

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4. Data of the Survey on the Images of Foreign Countries and Current Topics (data depositor: Waseda University Research Institute of Contemporary Japanese Systems), was provided by the Social Science Japan Data Archive (SSJDA) of the Tokyo University Institute of Social Science. The authors of this research are responsible for all analyses of the data, and neither the researchers who collected these data nor the SSJDA which distributes it carry any responsibility. The original datasets are available from SSJDA website (<https://csrda.iss.u-tokyo.ac.jp/en/>), survey number 0979 and 0980.

We account for residential contexts of respondents since both explanatory (educational attainment) and outcome (support for granting suffrage to foreigners) variables are likely to be correlated with where respondents live (Ceobanu and Escandell 2010; Hainmueller and Hopkins 2014; van Heerden and Ruedin 2019), or where they *choose* to live (Kustov, Laaker, and Reller, [Forthcoming](#); Maxwell 2019, 2020). In both cases, absence of contextual variables may lead to omitted variable bias, but for different reasons. In the first case, a student who attends university located in a rural town (or cosmopolitical city) might change her views towards foreigners due to her residential experiences outside of the university. In the second case, the same student might be motivated to attend university because of parents who socialized her on the importance of university education as well as shaped her attitudes toward foreigners. We do not have measures of pre-university socialization experiences, but since they are correlated with both the choice to attend university and the choice of where to live, accounting for contextual variables is an indirect way of controlling for the selection effects of university attendance.

There are various models for incorporating contextual variables, such as hierarchical linear models and fixed effects models (Gelman and Hill 2007). However, the process of determining how many and which kinds of geographic contexts to include in these models is arbitrary and often driven by data availability. For example, just because researchers have data on say, the racial composition of a neighborhood, does not mean including it will solve omitted variable bias. Results may still be vulnerable to omitted variable bias if the key missing variable is not in fact, racial composition of a neighborhood. In this paper, we use geographic distance adjusted matching (Keele, Titunik, and Zubizarreta 2015) to directly control for *all* potential geographic confounders. SIFCCT contains zip code provided by a majority of respondents.<sup>5</sup> Using this zip code information, geographic distance adjusted matching finds matched pairs who live close together, instead of relying on the inclusion of all possible contextual variables. As robustness checks, we generate education effect estimates

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5. Zip code data in SIFCCT are not published through SSJDA and available from the authors upon request.

from datasets that are unmatched, matched without distance adjustment, and matched with distance adjustment.

SIFCCT also includes questions that allow us to assess the causal mediation effects of education. For H3A, the mediating variable is political ideology. This variable is measured by asking respondents to self-identify their ideological position on a 10 point scale with 0 being the most progressive and 10 being the most conservative. For H3B and H3C, the mediating variables are feelings toward Koreans and Chinese. The closest proxy in the SIFCCT are thermometer ratings of feelings towards South Korea and China, such that 0 is the coldest and 100 is the warmest.<sup>6</sup> Both ideology and thermometer ratings of South Korea/China are rescaled to 0-1 in our analyses.

In spite of the advantages of SIFCCT, a well-known limitation of online surveys is their representativeness of the broader population (e.g. Cornesse and Bosnjak 2018). Therefore, we supplement analysis on unmatched SIFCCT with analysis of the UTokyo-Asahi Survey (UTAS). This dataset is a collection of voter surveys fielded immediately after national elections in 2009, 2012, and 2014.<sup>7</sup> In contrast to SIFCCT, UTAS selects respondents by probability sampling of registered voters' list and collects responses by mail questionnaire. Thus, UTAS uses a more representative sampling frame than SIFCCT. However UTAS has only one tenth of SIFCCT's sample size, and does not include variables on respondents' political ideology, feelings toward South Korea/China, and residential zip codes. Thus, we cannot test the robustness of our findings for H3A-C using UTAS, nor can we replicate geographic distance adjusted matching with UTAS. What we can do is present UTAS results on H1 and H2 to explore—to some extent—the generalizability of results obtained from SIFCCT.

Our key explanatory variable is respondents' level of educational attainment, coded as

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6. We do not use thermometer ratings of North Korea since attitudes towards North Korea may involve a more complex set of considerations than ethnicity.

7. UTAS is maintained by Masaki Taniguchi of the Graduate Schools for Law and Politics, the University of Tokyo and the Asahi Shimbun. The original datasets are available from the survey website (<http://www.masaki.j.u-tokyo.ac.jp/utas/utasindex.html>). 2009, 2012, and 2014 waves are chosen based on the availability of a question regarding the local suffrage of foreigners.

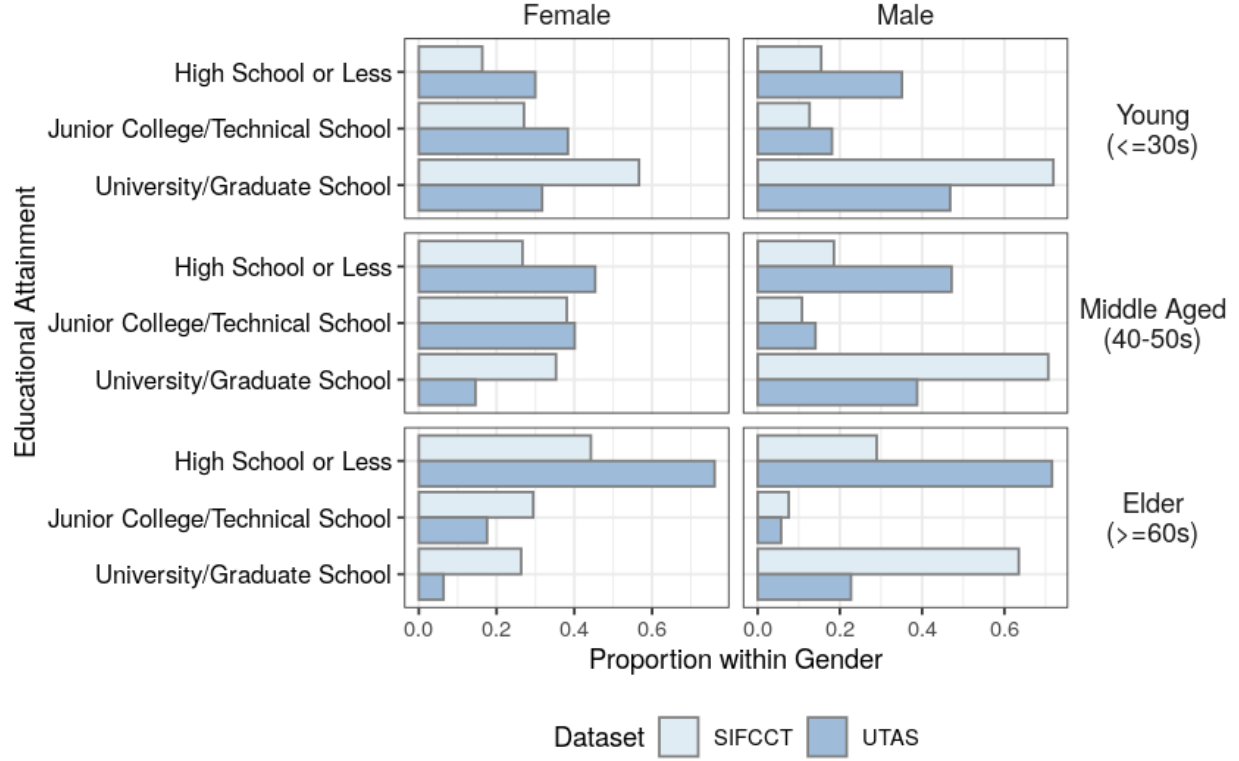


Figure 1: The distribution of respondents’ level of educational attainment by gender.

“high school or less,” “junior college or technical school” and “university or graduate school.” **Figure 1** shows the distribution of education in each survey by gender and age cohort (i.e., trichotomous variable with 20 to 30s, 40 to 50s, and 60s or over). There are two takeaways from **Figure 1**. First, SIFCCT respondents attain higher levels of education than UTAS respondents. The light blue bars for SIFCCT are shorter than dark blue bars for UTAS in the “high school or less” category across all age cohorts, and they are longer than dark blue bars in the “university/graduate school” category across all age cohorts. This educational difference across surveys may be attributed to the fact that SIFCCT respondents are drawn from online samples, and justifies our choice to supplement SIFCCT results with UTAS in order to reach out to different socioeconomic strata of the Japanese public. The second takeaway from **Figure 1** is that both surveys show gender inequalities in education attainment: females are less likely than males to earn university or graduate school degrees. In the following analysis, we focus on the contrast between those who finished university or more

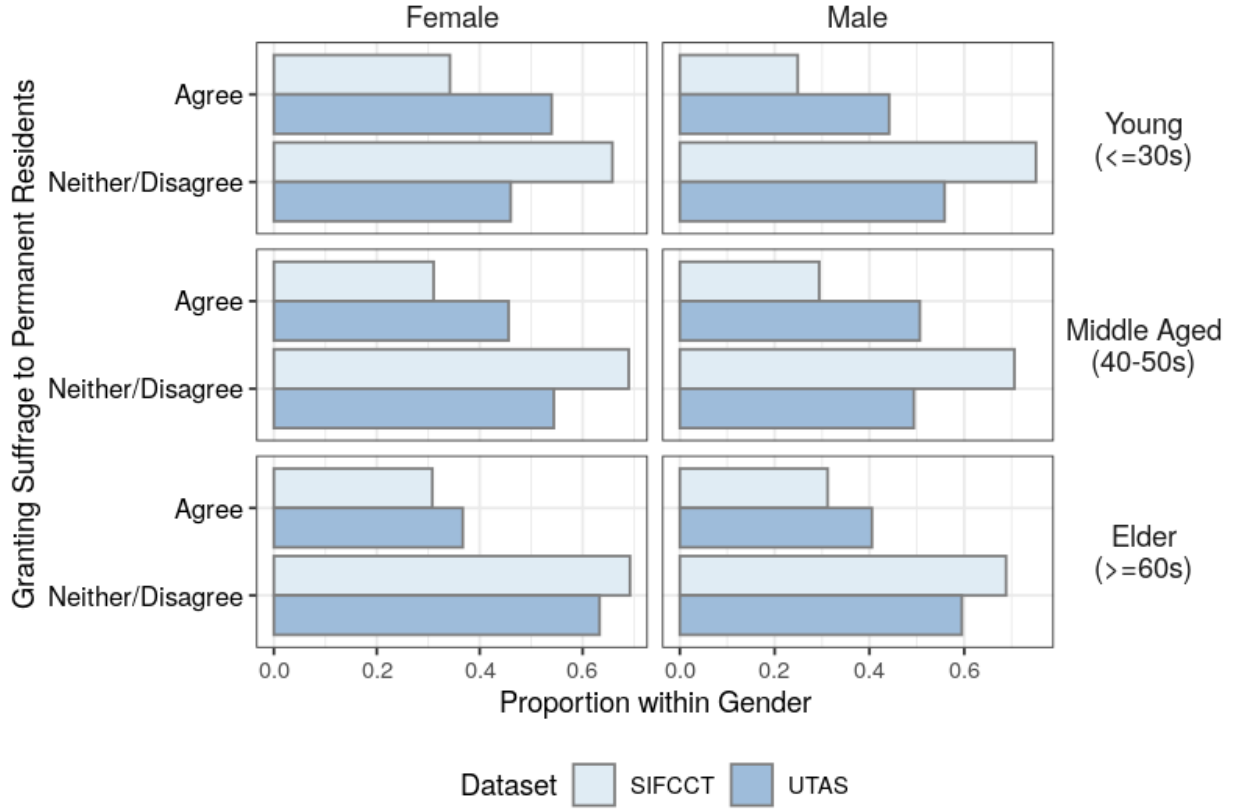


Figure 2: The distribution of Japanese attitudes toward granting a suffrage by gender.

and those who finished high school or less. We exclude junior college and technical school graduates since we do not have enough information on how their educational outcomes and experiences compare with universities. Therefore, the education variable in the following analysis is a binary variable with 1 indicating university education or more, 0 indicating high school or less.

Our outcome variable is support for regional suffrage of permanent resident foreigners. SIFCCT asks respondents if local election suffrage should be granted to permanent resident foreigners. The responses are recoded to “agree” (originally strongly agree or agree), and “neither/disagree” (originally neither, disagree and strongly disagree).<sup>8</sup> UTAS also asks the question with almost identical wording. In our analysis, responses are recoded to binary

8. Those who answered “don’t know” are recoded as “neither/disagree.” Those who skipped the question are dropped from the analysis.

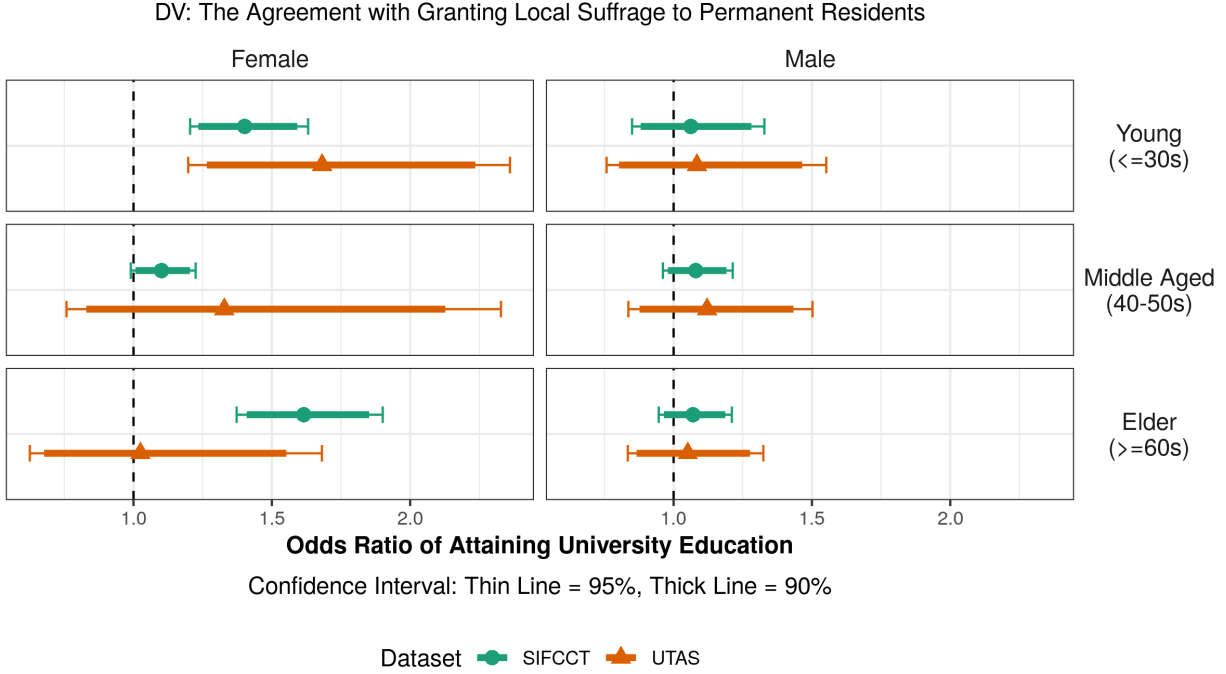
response with ‘agree’ (originally agree or rather agree), and “neither/disagree” (originally neither, rather disagree and disagree) to simplify inference. Analysis using the full set of response categories suggests that current results are robust to alternative specifications. In fact, it shows that this split (i.e., agree versus neither/disagree) has the most important implication<sup>9</sup>. **Figure 2** shows UTAS respondents are significantly more likely to support the policy than SIFCCT respondents. On the other hand, in both surveys, no significant differences in “agree” exist between genders.

Independent of political ideology, higher education may correlate with attitudes toward acceptance of foreigners through higher level of political knowledge. Knowledgeable respondents can be more accepting of immigrants not because they are more tolerant, but because of knowledge about economic and labor demands. We control for political knowledge to filter out this possibility. Political knowledge in SIFCCT is measured by the sum of correct answers to six factual test question about international issues (see Online Appendix for the detail). The score is rescaled to be distributed between 0 and 1, with 0 being no correct answers and 1 being all correct answers. UTAS does not offer factual test questions but asks respondents to self-assess their own knowledge levels. The five category responses from “I think I don’t know much” to “I think I know a lot” are rescaled in 0-1 range (i.e., higher score implies higher level of self-assessed knowledge). For all models, we also include as covariates age cohort (i.e., trichotomous variable with 20 to 30s, 40 to 50s, and 60s or over), evaluation of Japanese economy, employment status, and fixed effects of survey year or month. For SIFCCT, we additionally control for political interests, income levels, and length of residence at the current address. All ordered variables are rescaled to range between 0 and 1.

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9. Specifically, we run the general version of ordered/cumulative logit that partially relaxes the proportional odds assumption. The result shows that education *does not* move respondents from neither to disagree, but *does* move them from neither to agree. See Online Appendix for details





Models are estimated by logit, standard errors are clustered by prefectures..  
Each model is estimated within each gender subset of each dataset. All models include knowledge, political interest (only SIFCCT), employment, economic evaluation, income (only SIFCCT), and wave/year fixed effects as controls. See Appendix for the detailed tables.

Figure 3: Comparing SIFCCT and UTAS for the effect of university education on the support for granting suffrage to permanent residents using unmatched data

## Comparing Results from Unmatched SIFCCT and UTAS Data

As the first step of analysis, we estimate the effect of university education attainment on opinion towards foreigners' suffrage using unmatched datasets. Each model is estimated within gender subset using the full set of covariates as described in the previous section. Standard errors are clustered by prefecture levels in all of the following statistical tests. Given the dichotomous formulation of the outcome variables, we implement logistic regressions to estimate the outcome model. To incorporate concern that respondent characteristics may differ across generations, we include interactions between education and age cohort in all models.

Figure 3 shows main results using unmatched data. We plot conditional odds ratio of education by age cohort extracted from models estimated within each gender subset of each survey. Thick lines around the point estimates indicates 90% confidence intervals, and thin

lines indicate 95% confidence intervals. Odds ratios are exponential of logit coefficients and can be interpreted directly as how many times more likely a respondent agree with granting local suffrage to permanent residents, given that the educational attainment increase from high school or less to university or more. Odds ratios of control variables are suppressed from the plot (see Online Appendix for their coefficients). Two tendencies are apparent. First, in support of H1, education does not have a substantive effect on opinion regarding suffrage for foreign residents among males of any age cohort. Confidence interval of all odds ratios crosses 1, meaning the effect is not statistically significant at the 10% level. Second, among females thirty years or less (“young”), education has a statistically significant ( $p < .05$ ) positive effect on support for foreigners’ local suffrage in both SIFCCT and UTAS. Keeping other control variables constant, the university experience makes young females 1.4 to 1.7 times more likely to agree with granting local suffrage to permanent residents. Given the contrasting nature of SIFCCT and UTAS, this result can be considered as robust support for H2, albeit within a subset of the female sample: university education has an effect on *young* female, but not male, graduates’ support for granting suffrage to permanent resident foreigners.

As we move down to the second and third rows of [Figure 3](#), the effect of university education on older female cohorts is mixed. Especially for the elder cohort (60s or over), university education substantively increases support for foreigner’s local suffrage in SIFCCT—hence supporting H2—but effects are null in UTAS.<sup>10</sup> In summary, [Figure 3](#) provides support for H1 and partial support for H2. With both SIFCCT and UTAS, estimated effects of university education on male graduates’ support for granting suffrage to permanent residents is null. Using SIFCCT, females across all age cohorts are more supportive of granting suffrage to permanent resident foreigners than Japanese females with high school degrees at most. Using UTAS, estimated effects for females goes away for respondents forty

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10. Furthermore, if full set of response categories in dependent variables are considered, education for UTAS elder females even strengthens the negative opinion towards granting suffrage to foreigners. See more discussions in Online Appendix.

and above. These differences may arise due to inherent differences in the types of people contacted via online vs. offline surveys. We discuss the implications of these findings for our analyses with geographic distance adjusted matching.

## Geographic Distance Adjusted Matching

In the previous section, we make strong assumptions regarding functional forms of the relationships between covariates, treatment, and outcome variables. Matching is another way to filter out the effect of covariates, but makes less assumptions (Ho et al. 2007). Therefore, analyses with matching provide an additional check that results obtained in the previous section are not an artifact of arbitrary model selection. Nevertheless matching by itself does not resolve omission of unobserved confounders, which in the relationship between education and support for local enfranchisement, could be factors that lead to the choice of attending university in the first place, choice of where to live, and attributes of where one lives.

In order to surmount the challenge of contextual confounders, we employ a matching method introduced by Keele, Titiunik, and Zubizarreta (2015) that minimizes both heterogeneity in covariate distributions and geographic distance between matched pairs. This matching method functions under the framework of optimal subset matching (Rosenbaum 2012), which “optimally seeks to retain the largest number of treated subjects for which common support holds” (Keele, Titiunik, and Zubizarreta 2015, 230). Furthermore, we use integer programming (Zubizarreta 2012) to apply different types of constraints for different covariates.<sup>11</sup>

For our application, we restrict geographic matching to the “young” cohort (20s and 30s) of SIFCCT for two reasons: there are fewer high school graduates than university graduates in the young cohort, which allows us to match all high school graduates with university graduates without replacement.<sup>12</sup> Substantively, recall from the top panel of **Figure 3** that

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11. `designmatch` package in R with Gurobi optimizer (<https://www.gurobi.com/>) is used to run matching.

12. Given the relative group size, high school graduates are defined as “treated” and university graduates

findings are consistent between SIFCCT and UTAS for “young”. As before, we separate analysis by gender to test H1 and H2 that the effects of university education on support for granting suffrage to permanent resident foreigners is conditioned by gender. Within each gender subset, we enforce exact matching of employment status (i.e., employed or not) and near exact matching of wave (i.e., only one wave apart is allowed). For other covariates (knowledge, political interest, economic evaluation, income, length of residence) and age, we enforce standardized difference in means to be smaller than 0.02 (0.01 for knowledge and 0.03 for age, considering the importance in attaining balance). The integer programming solver looks for the solution of matched pairs that satisfies all the above constraints and retains as many high school graduates as possible.

We apply geographic distance adjustment by minimizing the following function subject to pair matching (i.e., respondent in treated and control groups to be matched at most once without replacement) and all the above constraints:

$$\sum_{i \in H} \sum_{j \in U} d_{i,j} a_{i,j} - \lambda \sum_{i \in H} \sum_{j \in U} a_{i,j}$$

In the above function, respondent  $i \in H$  are high school graduates and respondent  $j \in U$  are university graduates.  $a_{i,j}$  is an indicator function that equals to 1 if  $j$  is matched to  $i$  and 0 otherwise.  $d_{i,j}$  indicates the geographic distance between zip codes provided for  $i$  and  $j$  in kilometer.<sup>13</sup>  $\lambda$  parameter controls the trade-off between matching and geographic distance, such that “it is preferable to match additional pairs if on average they are at a smaller distance than  $\lambda$ ” (Keele, Titiunik, and Zubizarreta 2015, 231). In the current application, we tried different  $\lambda$  values including 50, 100, 200, and 350 kilometers. The smaller  $\lambda$  values achieve finer adjustment in terms of geographic distance, but leave more high

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as “control” at the stage of matching. This procedure is purely for statistical reasons. At the stage of estimating causal effect, we are interested in the effect of university education as “treated” and high school graduates as “control.”

13. Zip codes provided by SIFCCT respondents are converted to geographic coordinates using Yahoo! Japan Geocoder API (<https://developer.yahoo.co.jp/webapi/map/openlocalplatform/v1/zipcodesearch.html>).

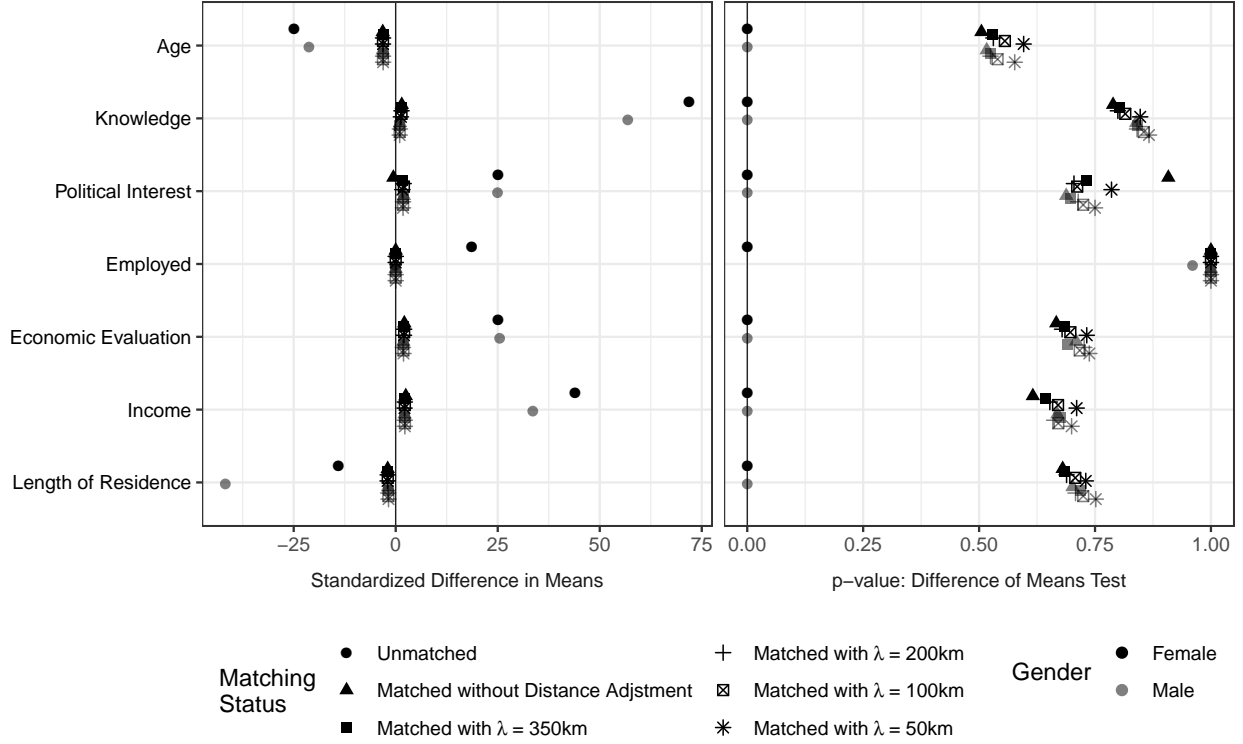


Figure 4: Improved balance by different matching procedures

school graduates unmatched. Separate from  $\lambda$ , we penalize distances over 350 kilometers, which is approximately the median distance between high school graduates and university graduates in SIFCCT.

Figure 4 illustrates improvements in the balance between high school and university graduates before and after matching. In addition to matching with geographic distance adjustment, we also conduct matching without distance adjustment. Here, we replace  $d_{i,j}$  with a rank-based Mahalanobis distance matrix of all standardized continuous covariates (with  $\lambda = 1$ ). It is clear from Figure 4 that all matching methods improve covariate balance between two groups. The difference in means is reduced substantially, and p-values from the difference of means test are all very high after matching. There is no substantive difference in covariate balance between matching with and without distance adjustment. However, the former allows us to account for otherwise omitted geographic variables with relatively little loss in matched pairs. The only significant difference between methods are the proportion of

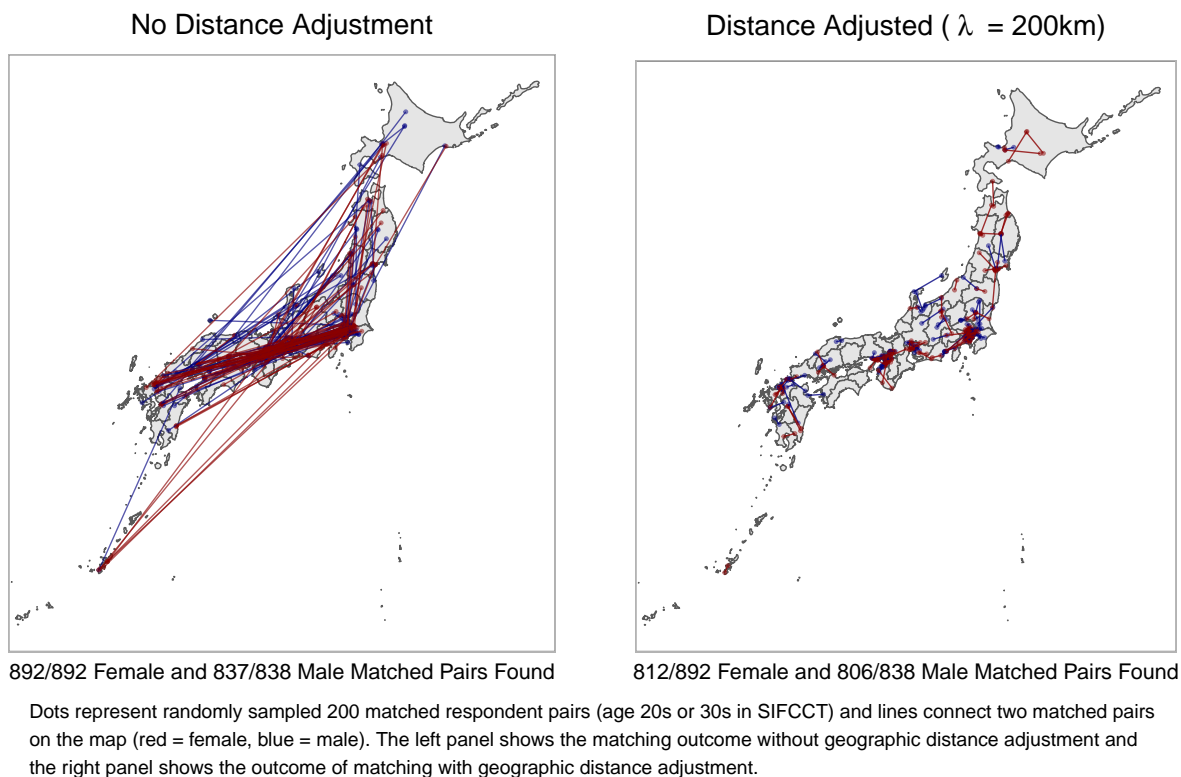
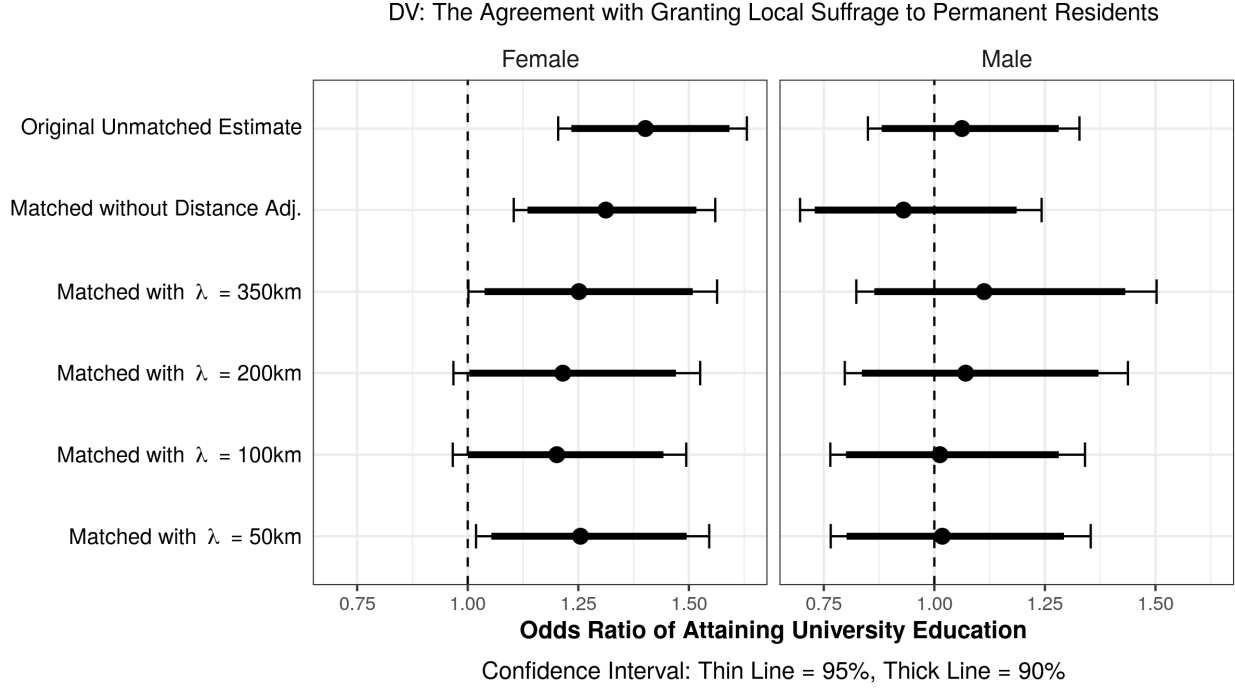


Figure 5: Improved balance in geographic distance ( $\lambda = 200\text{km}$ )

retained samples. In the unmatched data, there are 892 young female high school graduates and 838 male high school graduates. In the matching without distance adjustment, 100% of young female high school graduates and 99.9% (837) of young male high school graduates found a match with university graduates. This rate goes down as  $\lambda$  shrinks: for  $\lambda = 350\text{km}$ , the rate is 95.0% for female and 98.2% for male; for  $\lambda = 200\text{km}$ , the rate is 91.0% for female and 96.2% for male; for  $\lambda = 100\text{km}$ , the rate is 80.2% for female and 88.7% for male; for  $\lambda = 50\text{km}$ , the rate is 65.1% for female and 74.7% for male.

Figure 5 illustrates how the current matching method reduces the geographic distance between matched pairs. Each panel plots randomly sampled 200 matched pairs (400 respondents) on the map of Japan, and connect each pair by the straight line (red is female and blue is male). The left panel shows the outcome from matching without distance adjustment. It shows that lines connects respondent living all across Japan, which raises concern for comparability between matched pairs. The right panel shows the outcome of matching



Models are estimated by logit, standard errors are clustered by prefectures..  
Each model is estimated within each gender subset of each dataset. All models include knowledge, political interest, employment, economic evaluation, income, and wave fixed effects as controls. See Appendix for the detailed tables.

Figure 6: The effect of university education on the support for granting suffrage to permanent residents comparing unmatched and matched estimates (SIFCCT, Young Cohort)

with distance adjustment ( $\lambda = 200\text{km}$ ). It clearly reduces the geographic distance between matched pairs, increases comparability between matched pairs in terms of geographic context, and still retains more than 90% of high school graduates in the matched dataset.

Finally, we compare estimates of education effect in unmatched and various matched datasets. Note that matched datasets provide more precise estimates of causal effect, but its generalizability is limited to the population that have the similar covariate characteristics as high school graduates. With matched datasets, we cannot extrapolate our finding to those university graduates who have covariate characteristics non-comparable to high school graduates. Figure 6 shows the extent to which estimates of the effect of university education on supporting suffrage for permanent resident foreigners change given different types of matching criteria, or no matching at all.<sup>14</sup> For young males, the effect is consistently null

14. Following the recommendation from Ho et al. (2007), we keep all covariates in the models estimated

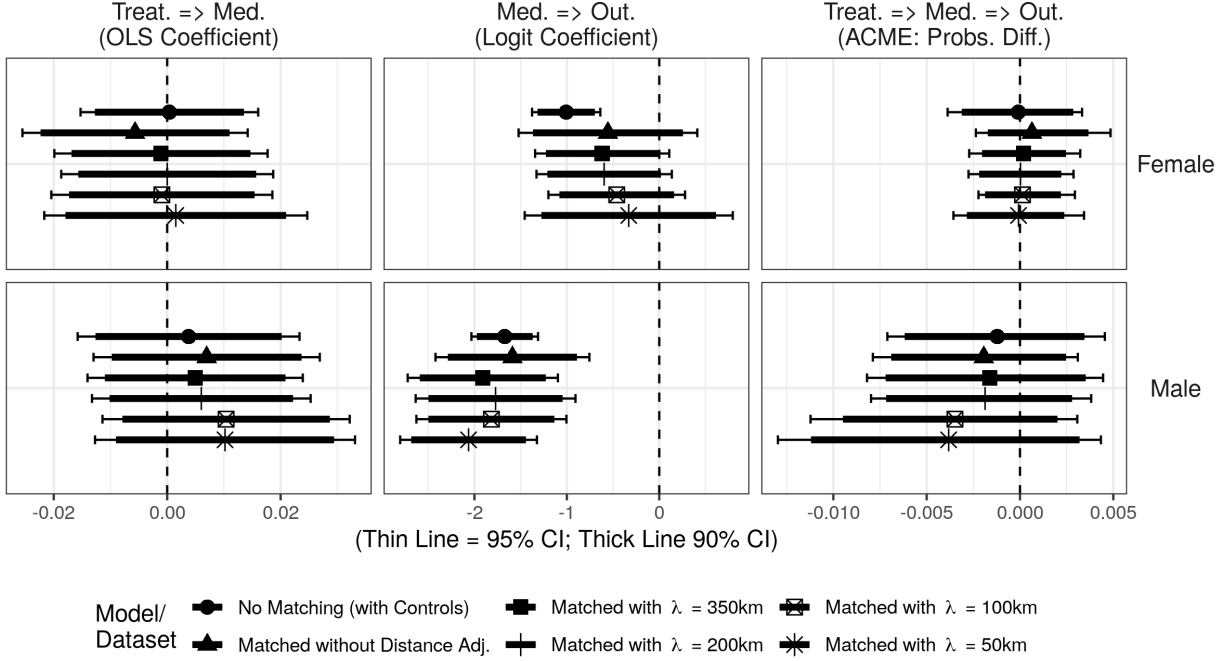
across all datasets. For females, the effect remains statistically significant at 10% level for all datasets, but weakens slightly for matched datasets with distance adjustment. This result implies that part of the education effect among young female observed in the unmatched or not-distance-adjusted matched dataset is potentially confounded by the geographic contexts. To summarize, analysis with matched datasets reaffirms support for H1: Japanese males with university degrees are not more supportive of granting suffrage to permanent foreigners than Japanese males with high school degrees at most. However, there is somewhat weaker support for H2. After accounting for geographic confounders, the effect of university education on Japanese females’ support of local suffrage for permanent resident foreigners weakens.

## Causal Mediation Analysis

In previous sections, we focus on total causal effects of university education on Japanese nationals’ opinion towards granting local suffrage to permanent resident foreigners. The effects, such as they are, are small and apply to Japanese women more than men. In this section, we test our hypotheses for why these effects exist by estimating the average causal mediation effect (ACME) of university education. We rely on SIFCCT because it offers measures of respondents’ political ideology, feeling towards South Korea and China, the mediators described in H3A-C. In addition to controlling for pre-treatment covariates that affect both treatment (i.e., university education) and outcome (i.e., support for foreigners’ local suffrage), valid assessment of ACME assumes any post-treatment covariates that potentially affect both mediator and outcome are controlled (Imai et al. 2011). We present ACME estimates using both unmatched and matched datasets to verify they are robust to different modelling assumptions.

We use causal mediation analysis within the counterfactual framework described in Imai et al. (2011), implemented by the `mediation` package in R (Tingley et al. 2014). For each mediator, this package uses Monte Carlo simulations to estimate treatment effects mediated on matched datasets to filter out any imbalance remained in the matched datasets.



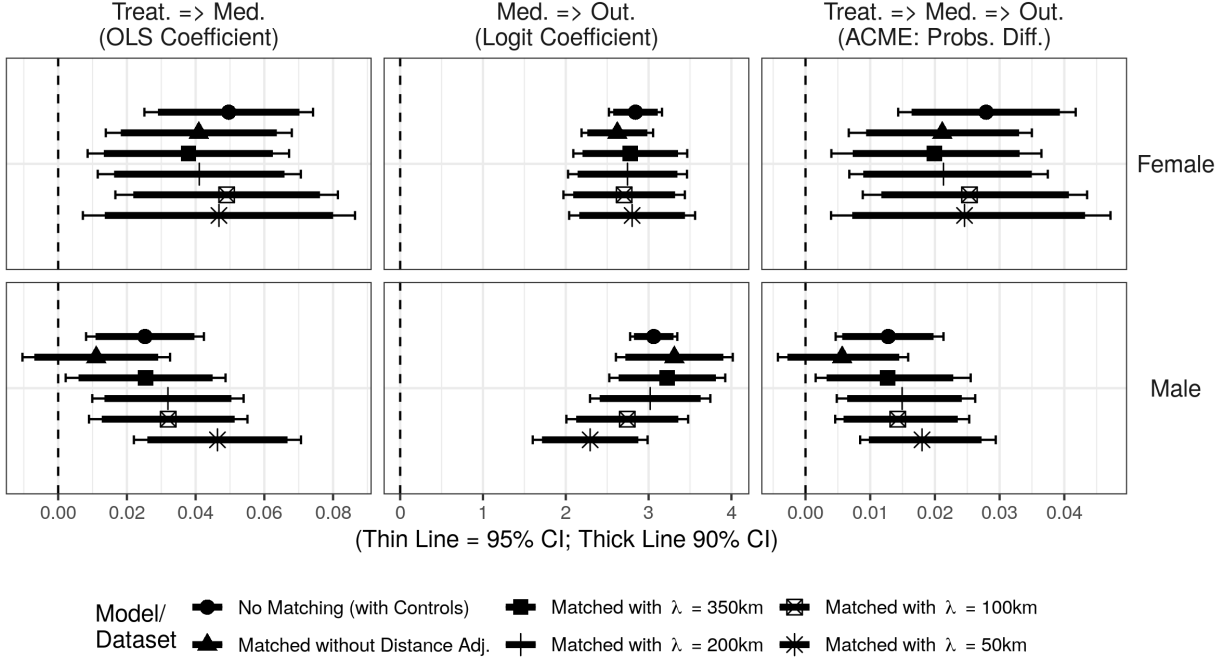


Treatment: University education or more (1), Senior High School or less (0).  
Mediator: Conservative Ideology (rescaled to 0-1 with 1 being the most conservative). Model is estimated by OLS.  
Outcome: Rather agree or agree with granting suffrage to permanent residents (1), else (0). Model is estimated by logit.

Figure 7: The causal mediation effect of university education on the support for granting suffrage to permanent residents through ideology (SIFCCT, Young Cohort)

by proposed mediators. In contrast to classical structural equation-based methods, which only allow linear models, this method allows flexible statistical modelling at each stage of estimation. Given the continuous nature of mediators and binary nature of outcome, we estimate all mediator models using OLS regression, and all outcome models in logit. We also incorporate the interaction term between education and mediators, given that the strength of association between mediators and outcome may change by the level of education attainment. All of the following results are ACME of treated (i.e., university educated) that incorporates the potential change in the level of association between mediators and outcome after ‘treatment.’

Figure 7 shows the ACME of education mediated through conservative ideology. The left panel shows the estimated effect of university education on ideology (scaled in terms of OLS coefficient), the center panel indicates the estimated effect of ideology on support for



Treatment: University education or more (1), Senior High School or less (0).  
Mediator: Feeling thermometer towards South Korea (rescaled to 0-1 with 1 being the most favorable). Model is estimated by OLS.  
Outcome: Rather agree or agree with granting suffrage to permanent residents (1), else (0). Model is estimated by logit.

Figure 8: The causal mediation effect of university education on the support for granting suffrage to permanent residents through the feeling towards South Korea (SIFCCT, Young Cohort)

granting voting rights to permanent resident foreigners (scaled in terms of logit coefficient), and the right panel shows the estimated ACME of university education through ideology (scaled in terms of average movement in predicted probability). Consistent with H3A, these three panels show that political ideology does not mediate the effect of university education on support for granting suffrage to permanent resident foreigners. The broken link seems to lie in the first chain. All coefficients in the first panel hover around zero, showing university education does not have an effect on liberalizing students. Japanese nationals simply do not change their ideology due to experiences at universities.<sup>15</sup>

Figure 8 shows the ACME of education mediated through feeling towards South Korea.

15. There is a recent discussion in Japan that progressive-conservative ideology scale is less effective in measuring left-right ideology especially among younger cohort (Jou and Endo 2016). Given this suggestion, we check the robustness of our ideology result using proxy variables – feeling towards Liberal Democratic Party (LDP) and left-right party support – finding the similar implications. See Online Appendix for more details.

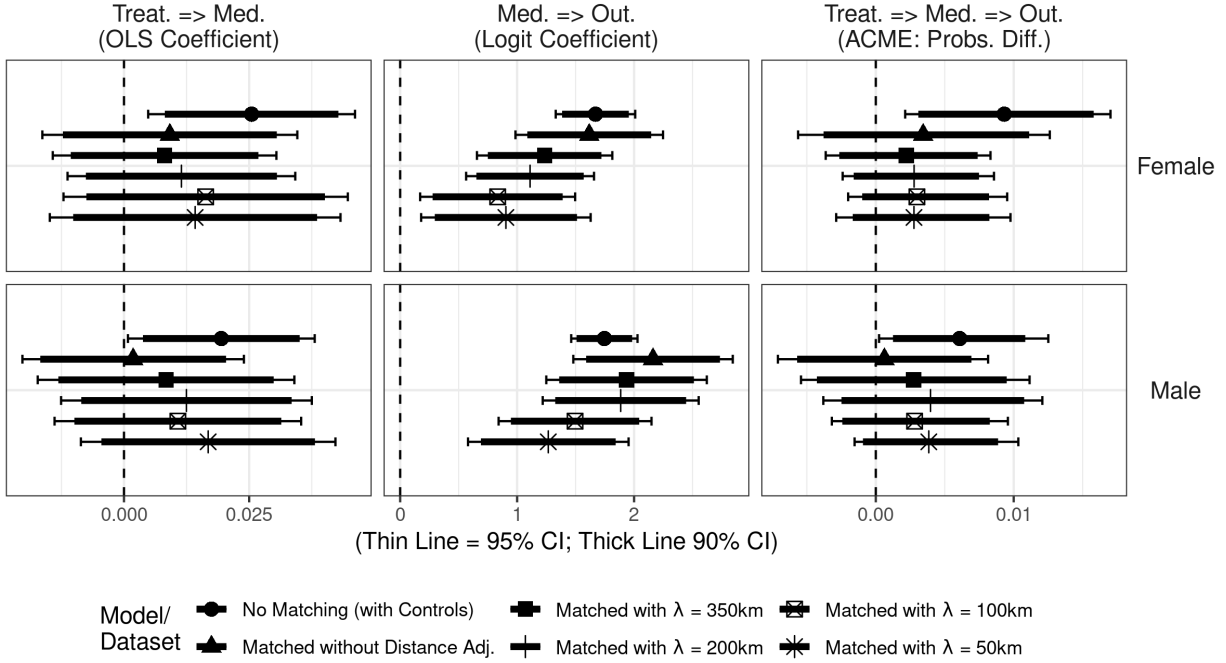


Figure 9: The causal mediation effect of university education on the support for granting suffrage to permanent residents through the feeling towards China (SIFCCT, Young Cohort)

In support of H3B, positive feelings towards South Korea does mediate the effect of university education on support for granting suffrage to permanent resident foreigners. This mediation effect is statistically significant ( $p < .05$ ) for both genders at most specifications. While the mediation effect for females is generally larger than for males, the mediation effect among males is slightly increasing in the strictness of geographic distance constraints ( $\lambda$ ). When using the dataset matched without geographic distance adjustment, the ACME is statistically insignificant for males. However, at  $\lambda = 50km$ , the result of ACME for males approximates that of females. This result suggest geographic distance adjustment plays an important role in revealing the ACME of education through feeling towards Korea among Japanese males.

Figure 9 shows the ACME of education mediated through feeling towards China. In contrast to Figure 8, the result shows that positive feelings towards China does not mediate the effect of university education on support for granting suffrage to permanent resident

foreigners. For both genders, the mediation effect is statistically significant ( $p < .05$ ) on unmatched data, but not statistically significant ( $p > .10$ ) after matching, so there is little support for H3C. The broken link seems to lie in the first chain. For most specifications, coefficients in the first panel hover around zero, showing university education does not have an effect on increasing positive views toward China. However, the center panels in [Figure 9](#) show respondents who do have positive feelings toward China are more likely to support for granting suffrage. These coefficient sizes are smaller than that for feelings toward South Korea, but they are statistically significant.

To summarize, causal mediation analyses provide support for H3A and H3B, but not for H3C. Even for Japanese males, while the previous section shows that total effect of university education on foreigners’ local suffrage support is null, the ACME through feelings toward South Korea suggests university education can increase support for foreigners’ suffrage through increasing positive feelings toward South Korea. However, the positive social contact mechanism may not be applicable to all groups of foreigners. Mediation effect for feelings toward China is null, not because feelings toward China in itself does not increase support for local suffrage, but because university education does not increase positive feeling towards China.

## Discussion

This paper challenges an established theory of attitude formation by applying it to a country that has, to our knowledge, not sufficiently explored how university education shapes public opinion. Examining local enfranchisement of foreigners as a tool of integration, we find mechanisms that underly current theories cannot be fully applied to Japan. We introduce potential reasons why these mechanisms work differently, and demonstrate within a causal inference framework that major parts —ideological liberalization through professors and/or learning process, positive social contact—need to be reconsidered once they are removed from North American/European contexts.

Our analysis reveals two conditions in which the positive relationship between university education and support for immigrant integration can exist in Japan. First, if any, direct positive effects persist among females but not males. This result implies that gendered experience in Japanese university does make a difference in how graduates form political attitudes. Second, causal mediation analysis suggests that positive social contact, not the liberalization of ideology, mediates the effect of university education. Moreover, positive social contact may not change Japanese nationals' views toward all groups of foreigners. Feelings toward Korea is an important—and potentially only—mediator in the proposed relationship. The revelation of those two conditions moves us towards developing a more nuanced and inclusive theory of how higher education shapes public opinion. Another implication, specific to Japan, is that this country has one of the most highly educated citizenry in the world, yet its higher education system may not be an engine for social change and progress. If an entire generation of Japanese youth are not being socialized ideologically at formal institutions of learning, where are they getting their political beliefs from? Normatively, is Japan content to have universities that impart no added influence on their students beyond job skills and diplomas? We examine the issue of immigrant integration in this paper, but similar analysis can be applied to other political issues such as gender inequality in political participation and representation, LGBT rights to marriage, and freedom of religious expression.

In parting, we acknowledge limitations and suggest extensions of this paper. We have only examined one aspect of immigrant integration in one country. As the MIPEx indicators show, integration is a composite outcome of multiple factors, and empirical findings in Japan may not extend to other Asian countries. We also do not have more fine grained data to directly test our explanations as to why university education has stronger effects on females rather than males, and why they increase positive views toward Korea but not China. In order to test these explanations in extensions of this paper, we plan to gather information on university enrollment rates, majors, and outcomes conditioned by gender and country of origin.

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