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Immigrant–native Differentials in Commuting and Residential Preferences in Japan *

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Abstract

Several studies have examined immigrants' labor force participation and economic outcomes and highlighted immigrants' geographic behaviors in host countries; however, Japanese cases remain unexplored. This study provides novel evidence of the immigrant–native differentials in commuting and residential preferences in Japan. This study uses individual data from the 2010 Population Census. Controlling for individual characteristics, employment status, regions, industries, and occupations, we observe that the gender gap in commuting distance is much smaller for immigrants than for the Japanese natives. Among married couples, male immigrants commute significantly shorter distances than native males. No significant differences exist in commuting distance between female immigrants and natives. While analyzing residential preferences, we find that immigrants who have lived in Japan for 5 years or more tend to reside in areas with a higher population density than those who have lived for less than 5 years. Immigrant–native differentials in residential preferences differ according to home countries. The result contributes to the literature on immigrant economic integration. Further, it provides empirical evidence for policies that address the labor shortage problem in Japan.

Keywords: immigrants, natives, commuting, residential preferences, gender
JEL: J15, J24, J61, R12, R23

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1. Introduction

The immigrant–native gap in geographic behaviors is one of the important indicators for immigrant integration in their host countries (Freeman, 2002). In Japan, an increasing number of immigrants require significant academic and policy attention in recent years. OECD Statistics reports that Japan has been ranked as the fifth largest immigration country among the 35 OECD countries in terms of the total inflow of immigrants during 2000–2020 (OECD, 2023). Although some studies have examined the commuting and residential preferences of general residents (Kawabata and Abe, 2018; Morikawa, 2018; Tabuchi, 2019; Kondo, 2020), few studies have focused on the group of immigrants. To fill this gap, this study provides novel evidence regarding immigrant–native gaps in the geographic behaviors on commuting and residential preferences in Japan using large-scale individual data.

Our study addresses commuting analysis issues regarding traditional labor and urban economics. As discussed by White (1986), "Urban economists view workers as having fixed job locations at the center of the city and being compensated for longer commuting journeys by lower housing prices in the suburbs. Labor economists, in contrast, tend to view workers as having fixed residential locations and being compensated for longer commuting journeys by higher wages at more distant jobs." Following White (1986), we estimate the reduced-form model of commuting lengths, in which residential and job locations are determined simultaneously, and compensations for commuting by integrating both labor and urban economics into the model. Therefore, we clarify individual characteristics that explain commuting length after controlling for job and residential locations and compare those results between natives and immigrants.

Furthermore, our study's empirical framework reveals the geographic behaviors regarding residential preferences between immigrants and natives. Beyond the conventional views of urban economics, the amenity-based theory of residential location has also garnered scholars' attention in recent years (Brueckner et al., 1999). However, urban and rural amenities cannot be necessarily evaluated between immigrants and natives similarly. Specifically, how immigrants change residential locations in Japan with increasing yearly stays is not well known. Thus, this study determines differences in residential preferences between natives and immigrants.

Workers' commuting behaviors can also differ between females and males. Previous studies suggest that males commute longer distances than females (Crane, 2007; Rosenthal and Strange, 2012; Kawabata and Abe, 2018; Le Barbanchon et al., 2020; Olivieri and Fageda, 2021; Farré et al., 2022) because females bear more housework responsibilities traditionally (Hanson and Hanson, 1980; Turner and Niemeier, 1997). McLafferty (1997) asserts that marriage lengthens commuting times for males of all race/ethnic groups, reflecting the domestic division of labor and time for married couples. Although Japan has significant gender gaps in employment and the labor market (Estévez-Abe, 2013; Kato et al., 2013; Youm and Yamaguchi, 2016), existence of similar gender gaps among immigrants is ambiguous. The social and economic environment of the host country causes gender gaps. However, culture and attitudes toward gender roles in the original countries also primarily affect gender gaps

(Fernández and Fogli, 2009), leading to different outcomes between natives and immigrants. Therefore, this study compares the gender gap between natives and immigrants while analyzing commuting behaviors.

The suburbanization of rich people has been widely observed in the United States and some other countries. However, Tabuchi (2019) indicates that in Japan, "the rich and poor tend to colocate near the central city, while the middle class locates in both the central city and the suburbs" using the microdata on detached-housing prices and apartment rents in the Tokyo metropolitan area. Brueckner et al. (1999) developed an amenity-based theory of location by income. The rich are likely to live in central locations with a strong amenity advantage and in the suburbs when the center's amenity advantage is weak or negative. In Japan, a tradeoff between social amenities and residential spaces exists. People living in central cities enjoy more social amenities but concede to smaller residential spaces. Although immigrants and natives live in the same social-economic environment, their utility functions may differ because of their varied tastes. Therefore, different residential preferences between immigrants and natives could exist, which we will examine in this empirical study.

Immigrants usually benefit from living in similar ethnic neighborhoods and thus may concentrate on specific areas. However, Liu and Hagiwara (2021), using the 2010 Population Census of Japan sample, show that the geographic distribution of immigrant residences is similar to that of native residences on the prefectural level. In particular, similar to natives, most immigrants concentrate in large Japanese cities. This study carefully calculates the population density for 10-kilometer radius of each residence and examines the residential behaviors of immigrants and natives.

To the best of our knowledge, only a few economic studies have examined the commuting and residential behaviors of immigrants in Japan. The exception is the study of Murayama and Nagayasu (2021), which examines the aggregated residential behaviors of immigrants on the prefectural level using regional data. The study suggests that overseas immigrants first move to ethnically concentrated regions in Japan, but the trend substantially weakens with subsequent domestic relocations. However, the limitation involves samples for relocation analysis that cannot exclude individuals who relocated because of graduating from universities. The data do not provide information on whether immigrants are overseas students when they lived in previous residential regions. Nevertheless, the study offers a pioneering analysis of the residential behaviors of immigrants living in Japan. Differing from the aggregated analysis in previous studies, this study applies individual-level data for examining the effects of human capital, personal and household characteristics, and job types on workers' commuting and residential behaviors. Additionally, it highlights the differences between natives and immigrants.

This study is structured as follows. Section 2 describes the theoretical background, estimation strategy, and data. Sections 3 and 4 discuss the estimation results. Section 5 concludes the study.

2. Theoretical background, estimation strategy, and data

In our model, the job and residential locations are not fixed. Individuals may commute longer

distances for a higher wage in a more distant job or a lower housing price in a remote area. Therefore, the commuting distance was endogenously determined through the simultaneous choice of job and residential locations provided the nominal wage rate and cost of living in each location. Our regression model included the nominal wage rate and cost of living because these variables depend on individuals' human capital, personal and household characteristics, job type, and fixed factors of residential locations.

We assumed that individuals' preferences for residence and workplace were partly heterogeneous. The utility included stochastic components of social amenities and considered heterogeneity in the preferences associated with human capital, personal and household characteristics, job types (including the status of unemployment and non-labor force), and fixed factors of residential and job locations.

Extending the framework of White (1986), we specified the reduced forms of commuting distance as follows:

$$C_{ijrs} = \beta_0 + \boldsymbol{\beta}_1' \boldsymbol{X}_i + \beta_2 a_j + \beta_3 d_r + \beta_4 d_s + \varepsilon_{ijrs},$$

where C_{ijrs} is the commuting distance between residential location r and job location s, for individual i whose nationality is j; $\boldsymbol{X}_i$ includes a set of individual characteristics such as education, age, job status, marital status, and family structure; a_j is a set of dummies for nationality; d_r and d_s are the prefecture dummies for residence and workplace, respectively; ε_{ijrs} is an error term.[1]

As the objective of residence analysis includes workers who are unemployed in the sample period, the estimation of residential preferences uses the same specification but excludes the job location s as follows:

$$P_{ijr} = \gamma_0 + \gamma_1' \boldsymbol{X}_i + \gamma_2 a_j + \gamma_3 d_r + \varepsilon_{ijr},$$

where P_{ijr} is the population density of residential location r for individual i whose nationality is j.

As the dependent variables of commuting and residential decision are continuous, ordinary least squares estimation is applied in the empirical study. Our primary interest was to compare how a set of parameters $\boldsymbol{\beta}$ and $\boldsymbol{\gamma}$ is different between natives and immigrants. We estimated separate equations between natives and immigrants to focus on the immigration–native gaps in commuting behavior and residential preference.

We used individual-level data from the 2010 Population Census, which incorporates data regarding

[1] It may be interesting to analyze the effects of living spaces on commuting distance and residential preference. However, based on the model, we prefer controlling for the housing price as an independent variable. Therefore, the regression includes prefecture dummy to control for average housing/land market conditions.

128 million Japanese residents, including natives and immigrants. In the regression analysis, we used the total number of immigrants, which is 1.629 million, and a 10% simple random sample of natives. Furthermore, we restricted the data to individuals who have graduated from school and aged 15–64 (i.e., students were excluded). Natives who did not live in Japan 5 years before the 2010 census were excluded. We also excluded the foreign technical intern trainees because they were not permitted to reside as typical immigrants in Japan. For instance, they were not allowed to bring families to Japan, including their spouses or children. Their voluntary job changes or long-distance movements were also strictly restricted.

Data on four levels of education were measured: primary school or junior high school graduates, senior high school graduates, junior or technical college graduates, and university (undergraduate or higher) graduates. Fulltime and permanent employees were considered regular workers (*seishain* in Japanese). Part-time workers did not include self-employment, family workers, or homeworkers, the three groups of whom were included as separate variables in our estimation. The word immigrant followed its standard definition in Japan, which is "individuals living in Japan and not holding Japanese nationality" (OECD, 2010).

As the data regarding commuting time and cost were unavailable directly from the census, we calculated the straight-line (great-circle) distance (kilometers) between the workplace and residence as a proxy for commuting behavior. The commuting distance was measured between the points of the districts having the largest population within each municipality. The transportation system and roads are well developed in Japan, as it is the third-largest economy in the world. Thus, the variability in straight-line commuting distances could be close to the variability in commuting time and costs in our regression analysis.[2] The strength of this commuting behavior proxy is its high representativity and reliability because the census covers Japan's total population, and the location data of workplaces and residences are of high quality. In addition, the population density was measured as the population within the 10-kilometer radius of the detailed home district for each individual. Details of variables and data are presented in Table A1.

3. Determinants of commuting distance

While controlling for individual characteristics, employment status, industries, occupations, and prefectures, Table 1 shows that the commuting distance for both male natives and immigrants who have lived in Japan for 5 years or more is longer than for females. The result is consistent with previous studies that find a gender gap in workers' commuting behaviors. However, the gender gap size differs between natives and immigrants. The gender gap for immigrants who have lived in Japan for 5 years

[2] Commuting time is also an important determinant for the utility. Workers pay higher prices or optional costs to save commuting time. However, as we cannot consider the exact commuting route and mode for each worker, we believe that the commuting distance is a good proxy for the commuting costs provided that workers face the same commuting mode in their residential location.

or more is only about half of that of natives. Similarly, limiting the sample to married individuals (Table A2), the gender gap for immigrants who have lived in Japan for 5 years or more is again about half of that of natives. However, the gap for immigrants who have lived in Japan for less than 5 years is about a quarter of that of natives. Immigrants' gender gap in commuting distance may expand after living for a certain period in Japan. Even for immigrants who have lived in Japan for more years, the gender gap is much lower than that of Japanese natives.

A gender gap in commuting distance is also found in the estimate of marriage. Table 2 indicates that married males commute longer distances than unmarried males, with lower effects on immigrants than the Japanese natives. Compared with Japanese males, immigrant males are less likely to commute longer distances after marriage. In addition, Table 3 indicates that the effect of marriage on females' commuting distance is minimal, that is, below one eighth of the effect on males' commuting distance for Japanese females and around one third or half of the effect on males' commuting distance for immigrant females.

Furthermore, Tables 2 and 3 show that for immigrants from the major 10 source countries, the commuting distances of male immigrants are generally shorter than male natives. Contrarily, few significant differences exist between the commuting distances of female immigrants and natives, which is especially obvious while considering married couples. As shown in the estimates of married individuals in Tables A3 and A4, commuting distance is significantly shorter for male immigrants than natives, and a negligible gap exists for female immigrants than natives for all the major 10 source countries. Thus, the smaller gender gap for immigrants than natives (Tables 1 and A2) is caused by the shorter commuting distances of male immigrants. Previous studies have found that the gender gap in commuting distance regards household responsibilities of family members (e.g., Fanning Madden, 1981). Therefore, in Japan, immigrant men may willingly undertake more housework responsibilities and spend more time at home than Japanese men.

Moreover, the commuting distance is significantly longer for male and female immigrants who have lived in Japan for 5 years or more than those who have lived for fewer years, as indicated by the estimates of the dummy variable of 0-4 years since migration. Immigrants commute longer distances after living in Japan for specific years because of more job opportunities, with accumulated experiences in the host countries, in a larger local labor market.

Tables 1–3 further indicate that both male and female natives and immigrants with a higher educational level commute longer distances, which is consistent with the theoretical prediction that workers with higher wages can commute longer distances. The effect of having a university degree for immigrants who have lived in Japan for 5 years or more is similar to that for natives. However, for immigrants who have lived in Japan for fewer years, the effect of having a university degree is positive but minimal, perhaps because of receiving limited information in their first few years after migrating to the host country. High-skilled workers are likely to be allowed to reside for a longer period in Japan. Furthermore, part-time workers commute shorter distances than full-time and regular workers in case

of both immigrants and natives. Similarly, workers with low-skilled jobs, such as production jobs, cover shorter commuting distances, as indicated by estimates of occupation dummies. These results regarding the education level and occupation are similar to the study of Motte et al. (2016), which finds that "all other things being equal, commuting distances and times are shorter for the informal sector."

Finally, the effects of having children or living with older family members are minimal, as shown in Table 1. These effects are negligible between immigrants and natives, even restricting samples of married individuals (Table A2–A4).

4. Determinants of residential preferences

Table 4 shows that immigrants who have lived in Japan for 5 years or more tend to live in areas with higher population density (400.3 persons per squared kilometer) than those who have lived for fewer years while controlling for individual characteristics, employment status, occupations, industries, and prefectures. This evidence is confirmed by comparing each home-country dummy in columns (5) and (6), respectively. As shown in the additional analysis in Table 5, for each group of high-, medium-, and low-educated immigrants, the population density is higher for immigrants who have lived in Japan for 5 years or more than those who have lived for fewer years. Overall, immigrants who live in Japan for a longer period may reside in areas with higher population density, which supports the spatial assimilation theory in migration studies. Although most immigrant males commute shorter distances than native males (Table 1), their residential preferences differ according to their nationalities. According to Table 4, among immigrants who have lived in Japan for 5 years or more, immigrants from Korea, China, the Philippines, Indonesia, the United Kingdom, and the United States tend to live in areas with higher population density than natives, while those from Brazil, Peru, Vietnam, and Thailand tend to live in areas with lower population density than natives.

For both natives and immigrants who have lived in Japan for 5 years or more, Table 4 shows an interesting finding: the high-educated group, that is, university graduates, and the low-educated group, that is, junior high school graduates or below, tend to live in areas with higher population density than middle-educated group (i.e., the group of senior high school and junior or technical college graduates). In other words, high- and low-educated people live in areas with comparatively high population density, while medium-educated persons reside in areas with relatively low population density. This is consistent with the result of Tabuchi (2019), who indicates that in Japan, "the rich and poor tend to colocate near the central city, while the middle class located in both the central city and the suburbs," differing from the suburbanization of rich people observed in the United States. As the population density is higher in cities than in the suburbs, the finding of Tabuchi (2019) indicates that the average population density for the rich and poor is higher than that for the middle class. Our result supports this finding and finds that it applies to both natives and immigrants living in Japan.

Minor differences exist between immigrants and natives regarding the relationship between

education level and residential preferences. For immigrants who have lived in Japan for 5 years or more, no significant differences exist in population density between the high- and low-educated groups; however, for natives, the high-educated group lives in areas with higher population density than the low-educated group. Moreover, among immigrants who have lived in Japan for less than 5 years, one of the middle-educated groups (i.e., junior or technical college graduates) lives in areas with higher population density than the low-educated group.

Regarding the estimates of marriage and children, Table 4 indicates that for natives and immigrants who have lived in Japan for 5 years or more, those who are married or have children are likely to live in areas with lower population density as they require large living spaces. Furthermore, the effect of having older children than younger children is smaller for immigrants and natives. The importance of social amenities, which are usually richer in areas with higher population density in Japan, increases as children grow up. Compared with preschool children, children in middle or high schools may need more social amenities such as after-school facilities or cram schools, which are usually concentrated in areas with higher population density. In addition, differing from the groups of natives and immigrants who have lived in Japan for 5 years or more, the immigrants living for 0–4 years tend to reside in areas with higher population density if they have school-age children. Those children, aged 6 years or older, are not born in Japan and, thus, may need more social amenities to adapt to the country.

5. Conclusion

This study compares the geographic behaviors of immigrants and natives regarding commuting and residential preferences in Japan. First, while controlling for individual characteristics, employment status, industries, and occupations, we observe that natives and immigrants with a higher educational level commute longer distances. However, the gender gap in commuting distance is much smaller for immigrants than for natives. In addition, compared with Japanese males, immigrant males are less likely to commute longer distances after marriage. The high- and low-educated groups among immigrants and natives tend to live in areas with higher population densities than the middle-educated groups, which is consistent with the Japanese perspective and against the suburbanization observed in the United States. Immigrants who have lived in Japan for 5 years or more tend to live in areas with a higher population density than those who have lived for less than 5 years. Even though immigrant males commute shorter distances than their Japanese counterparts, immigrant–native differentials in residential preferences differ according to the immigrants' nationalities. Among immigrants living in Japan for 5 years or more, immigrants from Korea, China, the Philippines, Indonesia, the United Kingdom, and the United States tend to live in areas with higher population densities than natives, while those from Brazil, Peru, Vietnam, and Thailand tend to live in areas with lower population densities than natives, after controlling for individual characteristics, employment status, industries, occupations, and prefectures.

The Japanese government has put efforts in recent years to accept immigrants to address the labor

shortage problem, which has been a long-standing issue Japan. The population decreases dramatically in small cities, towns, and villages through outflows of residents to large cities. However, eventually, immigrants may contribute little to the labor force in those areas because most immigrants may prefer to live in large cities similar to natives. The study result reveals that even if the immigrants reside in regions with low population densities when arriving in Japan, they probably relocate to large cities after few years of assimilation. Thus, in Japan, to tackle the decreasing labor force in small cities, towns, and villages, disseminating labor-saving technologies should be a better approach.

Nevertheless, policies that attract international immigrants to Japan, especially high-skilled foreign workers, increase the country's global competitiveness. Although immigrants' proportion to the entire population has been small in Japan for decades, most immigrants do not limit their lives to ethnic neighborhoods but actively assimilate into Japanese society, as indicated by this study's result. In 2018, the Japanese government implemented a new policy named "Comprehensive Measures for Acceptance and Coexistence of Foreign Nationals," which aims to "achieve the purpose of contributing to the realization of a society where Japanese nationals and foreign nationals are able to live safely and comfortably together through the proper acceptance of foreign nationals and to realize a society of harmonious coexistence" (Ministry of Justice, 2018). This policy may significantly increase the country's attractiveness for international talents by contributing to migration integration in Japan.

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Table 1. Determinants of commuting distance

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and natives	(6) Immigrants (0-4 years) and natives
education level (reference: primary school or junior high school)						
senior high school	0.2839***	0.1178***	0.1637***	0.0567*	0.2623***	0.2284***
	[0.0216]	[0.0294]	[0.0425]	[0.0326]	[0.0197]	[0.0201]
junior college or technical college	0.4266***	0.3931***	0.3921***	0.4608***	0.3876***	0.3554***
	[0.0259]	[0.0554]	[0.0723]	[0.0812]	[0.0242]	[0.0246]
university (undergraduate or higher)	1.4453***	1.1557***	1.2886***	0.5089***	1.4287***	1.3907***
	[0.0308]	[0.0563]	[0.0703]	[0.0896]	[0.0283]	[0.0293]
age	0.0532***	0.0121***	0.0159***	0.0075*	0.0502***	0.0505***
	[0.0007]	[0.0020]	[0.0024]	[0.0038]	[0.0007]	[0.0007]
married	0.9189***	0.7747***	0.8021***	0.5645***	0.9097***	0.8802***
	[0.0168]	[0.0322]	[0.0454]	[0.0455]	[0.0158]	[0.0159]
male	2.4671***	0.8885***	1.3556***	-0.0844**	2.3798***	2.3186***
	[0.0175]	[0.0356]	[0.0521]	[0.0387]	[0.0167]	[0.0164]
kids under 6 years old	0.0869***	0.1910***	0.0861*	0.4954***	0.0808***	0.0913***
	[0.0143]	[0.0403]	[0.0449]	[0.0860]	[0.0136]	[0.0141]
kids aged 6 to 11	0.2515***	0.1866***	0.1815***	0.3899***	0.2453***	0.2470***
	[0.0141]	[0.0419]	[0.0446]	[0.1243]	[0.0135]	[0.0140]
kids aged 12 to 14	0.3754***	0.1742***	0.1562**	0.7660***	0.3559***	0.3732***
	[0.0230]	[0.0639]	[0.0658]	[0.2534]	[0.0218]	[0.0229]
kids aged 15 to 17	0.4480***	0.075	0.095	0.3748**	0.4201***	0.4416***
	[0.0229]	[0.0582]	[0.0608]	[0.1735]	[0.0217]	[0.0227]
kids aged 18 to 19	0.3850***	0.2312***	0.0837	0.5333***	0.3617***	0.4130***
	[0.0329]	[0.0749]	[0.0847]	[0.1491]	[0.0311]	[0.0324]
old people aged 65 to 74	0.1329***	0.4026***	0.3960***	1.2638***	0.1409***	0.1244***
	[0.0238]	[0.0847]	[0.0888]	[0.3120]	[0.0231]	[0.0238]
old people aged 75 to 84	0.3518***	0.5017***	0.4637***	1.0829***	0.3533***	0.3595***
	[0.0223]	[0.0927]	[0.0993]	[0.2985]	[0.0219]	[0.0223]
old people aged 85 and over	0.0328	0.3252**	0.3388**	0.5202	0.0372	0.0402
	[0.0298]	[0.1589]	[0.1726]	[0.4494]	[0.0294]	[0.0297]
reference: regular worker						
fixed-term-contract worker	-0.0067	0.0531	0.0961	0.1152**	-0.0246	-0.1648***
	[0.0518]	[0.0467]	[0.0715]	[0.0469]	[0.0414]	[0.0420]
part-time worker	-1.6703***	-0.8006***	-1.1525***	-0.0022	-1.6418***	-1.6194***
	[0.0174]	[0.0361]	[0.0567]	[0.0328]	[0.0167]	[0.0163]
manager	-3.1752***	-1.4443***	-1.8391***	0.0635	-3.0693***	-3.1039***
	[0.0420]	[0.1315]	[0.1363]	[0.4362]	[0.0403]	[0.0417]
self-employed (have employees)	-4.3791***	-2.1152***	-2.4717***	-0.6902	-4.1793***	-4.2902***
	[0.0383]	[0.1159]	[0.1234]	[0.5094]	[0.0368]	[0.0380]
self-employed (do not have employees)	-4.4884***	-2.9825***	-3.3481***	-2.2995***	-4.4067***	-4.4236***
	[0.0275]	[0.0807]	[0.0885]	[0.2464]	[0.0263]	[0.0270]
family worker	-3.1500***	-2.8683***	-2.9872***	-2.0692***	-3.1523***	-3.1813***
	[0.0259]	[0.0630]	[0.0747]	[0.1918]	[0.0246]	[0.0250]
homeworker	-3.1341***	-3.4356***	-3.4101***	-2.7874***	-3.2286***	-3.2501***
	[0.0368]	[0.0712]	[0.0860]	[0.1569]	[0.0342]	[0.0355]

Table 1. Determinants of commuting distance (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
	Natives	Immigrants	Immigrants (5 years or more)	Immigrants (0-4 years)	Immigrants (5 years or more) and natives	Immigrants (0-4 years) and natives
Korea					-0.8718***	-1.4922***
					[0.0433]	[0.1569]
China		0.2500***	0.2401***	-0.5609***	-0.4390***	-0.2236***
		[0.0635]	[0.0734]	[0.1823]	[0.0549]	[0.0292]
Philippines		-0.1971***	-0.1211*	-0.5141***	-0.0289	-0.4545***
		[0.0585]	[0.0661]	[0.1787]	[0.0362]	[0.0531]
Thailand		0.0962	0.0437	-0.4616**	0.1149	-0.5825***
		[0.0996]	[0.1261]	[0.2023]	[0.1204]	[0.1031]
Indonesia		-0.3396***	-0.5065***	-0.5501***	-1.2311***	-1.6528***
		[0.0858]	[0.1534]	[0.1949]	[0.1323]	[0.0973]
Vietnam		-0.3496***	-0.4325***	-0.8897***	-1.0148***	-1.0691***
		[0.0797]	[0.1452]	[0.1837]	[0.1427]	[0.0554]
UK		-0.0133	0.1065	-0.4232	-0.1589	-2.1475***
		[0.2250]	[0.3097]	[0.2604]	[0.2939]	[0.2011]
US		-0.1603	0.0177	-0.3311	-0.3198*	-1.7329***
		[0.1519]	[0.1994]	[0.2222]	[0.1702]	[0.1614]
Brazil		-0.1414**	-0.3389***	-0.2974	-0.8894***	-1.2587***
		[0.0672]	[0.0754]	[0.1972]	[0.0488]	[0.0883]
Peru		-0.0752	-0.2382**	-0.3793	-0.9047***	-1.2240***
		[0.0933]	[0.0987]	[0.2943]	[0.0841]	[0.2691]
Other foreign countries		0.3608***	0.3474***	0.0129	-0.2303**	-1.4364***
		[0.0868]	[0.1049]	[0.1885]	[0.0916]	[0.0973]
0-4 years since migration		-1.0321***				
		[0.0428]				
prefecture dummies of residence	Yes	Yes	Yes	Yes	Yes	Yes
prefecture dummies of workplace	Yes	Yes	Yes	Yes	Yes	Yes
occupation dummies	Yes	Yes	Yes	Yes	Yes	Yes
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	5.7349***	8.5542***	7.0963***	7.8518***	5.9404***	6.0838***
	[0.1089]	[0.2665]	[0.3913]	[0.5866]	[0.1044]	[0.1059]
R-squared	0.1184	0.0735	0.0723	0.1909	0.1106	0.1186
Observations	4101096	592031	394189	197842	4495285	4298938

Note: The dependent variable is the level of commuting distance (in kilometers) for employed workers. Heteroskedasticity-consistent standard errors are in brackets. ***, **, and * denote the statistical significance at the 1%, 5%, and 10% levels, respectively. The reference group of nationality in columns (2), (3), and (4) is Korea. The reference group of nationality in columns (5) and (6) is Japanese.

Table 2. Determinants of commuting distance for males

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and natives	(6) Immigrants (0-4 years) and natives
education level (reference: primary school or junior high school)						
senior high school	0.4840***	0.2961***	0.2703***	0.1174*	0.4614***	0.4635***
	[0.0344]	[0.0549]	[0.0743]	[0.0626]	[0.0319]	[0.0328]
junior college or technical college	0.9071***	0.8658***	0.8210***	0.6167***	0.8843***	0.8939***
	[0.0479]	[0.0976]	[0.1330]	[0.1263]	[0.0452]	[0.0461]
university (undergraduate or higher)	1.4730***	1.2981***	1.3974***	0.6874***	1.4502***	1.4288***
	[0.0433]	[0.0911]	[0.1142]	[0.1245]	[0.0406]	[0.0417]
age	0.0812***	0.0271***	0.0301***	0.0122**	0.0774***	0.0788***
	[0.0012]	[0.0032]	[0.0037]	[0.0059]	[0.0011]	[0.0011]
married	1.4526***	1.0216***	1.1658***	0.7177***	1.4460***	1.3921***
	[0.0279]	[0.0565]	[0.0797]	[0.0710]	[0.0265]	[0.0267]
kids under 6 years old	0.0529***	0.2707***	0.1672**	0.6797***	0.0555***	0.0554***
	[0.0201]	[0.0587]	[0.0652]	[0.1226]	[0.0192]	[0.0198]
kids aged 6 to 11	0.4414***	0.5952***	0.5890***	0.4715***	0.4506***	0.4413***
	[0.0226]	[0.0731]	[0.0789]	[0.1785]	[0.0219]	[0.0224]
kids aged 12 to 14	0.6744***	0.7214***	0.6670***	1.1378***	0.6723***	0.6801***
	[0.0400]	[0.1327]	[0.1390]	[0.3847]	[0.0386]	[0.0398]
kids aged 15 to 17	0.8678***	0.4557***	0.4476***	0.1738	0.8437***	0.8720***
	[0.0408]	[0.1242]	[0.1312]	[0.2833]	[0.0395]	[0.0406]
kids aged 18 to 19	0.8692***	0.6273***	0.4623***	1.3613***	0.8468***	0.8959***
	[0.0585]	[0.1668]	[0.1763]	[0.4822]	[0.0561]	[0.0583]
old people aged 65 to 74	0.5920***	1.0229***	0.9806***	2.3563	0.6012***	0.5846***
	[0.0477]	[0.2134]	[0.2135]	[1.5453]	[0.0467]	[0.0477]
old people aged 75 to 84	0.5200***	0.6587***	0.6557**	1.5574	0.5209***	0.5207***
	[0.0362]	[0.2552]	[0.2589]	[1.0650]	[0.0359]	[0.0361]
old people aged 85 and over	0.0958*	0.4561	0.4296	-0.3817	0.0982**	0.0965*
	[0.0500]	[0.4905]	[0.5091]	[0.5118]	[0.0499]	[0.0500]
reference: regular worker						
fixed-term-contract worker	0.4729***	0.2077***	0.2402**	0.2636***	0.3747***	0.3552***
	[0.1014]	[0.0747]	[0.1086]	[0.0828]	[0.0758]	[0.0797]
part-time worker	-1.3633***	-0.3435***	-0.5145***	-0.013	-1.2560***	-1.2070***
	[0.0423]	[0.0664]	[0.1041]	[0.0623]	[0.0394]	[0.0384]
manager	-3.7602***	-2.0476***	-2.2762***	-0.588	-3.6389***	-3.7001***
	[0.0528]	[0.1693]	[0.1786]	[0.4277]	[0.0508]	[0.0524]
self-employed (have employees)	-4.9696***	-3.1025***	-3.2340***	-2.1080***	-4.8068***	-4.9172***
	[0.0465]	[0.1459]	[0.1575]	[0.4185]	[0.0447]	[0.0459]
self-employed (do not have employees	-5.1649***	-3.7070***	-3.9120***	-2.3742***	-5.0675***	-5.1160***
	[0.0371]	[0.1109]	[0.1195]	[0.3555]	[0.0354]	[0.0363]
family worker	-4.4168***	-3.5957***	-3.7489***	-3.2239***	-4.3402***	-4.3841***
	[0.0880]	[0.2203]	[0.2295]	[0.3256]	[0.0837]	[0.0866]
homeworker	-5.5606***	-4.4365***	-4.8423***	-2.4499***	-5.6148***	-5.3947***
	[0.1753]	[0.2356]	[0.2529]	[0.4490]	[0.1518]	[0.1706]

Table 2. Determinants of commuting distance for males (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
	Natives	Immigrants	Immigrants (5 years or more)	Immigrants (0-4 years)	Immigrants (5 years or more) and natives	Immigrants (0-4 years) and natives
Korea					-1.3958***	-2.4497***
					[0.0696]	[0.1782]
China		-0.1063	-0.0262	-0.5625***	-1.3037***	-1.8047***
		[0.1033]	[0.1247]	[0.1844]	[0.0993]	[0.0511]
Philippines		-0.4060***	-0.6877***	-0.5044***	-1.4156***	-1.4782***
		[0.1150]	[0.1618]	[0.1899]	[0.1260]	[0.0783]
Thailand		-0.1977	-0.3913	-0.4623**	-1.1679**	-1.6147***
		[0.2400]	[0.4088]	[0.2241]	[0.5206]	[0.1539]
Indonesia		-0.2983**	-0.8805***	-0.4927**	-1.8739***	-1.3651***
		[0.1176]	[0.2068]	[0.1949]	[0.1710]	[0.1096]
Vietnam		-0.7219***	-1.5592***	-0.7607***	-2.5539***	-1.4483***
		[0.1249]	[0.2339]	[0.1926]	[0.2327]	[0.0793]
UK		0.038	0.1617	-0.1616	-0.1395	-1.7579***
		[0.2717]	[0.3639]	[0.3072]	[0.3330]	[0.2427]
US		-0.1229	-0.0836	-0.0401	-0.4615**	-1.4234***
		[0.1953]	[0.2496]	[0.2573]	[0.1964]	[0.1885]
Brazil		-0.4572***	-0.5772***	-0.2628	-1.5201***	-1.9938***
		[0.1056]	[0.1210]	[0.2169]	[0.0764]	[0.1292]
Peru		-0.5481***	-0.6694***	-0.4667	-1.6627***	-2.2106***
		[0.1451]	[0.1560]	[0.4096]	[0.1304]	[0.4157]
Other foreign countries		0.2696**	0.2309	0.2019	-0.4521***	-1.5585***
		[0.1215]	[0.1472]	[0.1960]	[0.1196]	[0.1219]
0-4 years since migration		-1.3489***				
		[0.0651]				
prefecture dummies of residence	Yes	Yes	Yes	Yes	Yes	Yes
prefecture dummies of workplace	Yes	Yes	Yes	Yes	Yes	Yes
occupation dummies	Yes	Yes	Yes	Yes	Yes	Yes
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	5.4241***	7.3906***	7.1289***	6.1181***	5.5866***	5.6073***
	[0.1556]	[0.4266]	[0.6241]	[0.8771]	[0.1512]	[0.1525]
R-squared	0.1207	0.0808	0.0792	0.234	0.1123	0.1219
Observations	2395179	294074	202275	91799	2597454	2486978

Note: The dependent variable is the level of commuting distance (in kilometers) for employed workers. Heteroskedasticity-consistent standard errors are in brackets. ***, **, and * denote the statistical significance at the 1%, 5%, and 10% levels, respectively. The reference group of nationality in columns (2), (3), and (4) is Korea. The reference group of nationality in columns (5) and (6) is Japanese.

Table 3. Determinants of commuting distance for females

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and natives	(6) Immigrants (0-4 years) and natives
education level (reference: primary school or junior high school)						
senior high school	0.0860***	0.1261***	0.1022**	0.0830**	0.0921***	0.0948***
	[0.0161]	[0.0295]	[0.0428]	[0.0339]	[0.0152]	[0.0150]
junior college or technical college	0.0887***	0.2950***	0.1634**	0.3944***	0.0908***	0.1022***
	[0.0205]	[0.0601]	[0.0746]	[0.0884]	[0.0196]	[0.0197]
university (undergraduate or higher)	1.0531***	0.9766***	0.9928***	0.3985***	1.0574***	1.0503***
	[0.0332]	[0.0620]	[0.0744]	[0.1268]	[0.0303]	[0.0320]
age	-0.0123***	-0.0047**	-0.0088***	0.0009	-0.0122***	-0.0120***
	[0.0007]	[0.0023]	[0.0027]	[0.0043]	[0.0007]	[0.0007]
married	0.1744***	0.4616***	0.3797***	0.3944***	0.1917***	0.1938***
	[0.0175]	[0.0371]	[0.0522]	[0.0559]	[0.0166]	[0.0165]
kids under 6 years old	0.0960***	-0.1198**	-0.1722***	-0.1871**	0.0653***	0.0999***
	[0.0177]	[0.0465]	[0.0526]	[0.0927]	[0.0168]	[0.0174]
kids aged 6 to 11	-0.2850***	-0.4078***	-0.4154***	0.0431	-0.2978***	-0.2856***
	[0.0106]	[0.0322]	[0.0340]	[0.1189]	[0.0101]	[0.0105]
kids aged 12 to 14	-0.1945***	-0.3509***	-0.3527***	0.3896	-0.2128***	-0.1955***
	[0.0135]	[0.0399]	[0.0391]	[0.3154]	[0.0128]	[0.0136]
kids aged 15 to 17	-0.2117***	-0.2118***	-0.2273***	0.6534***	-0.2168***	-0.2120***
	[0.0136]	[0.0420]	[0.0427]	[0.1964]	[0.0130]	[0.0136]
kids aged 18 to 19	-0.3302***	-0.1774***	-0.2327***	0.1286	-0.3241***	-0.3193***
	[0.0196]	[0.0528]	[0.0641]	[0.0925]	[0.0190]	[0.0192]
old people aged 65 to 74	0.0765***	0.2604***	0.1823**	1.0861***	0.0851***	0.0853***
	[0.0178]	[0.0782]	[0.0819]	[0.2307]	[0.0175]	[0.0177]
old people aged 75 to 84	0.2192***	0.5436***	0.3947***	1.0811***	0.2199***	0.2329***
	[0.0173]	[0.0799]	[0.0826]	[0.2337]	[0.0168]	[0.0172]
old people aged 85 and over	0.0677***	0.3165**	0.2169*	0.5973*	0.0661***	0.0762***
	[0.0213]	[0.1234]	[0.1313]	[0.3612]	[0.0211]	[0.0213]
reference: regular worker						
fixed-term-contract worker	0.2710***	0.2163***	0.2342***	-0.0029	0.2574***	0.1248***
	[0.0477]	[0.0528]	[0.0867]	[0.0469]	[0.0401]	[0.0395]
part-time worker	-1.1447***	-0.5739***	-1.0612***	0.0708**	-1.1355***	-1.0687***
	[0.0156]	[0.0395]	[0.0637]	[0.0340]	[0.0153]	[0.0147]
manager	-1.3863***	-0.8048***	-1.2441***	1.7738*	-1.3668***	-1.3333***
	[0.0552]	[0.2091]	[0.1997]	[0.9663]	[0.0541]	[0.0561]
self-employed (have employees)	-1.7729***	-0.9324***	-1.3302***	1.3483	-1.6704***	-1.7037***
	[0.0672]	[0.2080]	[0.2170]	[1.0891]	[0.0696]	[0.0676]
self-employed (do not have employe	-2.1778***	-2.1049***	-2.4772***	-2.0330***	-2.2157***	-2.1411***
	[0.0390]	[0.1065]	[0.1227]	[0.2348]	[0.0372]	[0.0385]
family worker	-2.2100***	-2.0868***	-2.3736***	-1.3754***	-2.2312***	-2.1703***
	[0.0244]	[0.0639]	[0.0800]	[0.1815]	[0.0234]	[0.0236]
homeworker	-2.7823***	-2.6360***	-3.0218***	-2.1539***	-2.8187***	-2.6972***
	[0.0343]	[0.0742]	[0.0910]	[0.1629]	[0.0320]	[0.0333]

Table 3. Determinants of commuting distance for females (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
	Natives	Immigrants	Immigrants (5 years or more)	Immigrants (0-4 years)	Immigrants (5 years or more) and natives	Immigrants (0-4 years) and natives
Korea					-0.1611***	-0.2598
					[0.0460]	[0.3132]
China		0.5260***	0.4552***	-0.431	0.2603***	-1.0251***
		[0.0717]	[0.0782]	[0.2948]	[0.0543]	[0.0320]
Philippines		0.4198***	0.1912***	-0.1504	0.0176	-0.4083***
		[0.0616]	[0.0656]	[0.2841]	[0.0332]	[0.0659]
Thailand		0.5595***	0.2597**	-0.285	0.2307**	-0.2652**
		[0.0936]	[0.1113]	[0.3061]	[0.0934]	[0.1155]
Indonesia		0.4955***	0.1387	-0.0245	0.1082	-0.7917***
		[0.1459]	[0.2087]	[0.3682]	[0.1975]	[0.1853]
Vietnam		0.4238***	0.7087***	-0.7843***	0.2631*	-1.3239***
		[0.0918]	[0.1564]	[0.2976]	[0.1415]	[0.0633]
UK		-0.9663***	-0.1491	-1.8718***	0.5415	-2.9971***
		[0.3328]	[0.5166]	[0.4289]	[0.5005]	[0.3046]
US		-0.8617***	-0.0248	-1.3946***	0.7325**	-2.5967***
		[0.2405]	[0.3439]	[0.2823]	[0.3339]	[0.2600]
Brazil		0.4798***	0.0369	0.0303	-0.1785***	-0.7114***
		[0.0756]	[0.0837]	[0.3062]	[0.0540]	[0.1107]
Peru		0.5170***	0.1852*	0.0461	-0.1154	-0.3998
		[0.1015]	[0.1075]	[0.4187]	[0.0875]	[0.2869]
Other foreign countries		0.2319**	0.2722**	-0.5656*	0.3734***	-1.1637***
		[0.1007]	[0.1177]	[0.3091]	[0.1034]	[0.1304]
0-4 years since migration		-0.9033***				
		[0.0528]				
prefecture dummies of residence	Yes	Yes	Yes	Yes	Yes	Yes
prefecture dummies of workplace	Yes	Yes	Yes	Yes	Yes	Yes
occupation dummies	Yes	Yes	Yes	Yes	Yes	Yes
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	10.2177***	9.2792***	8.4978***	6.2419***	10.1817***	10.1577***
	[0.1762]	[0.3807]	[0.4801]	[1.1237]	[0.1598]	[0.1740]
R-squared	0.0847	0.0946	0.1003	0.1805	0.0814	0.0847
Observations	1705917	297957	191914	106043	1897831	1811960

Note: The dependent variable is the level of commuting distance (in kilometers) for employed workers. Heteroskedasticity-consistent standard errors are in brackets. ***, **, and * denote the statistical significance at the 1%, 5%, and 10% levels, respectively. The reference group of nationality in columns (2), (3), and (4) is Korea. The reference group of nationality in columns (5) and (6) is Japanese.

Table 4. Determinants of residential preference

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and	(6) Immigrants (0-4 years) and natives
education level (reference: primary school or junior high school)						
senior high school	-326.7470***	-200.3807***	-245.1348***	-23.0307***	-320.1841***	-304.6626***
	[2.3547]	[5.1196]	[6.4368]	[7.9948]	[2.2083]	[2.2615]
junior college or technical col	-111.0502***	-12.3577	-80.0608***	186.7814***	-108.7271***	-87.8002***
	[3.1560]	[8.9926]	[10.9123]	[15.8454]	[3.0041]	[3.0739]
university (undergraduate or l	139.5232***	119.5338***	1.1084	445.7202***	113.6933***	167.0402***
	[3.2241]	[7.1011]	[8.4955]	[14.2792]	[2.9979]	[3.1315]
age	-14.6855***	-4.3992***	-8.6602***	4.8523***	-13.9869***	-13.7731***
	[0.0916]	[0.2495]	[0.2771]	[0.6227]	[0.0867]	[0.0903]
married	-202.2387***	-127.5173***	-248.5982***	109.3619***	-211.9637***	-172.2080***
	[2.3486]	[5.1442]	[6.4092]	[9.0084]	[2.2121]	[2.2614]
male	15.2148***	140.5965***	116.1124***	84.2446***	34.3753***	27.2096***
	[2.2476]	[4.8594]	[6.0095]	[8.3753]	[2.1055]	[2.1580]
kids under 6 years old	-136.8887***	-117.0011***	-140.2128***	-36.9436***	-136.3792***	-128.4617***
	[1.7206]	[4.6130]	[5.0963]	[11.1624]	[1.6376]	[1.6996]
kids aged 6 to 11	-98.8796***	-85.6411***	-92.6621***	77.4920***	-97.2430***	-95.0164***
	[1.5768]	[4.6540]	[4.8859]	[15.8282]	[1.5080]	[1.5686]
kids aged 12 to 14	-83.1563***	-57.6772***	-58.3585***	82.9987***	-78.7678***	-79.4631***
	[2.4147]	[7.1754]	[7.4034]	[28.5645]	[2.3083]	[2.4080]
kids aged 15 to 17	-79.9779***	-55.5532***	-54.9816***	110.5824***	-74.2276***	-77.0329***
	[2.4196]	[7.6447]	[7.8775]	[31.1393]	[2.3278]	[2.4140]
kids aged 18 to 19	-37.9467***	-13.6856	0.0975	93.3727***	-30.7656***	-38.8814***
	[3.5238]	[9.7621]	[10.8679]	[20.5930]	[3.3699]	[3.4788]
old people aged 65 to 74	-158.3060***	-146.5110***	-120.0069***	-203.7738***	-153.2477***	-160.3133***
	[2.7289]	[11.3937]	[12.0510]	[34.6384]	[2.6846]	[2.7214]
old people aged 75 to 84	-276.0827***	-309.8965***	-260.8318***	-593.4337***	-270.4138***	-276.0451***
	[2.2706]	[13.1934]	[14.5209]	[30.3282]	[2.2643]	[2.2636]
old people aged 85 and over	-279.5939***	-387.0632***	-334.7303***	-664.7294***	-277.2480***	-283.4926***
	[3.2413]	[22.0139]	[23.9032]	[55.5030]	[3.2328]	[3.2366]
reference: labor force nonparticipation						
regular worker	74.6470***	-218.4039***	-202.6058***	39.6673	-3.8375	74.1273***
	[9.6658]	[15.6940]	[17.7424]	[35.9377]	[8.4333]	[9.3511]
fixed-term-contract worker	286.6139***	-188.2939***	-187.3939***	-0.5963	115.6375***	203.4404***
	[11.9543]	[16.1529]	[18.3811]	[36.2676]	[9.9267]	[11.0069]
part-time worker	74.2975***	-183.7475***	-166.3431***	52.9674	0.9986	69.5721***
	[9.6511]	[15.4860]	[17.2764]	[35.8405]	[8.4119]	[9.3371]
manager	263.3473***	-201.9952***	-152.1864***	209.6961***	164.2477***	255.3200***
	[10.6823]	[21.8633]	[23.5507]	[64.5405]	[9.5004]	[10.3994]
self-employed (have employe	144.9809***	-298.1257***	-241.5588***	-293.1021***	52.9498***	136.0348***
	[11.2030]	[23.6729]	[24.9444]	[111.9619]	[10.0372]	[10.9344]
self-employed (do not have e	143.5070***	-272.9200***	-242.6782***	44.4882	53.5307***	145.0190***
	[10.1736]	[20.4638]	[21.9517]	[67.0586]	[8.9958]	[9.8777]
family worker	113.9868***	-198.5833***	-157.5181***	-112.6258*	39.9791***	122.0354***
	[10.5007]	[23.5196]	[25.4683]	[68.2133]	[9.3819]	[10.2074]
homeworker	213.9468***	511.4071***	332.1909***	937.6312***	209.0621***	278.5755***
	[22.4241]	[59.9670]	[66.1380]	[134.6746]	[21.3458]	[22.2102]
unemployed worker	-121.4739***	-208.8011***	-213.4966***	5.0569	-145.8721***	-114.4534***
	[4.9500]	[10.5792]	[11.5629]	[26.6089]	[4.5588]	[4.8707]

Table 4. Determinants of residential preference (continued)

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and	(6) Immigrants (0-4 years) and natives
Korea					1054.2181***	804.2752***
					[5.1865]	[21.8277]
China		-323.2463***	-220.5319***	-407.4894***	751.6357***	-304.2217***
		[7.4134]	[8.1721]	[24.0973]	[5.8689]	[5.5119]
Philippines		-723.8750***	-750.4424***	-729.5664***	98.4955***	-368.6806***
		[8.9382]	[10.1610]	[25.7928]	[7.6441]	[12.1186]
Thailand		-886.5650***	-924.3291***	-711.8810***	-32.8571*	-416.5306***
		[15.6171]	[18.3872]	[34.7326]	[16.9703]	[26.8852]
Indonesia		-661.2123***	-633.7010***	-607.7622***	200.2425***	-453.6822***
		[17.4711]	[29.0503]	[29.8941]	[27.7609]	[17.0101]
Vietnam		-748.8002***	-1102.3612***	-394.5995***	-195.8541***	-405.8725***
		[15.5911]	[24.0809]	[28.8471]	[23.1584]	[17.0463]
UK		3.5433	-3.5684	-39.4123	1055.6651***	697.7046***
		[26.8881]	[32.1962]	[51.3172]	[31.7956]	[47.5592]
US		-354.7054***	-334.7332***	-467.9320***	668.9326***	150.6459***
		[17.2274]	[21.2617]	[34.3173]	[19.6365]	[23.3721]
Brazil		-1042.0917***	-1143.5663***	-816.7998***	-439.9416***	-485.0178***
		[8.5873]	[9.5954]	[26.9340]	[5.9449]	[12.8816]
Peru		-1386.5945***	-1451.7228***	-1077.1659***	-644.7561***	-595.8782***
		[15.7762]	[16.7087]	[53.7356]	[14.2123]	[46.9339]
Other foreign countries		-75.3536***	-83.6799***	-259.6335***	1032.6598***	381.0352***
		[8.6255]	[9.4304]	[26.0633]	[7.5357]	[14.4734]
0-4 years since migration		-400.2608***				
		[6.1545]				
prefecture dummies of home	Yes	Yes	Yes	Yes	Yes	Yes
occupation dummies	Yes	Yes	Yes	Yes	Yes	Yes
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2402.4496***	2626.3720***	3382.1864***	1439.3622***	2376.1483***	2311.3355***
	[5.6686]	[16.5868]	[23.3260]	[33.3807]	[5.3253]	[5.5530]
R-squared	0.7118	0.7991	0.7884	0.7965	0.7368	0.7151
Observations	5723950	1012852	751528	261324	6475478	5985274

Note: The dependent variable is the level of population density within the circle of a 10-km radius (in people per square km of inhabitable land area) for employed and unemployed workers, and individuals who are out of labor force. Heteroskedasticity-consistent standard errors are in brackets. ***, **, and * denote the statistical significance at the 1%, 5%, and 10% levels, respectively. The reference group of nationality in columns (2), (3), and (4) is Korea. The reference group of nationality in columns (5) and (6) is Japanese.

Table 5. Determinants of residential preference for each education level

	Primary school or junior high school	Senior high school	Junior college or technical college	University (undergraduate or higher)
age	4.4302***	2.5007***	-2.7719***	2.1003***
	[0.5825]	[0.4332]	[1.0323]	[0.6381]
married	-1.7794	-30.6375***	-49.8529**	-30.5968**
	[10.3876]	[8.7140]	[21.2958]	[13.3581]
male	97.1569***	134.8954***	114.5082***	6.8969
	[10.8420]	[8.2105]	[20.3648]	[11.9197]
kids under 6 years old	-21.8687*	-54.2029***	-88.3200***	-77.8334***
	[11.9111]	[7.9452]	[16.2777]	[9.3235]
kids aged 6 to 11	-32.6723***	-41.5814***	-86.0396***	-75.4850***
	[11.6321]	[7.5200]	[16.1477]	[10.1265]
kids aged 12 to 14	-12.8408	-19.1649*	-63.1232**	-71.9036***
	[17.4081]	[11.2609]	[25.7406]	[16.6662]
kids aged 15 to 17	11.3811	-17.0854	-52.6493*	-76.9449***
	[18.9448]	[11.8209]	[27.9589]	[18.4094]
kids aged 18 to 19	82.8589***	33.9335**	36.6892	-19.9672
	[19.8292]	[15.2300]	[40.7948]	[27.6031]
old people aged 65 to 74	-73.9882***	-90.5551***	-173.6627***	-163.1600***
	[25.4226]	[17.0166]	[44.0289]	[32.0442]
old people aged 75 to 84	-338.1191***	-292.6363***	-401.0252***	-389.1471***
	[29.4319]	[18.1223]	[47.9416]	[36.1139]
old people aged 85 and over	-466.5017***	-371.3296***	-406.3461***	-419.1494***
	[44.2958]	[30.2132]	[88.2299]	[62.8951]
reference: labor force nonparticipation				
regular worker	-22.3281	-64.3281**	137.2266**	194.0672***
	[36.7676]	[25.8946]	[57.9097]	[38.4483]
fixed-term-contract worker	-63.0153*	-51.6788**	83.0279	49.4253
	[36.7662]	[26.0882]	[60.9681]	[42.1862]
part-time worker	13.0488	-4.9408	132.7532**	168.8745***
	[36.7755]	[25.4416]	[56.0742]	[38.5204]
manager	-78.2375	-44.3171	175.9632**	206.8334***
	[64.3409]	[36.7452]	[76.0896]	[45.4585]
self-employed (have employees)	-253.0196***	-135.7105***	30.4711	131.0327**
	[61.5441]	[37.6211]	[84.0372]	[51.9579]
self-employed (do not have employees)	-63.9597	-71.9747**	0.6267	53.7346
	[52.6127]	[33.4565]	[70.5162]	[45.5912]
family worker	-11.4621	-71.2797**	14.177	-31.2926
	[56.2384]	[35.6328]	[75.6764]	[60.5240]
homeworker	773.2352***	591.7545***	880.1144***	752.2128***
	[130.7187]	[93.1439]	[199.5344]	[154.2288]
unemployed worker	-136.0465***	-46.8895***	9.1472	141.8501***
	[23.2698]	[17.0108]	[42.1810]	[27.3025]

Table 5. Determinants of residential preference for each education level (continued)

	Primary school or junior high school	Senior high school	Junior college or technical college	University (undergraduate or higher)
reference: Korea				
China	-429.0893***	-346.4106***	-177.6788***	-179.9068***
	[22.1090]	[13.2857]	[24.5089]	[14.9458]
Philippines	-635.7591***	-575.8990***	-701.2567***	-798.0713***
	[25.5506]	[14.1661]	[31.1869]	[20.9538]
Thailand	-775.2032***	-753.5660***	-849.6464***	-624.8277***
	[30.6956]	[25.9205]	[61.5296]	[42.8278]
Indonesia	-460.7787***	-656.7840***	-675.7593***	-607.9741***
	[68.6089]	[22.8854]	[66.5315]	[44.9695]
Vietnam	-815.5542***	-550.3868***	-610.2007***	-601.9183***
	[42.3379]	[22.8368]	[48.6340]	[46.3265]
UK	69.078	-59.8742	-196.1452*	-50.8466
	[266.5310]	[97.4543]	[108.9276]	[33.8792]
US	-775.2020***	-731.1730***	-849.2673***	-374.5909***
	[191.0801]	[51.5392]	[79.1190]	[22.5525]
Brazil	-940.9148***	-941.6664***	-990.4486***	-917.7396***
	[21.5923]	[13.5197]	[38.2530]	[26.2587]
Peru	-1197.2946***	-1207.3213***	-1385.9535***	-1321.6088***
	[32.5302]	[25.8034]	[48.8823]	[44.0548]
Other foreign countries	-468.3703***	-288.1698***	-320.8189***	-220.5281***
	[33.7725]	[18.9095]	[33.7142]	[17.3638]
0-4 years since migration	-248.1976***	-282.6137***	-329.4655***	-40.7151***
	[15.4045]	[10.5068]	[23.2258]	[12.3875]
prefecture dummies of home	Yes	Yes	Yes	Yes
occupation dummies	Yes	Yes	Yes	Yes
industry dummies	Yes	Yes	Yes	Yes
Constant	1379.1276***	1787.0099***	2608.7803***	2721.6884***
	[36.9547]	[28.1668]	[66.6559]	[40.3061]
R-squared	0.7584	0.7519	0.7569	0.7647
Observations	152083	335095	77123	216037

Note: The dependent variable is the level of population density within the circle of a 10-km radius (in people per square km of inhabitable land area) for employed and unemployed workers, and individuals who are out of labor force. The heteroskedasticity-consistent standard errors are in brackets. ***, **, and * denote the statistical significance at the 1%, 5%, and 10% levels, respectively.

Appendix

Table A1 (1). Summary statistics for immigrants who live in Japan for 5 years or more

Variable	Obs	Mean	Std. Dev.	Min	Max
commuting distance	402,521	7.597743	13.66555	0.319076	497.7098
residence (population density)	855,580	5867.974	4878.8	0.364388	16191.48
primary school or junior high school graduated	855,580	0.105845	0.30764	0	1
senior high school graduated	855,580	0.288472	0.453052	0	1
junior college or technical college graduated	855,580	0.067994	0.251735	0	1
university (undergraduate or higher) graduated	855,580	0.182773	0.386481	0	1
age	855,580	41.24463	10.90173	15	64
married	855,580	0.692789	0.461338	0	1
male	855,580	0.430849	0.495195	0	1
unemployed	527,896	0.081857	0.274147	0	1
kids under 6 years old	855,580	0.227053	0.521983	0	8
kids aged 6 to 11	855,580	0.217857	0.51286	0	5
kids aged 12 to 14	855,580	0.10391	0.334479	0	4
kids aged 15 to 17	855,580	0.094247	0.320874	0	4
kids aged 18 to 19	855,580	0.052431	0.231502	0	3
old people aged 65 to 74	855,580	0.0412	0.206777	0	4
old people aged 75 to 84	855,580	0.021982	0.156465	0	3
old people aged 85 and over	855,580	0.008473	0.094209	0	2
unemployed	855,580	0.050506	0.218987	0	1
employment status					
regular worker	780,940	0.196605	0.397432	0	1
fixed-term-contract worker	780,940	0.065192	0.246864	0	1
part-time worker	780,940	0.160553	0.367118	0	1
manager	780,940	0.036456	0.187422	0	1
self-employed (have employees)	780,940	0.019374	0.137836	0	1
self-employed (do not have employees)	780,940	0.030032	0.170675	0	1
family worker	780,940	0.015337	0.122888	0	1
homeworker	780,940	0.001516	0.038908	0	1
nationality					
Korea	819,652	0.271532	0.44475	0	1
China	819,652	0.242756	0.428749	0	1
Philippines	819,652	0.115914	0.320122	0	1
Thailand	819,652	0.02296	0.149775	0	1
Indonesia	819,652	0.007564	0.086643	0	1
Vietnam	819,652	0.012398	0.110654	0	1
UK	819,652	0.007335	0.085329	0	1
US	819,652	0.021551	0.145211	0	1
Brazil	819,652	0.110016	0.31291	0	1
Peru	819,652	0.025939	0.158954	0	1
Other foreign countries	819,652	0.162036	0.368484	0	1

Note: The unit of commuting distance is kilometers. Workers who commute over 500 kilometers are dropped as outliers. The unit of residence (population density) is population per squared kilometer. 0 for unemployed includes both employed and labor force nonparticipation. 0 for each variable of employment status includes all of other employment statuses, unemployed, and labor force nonparticipation.

Table A1 (2). Summary statistics for immigrants who live in Japan for 0-4 years

Variable	Obs	Mean	Std. Dev.	Min	Max
commuting distance	200,115	6.52848	8.084172	0.319076	495.2546
residence (population density)	267,090	3125.161	4014.689	0.283772	16191.48
primary school or junior high school graduated	267,090	0.238324	0.426059	0	1
senior high school graduated	267,090	0.356442	0.478949	0	1
junior college or technical college graduated	267,090	0.076147	0.265233	0	1
university (undergraduate or higher) graduated	267,090	0.231858	0.42202	0	1
age	267,090	29.9779	8.219248	15	64
married	267,090	0.543768	0.498082	0	1
male	267,090	0.404411	0.490779	0	1
unemployed	215,909	0.038942	0.193458	0	1
kids under 6 years old	267,090	0.141039	0.414041	0	4
kids aged 6 to 11	267,090	0.055655	0.271555	0	4
kids aged 12 to 14	267,090	0.021446	0.155535	0	3
kids aged 15 to 17	267,090	0.018162	0.142281	0	3
kids aged 18 to 19	267,090	0.028028	0.168599	0	3
old people aged 65 to 74	267,090	0.013767	0.122567	0	3
old people aged 75 to 84	267,090	0.010075	0.107975	0	3
old people aged 85 and over	267,090	0.003845	0.064206	0	2
unemployed	267,090	0.03148	0.174611	0	1
employment status					
regular worker	261,398	0.357956	0.4794	0	1
fixed-term-contract worker	261,398	0.108647	0.311196	0	1
part-time worker	261,398	0.282814	0.450368	0	1
manager	261,398	0.008749	0.093127	0	1
self-employed (have employees)	261,398	0.002096	0.045739	0	1
self-employed (do not have employees)	261,398	0.006389	0.079674	0	1
family worker	261,398	0.004399	0.066182	0	1
homeworker	261,398	0.000987	0.031401	0	1
nationality					
Korea	267,013	0.050964	0.219924	0	1
China	267,013	0.553254	0.497157	0	1
Philippines	267,013	0.093857	0.29163	0	1
Thailand	267,013	0.021632	0.145479	0	1
Indonesia	267,013	0.03435	0.182128	0	1
Vietnam	267,013	0.040391	0.196876	0	1
UK	267,013	0.009089	0.094905	0	1
US	267,013	0.034429	0.182329	0	1
Brazil	267,013	0.053368	0.224767	0	1
Peru	267,013	0.006427	0.079909	0	1
Other foreign countries	267,013	0.102239	0.302962	0	1

Note: The unit of commuting distance is kilometers. Workers who commute over 500 kilometers are dropped as outliers. The unit of residence (population density) is population per squared kilometer. 0 for unemployed includes both employed and labor force nonparticipation. 0 for each variable of employment status includes all of other employment statuses, unemployed, and labor force nonparticipation.

Table A1 (3). Summary statistics for natives

Variable	Obs	Mean	Std. Dev.	Min	Max
commuting distance	4,117,731	9.087745	15.46912	0.319076	499.7936
residence (population density)	5,858,404	3066.38	3756.444	0.011757	16191.48
primary school or junior high school graduated	5,858,404	0.098704	0.298265	0	1
senior high school graduated	5,858,404	0.439028	0.496269	0	1
junior college or technical college graduated	5,858,404	0.1553	0.36219	0	1
university (undergraduate or higher) graduated	5,858,404	0.194571	0.39587	0	1
age	5,858,404	46.95107	11.53134	15	64
married	5,858,404	0.789219	0.407863	0	1
male	5,858,404	0.503456	0.499988	0	1
unemployed	4,501,345	0.044922	0.207133	0	1
kids under 6 years old	5,858,404	0.218069	0.532281	0	6
kids aged 6 to 11	5,858,404	0.222664	0.536525	0	6
kids aged 12 to 14	5,858,403	0.110566	0.345916	0	6
kids aged 15 to 17	5,858,404	0.107653	0.342444	0	9
kids aged 18 to 19	5,858,404	0.058366	0.242319	0	7
old people aged 65 to 74	5,858,404	0.075833	0.280584	0	9
old people aged 75 to 84	5,858,404	0.071563	0.287263	0	4
old people aged 85 and over	5,858,404	0.040447	0.206566	0	4
unemployed	5,858,404	0.034516	0.182551	0	1
employment status					
regular worker	5,723,951	0.407596	0.491387	0	1
fixed-term-contract worker	5,723,951	0.013971	0.117369	0	1
part-time worker	5,723,951	0.169977	0.375612	0	1
manager	5,723,951	0.042618	0.201995	0	1
self-employed (have employees)	5,723,951	0.018054	0.133145	0	1
self-employed (do not have employees)	5,723,951	0.0485	0.21482	0	1
family worker	5,723,951	0.025493	0.157618	0	1
homeworker	5,723,951	0.001381	0.037139	0	1

Note: The unit of commuting distance is kilometers. Workers who commute over 500 kilometers are dropped as outliers. The unit of residence (population density) is population per squared kilometer. 0 for unemployed includes both employed and labor force nonparticipation. 0 for each variable of employment status includes all of other employment statuses, unemployed, and labor force nonparticipation.

Table A2. Determinants of commuting distance for married males and females

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and natives	(6) Immigrants (0-4 years) and natives
education level (reference: primary school or junior high school)						
senior high school	0.1857***	0.0053	0.0066	0.2455	0.1645***	0.1790***
	[0.03]	[0.09]	[0.10]	[0.16]	[0.03]	[0.03]
junior college or technical college	0.3090***	0.0072	-0.0599	0.4638	0.2708***	0.3035***
	[0.04]	[0.13]	[0.14]	[0.35]	[0.04]	[0.04]
university (undergraduate or higher)	1.5103***	1.1204***	1.1869***	0.4876**	1.5043***	1.5056***
	[0.04]	[0.14]	[0.15]	[0.24]	[0.04]	[0.04]
age	0.0368***	-0.0074	-0.0039	-0.0236**	0.0332***	0.0354***
	[0.00]	[0.01]	[0.01]	[0.01]	[0.00]	[0.00]
spouse's education level (reference: primary school or junior high school)						
senior high school	0.1448***	0.1195	0.0802	0.1628	0.1486***	0.1482***
	[0.03]	[0.09]	[0.09]	[0.16]	[0.03]	[0.03]
junior college or technical college	0.2652***	0.5786***	0.5123***	0.2423	0.2855***	0.2745***
	[0.04]	[0.15]	[0.16]	[0.26]	[0.04]	[0.04]
university (undergraduate or higher)	0.1582***	0.3322***	0.3393**	0.2444	0.1599***	0.1459***
	[0.04]	[0.12]	[0.13]	[0.27]	[0.04]	[0.04]
spouse's age	0.0059**	0.0241***	0.0218***	0.0263**	0.0089***	0.0069***
	[0.00]	[0.01]	[0.01]	[0.01]	[0.00]	[0.00]
male	2.4992***	1.4200***	1.5446***	0.7339***	2.4395***	2.4693***
	[0.03]	[0.09]	[0.11]	[0.14]	[0.03]	[0.03]
kids under 6 years old	-0.1949***	-0.017	-0.0035	-0.1322	-0.1837***	-0.1952***
	[0.02]	[0.06]	[0.07]	[0.10]	[0.02]	[0.02]
kids aged 6 to 11	0.0841***	0.1018	0.106	0.0674	0.0881***	0.0819***
	[0.02]	[0.06]	[0.07]	[0.12]	[0.02]	[0.02]
kids aged 12 to 14	0.2387***	0.1035	0.0787	0.3577	0.2339***	0.2370***
	[0.03]	[0.09]	[0.10]	[0.26]	[0.02]	[0.03]
kids aged 15 to 17	0.3413***	0.2397**	0.2449**	0.2517	0.3423***	0.3386***
	[0.03]	[0.10]	[0.10]	[0.24]	[0.03]	[0.03]
kids aged 18 to 19	0.2849***	0.4395***	0.3648**	0.5983	0.2888***	0.2894***
	[0.04]	[0.14]	[0.14]	[0.57]	[0.04]	[0.04]
old people aged 65 to 74	0.3388***	0.4468**	0.3842*	1.2657**	0.3329***	0.3380***
	[0.03]	[0.21]	[0.22]	[0.60]	[0.03]	[0.03]
old people aged 75 to 84	0.2325***	0.301	0.3237	-0.201	0.2290***	0.2315***
	[0.02]	[0.21]	[0.21]	[0.48]	[0.02]	[0.02]
old people aged 85 and over	-0.0246	0.544	0.4549	-0.4584	-0.025	-0.0254
	[0.03]	[0.38]	[0.38]	[1.89]	[0.03]	[0.03]
reference: regular worker						
fixed-term-contract worker	-0.1885**	-0.0008	-0.0543	0.2952	-0.2134***	-0.1955***
	[0.08]	[0.11]	[0.12]	[0.19]	[0.06]	[0.07]
part-time worker	-1.7897***	-1.1583***	-1.2889***	-0.2118	-1.7873***	-1.7816***
	[0.02]	[0.08]	[0.09]	[0.17]	[0.02]	[0.02]
manager	-2.9823***	-1.2033***	-1.3080***	-0.2943	-2.9068***	-2.9630***
	[0.05]	[0.20]	[0.22]	[0.43]	[0.05]	[0.05]
self-employed (have employees)	-4.2846***	-2.3591***	-2.4949***	-2.1551***	-4.2147***	-4.2710***
	[0.05]	[0.20]	[0.21]	[0.49]	[0.05]	[0.05]
self-employed (do not have employees)	-4.6142***	-3.0693***	-3.2803***	-1.4805*	-4.5857***	-4.5979***
	[0.04]	[0.17]	[0.17]	[0.77]	[0.04]	[0.04]
family worker	-3.2707***	-2.9534***	-2.9729***	-2.3699***	-3.2890***	-3.2760***
	[0.04]	[0.21]	[0.23]	[0.49]	[0.04]	[0.04]
homeworker	-2.8961***	-3.4673***	-3.3970***	-3.5881***	-2.9736***	-2.9022***
	[0.04]	[0.14]	[0.15]	[0.35]	[0.04]	[0.04]

Table A2. Determinants of commuting distance for married males and females (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
	Natives	Immigrants	Immigrants (5 years or more)	Immigrants (0-4 years)	Immigrants (5 years or more) and natives	Immigrants (0-4 years) and natives
spouse's employment status (reference: labor force nonparticipation)						
regular worker	-0.2401	0.345	0.1929	0.9379*	-0.1218	-0.1594
	[0.31]	[0.28]	[0.32]	[0.50]	[0.26]	[0.30]
fixed-term-contract worker	-0.0765	0.4724	0.3166	1.0608**	0.1376	0.046
	[0.32]	[0.29]	[0.33]	[0.51]	[0.27]	[0.31]
part-time worker	0.4189	0.6309**	0.4891	1.0305**	0.5505**	0.5100*
	[0.31]	[0.28]	[0.32]	[0.50]	[0.26]	[0.30]
manager	-1.6552***	-0.8087**	-1.0383***	0.9335	-1.5118***	-1.5754***
	[0.31]	[0.35]	[0.38]	[0.70]	[0.26]	[0.30]
self-employed (have employees)	0.0036	0.589	0.3974	1.8930**	0.1432	0.0847
	[0.31]	[0.38]	[0.42]	[0.80]	[0.27]	[0.30]
self-employed (do not have employees)	-0.0945	0.7738**	0.5164	1.8183**	0.0424	-0.0105
	[0.31]	[0.37]	[0.41]	[0.72]	[0.26]	[0.30]
family worker	-1.1054***	-0.6410*	-0.8321**	1.0537	-0.9615***	-1.0140***
	[0.31]	[0.33]	[0.37]	[0.76]	[0.26]	[0.30]
homeworker	0.6611*	-0.0396	-0.442	2.1208**	0.6642*	0.7314*
	[0.40]	[0.46]	[0.51]	[1.00]	[0.35]	[0.39]
unemployed (spouse)	-0.4171***	-0.0314	-0.1253	0.7088**	-0.4195***	-0.4117***
	[0.07]	[0.16]	[0.18]	[0.33]	[0.07]	[0.07]
Korea					-1.3383***	-3.7165***
					[0.08]	[0.24]
China		0.3714***	0.2499*	0.8079***	-1.1195***	-2.1370***
		[0.12]	[0.13]	[0.26]	[0.09]	[0.15]
Philippines		-0.0827	-0.1933	0.6289**	-0.5862***	-0.7811***
		[0.13]	[0.14]	[0.29]	[0.09]	[0.16]
Thailand		0.1962	0.1812	0.3087	-0.3075	-2.1993***
		[0.33]	[0.37]	[0.70]	[0.52]	[0.62]
Indonesia		-0.7027**	-0.9023***	0.1338	-1.7518***	-2.0304***
		[0.28]	[0.33]	[0.48]	[0.30]	[0.44]
Vietnam		-0.8295***	-0.9883***	0.4964	-2.3179***	-1.7335***
		[0.18]	[0.18]	[0.67]	[0.14]	[0.61]
UK		-1.5765***	-1.0914*	-0.6345	-1.2399**	-4.2744***
		[0.44]	[0.59]	[0.61]	[0.58]	[0.58]
US		-1.2711***	-1.1554**	-0.1185	-1.6092***	-3.3004***
		[0.39]	[0.54]	[0.49]	[0.42]	[0.43]
Brazil		-0.2596**	-0.2732**	-0.0196	-1.0455***	-1.2445***
		[0.12]	[0.13]	[0.31]	[0.07]	[0.14]
Peru		-0.4108***	-0.4307***	0.131	-1.3658***	-1.5434***
		[0.15]	[0.16]	[0.45]	[0.12]	[0.44]
Other foreign countries		-0.4692***	-0.5209***	0.3743	-1.5162***	-2.7060***
		[0.15]	[0.18]	[0.26]	[0.16]	[0.17]
0-4 years since migration		-0.8245***				
		[0.09]				
prefecture dummies of home	Yes	Yes	Yes	Yes	Yes	Yes
prefecture dummies of work	Yes	Yes	Yes	Yes	Yes	Yes
occupation dummies	Yes	Yes	Yes	Yes	Yes	Yes
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	7.4859***	8.0620***	8.3361***	6.6218***	7.5407***	7.5248***
	[0.14]	[0.67]	[0.76]	[1.08]	[0.14]	[0.14]
R-squared	0.1311	0.0989	0.0973	0.3053	0.1253	0.1308
Observations	2882508	175643	150469	25174	3032977	2907682

Note: The dependent variable is the level of commuting distance (in kilometers). The heteroskedasticity-consistent standard errors are in brackets. ***, **, and * denote the statistical significance at the 1%, 5%, and 10% levels, respectively. The reference group of nationality in columns (2), (3), and (4) is Korea. The reference group of nationality in columns (5) and (6) is Japanese.

Table A3. Determinants of commuting distance for married males

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and natives	(6) Immigrants (0-4 years) and natives
education level (reference: primary school or junior high school)						
senior high school	0.2791***	0.0691	0.0486	0.4057	0.2599***	0.2764***
	[0.05]	[0.13]	[0.14]	[0.26]	[0.05]	[0.05]
junior college or technical college	0.6001***	0.3522*	0.202	0.9163	0.5751***	0.6058***
	[0.06]	[0.20]	[0.21]	[0.56]	[0.06]	[0.06]
university (undergraduate or higher)	1.3111***	1.1108***	1.1468***	0.4284	1.2996***	1.3067***
	[0.06]	[0.19]	[0.21]	[0.39]	[0.06]	[0.06]
age	0.0465***	-0.0007	0.0005	-0.0192	0.0442***	0.0457***
	[0.00]	[0.01]	[0.01]	[0.02]	[0.00]	[0.00]
spouse's education level (reference: primary school or junior high school)						
senior high school	0.2509***	0.185	0.1795	0.0015	0.2473***	0.2448***
	[0.05]	[0.12]	[0.13]	[0.25]	[0.05]	[0.05]
junior college or technical college	0.4689***	0.7117***	0.6967***	0.2014	0.4716***	0.4636***
	[0.06]	[0.20]	[0.22]	[0.38]	[0.06]	[0.06]
university (undergraduate or higher)	0.7522***	0.5283***	0.6009***	0.2817	0.7464***	0.7251***
	[0.08]	[0.18]	[0.20]	[0.41]	[0.07]	[0.07]
spouse's age	0.0407***	0.0379***	0.0409***	0.0296	0.0413***	0.0406***
	[0.00]	[0.01]	[0.01]	[0.02]	[0.00]	[0.00]
kids under 6 years old	-0.1429***	0.101	0.1397	-0.0596	-0.1323***	-0.1465***
	[0.02]	[0.08]	[0.09]	[0.13]	[0.02]	[0.02]
kids aged 6 to 11	0.3073***	0.3975***	0.4398***	0.1194	0.3145***	0.3034***
	[0.02]	[0.10]	[0.11]	[0.16]	[0.02]	[0.02]
kids aged 12 to 14	0.5618***	0.3971***	0.3726**	0.7122*	0.5560***	0.5594***
	[0.04]	[0.14]	[0.15]	[0.38]	[0.04]	[0.04]
kids aged 15 to 17	0.7713***	0.5207***	0.5665***	-0.0523	0.7719***	0.7664***
	[0.04]	[0.16]	[0.17]	[0.34]	[0.04]	[0.04]
kids aged 18 to 19	0.7607***	0.8261***	0.6801***	1.5653*	0.7577***	0.7715***
	[0.07]	[0.23]	[0.23]	[0.92]	[0.06]	[0.07]
old people aged 65 to 74	0.3858***	0.4775	0.4482	1.082	0.3794***	0.3826***
	[0.06]	[0.30]	[0.31]	[0.96]	[0.06]	[0.06]
old people aged 75 to 84	0.2797***	0.3789	0.3672	-0.959	0.2762***	0.2781***
	[0.04]	[0.40]	[0.40]	[1.20]	[0.04]	[0.04]
old people aged 85 and over	-0.1104**	0.4659	0.3505	0.5633	-0.1131**	-0.1123**
	[0.06]	[0.75]	[0.72]	[0.74]	[0.06]	[0.06]
reference: regular worker						
fixed-term-contract worker	0.6203***	0.2324	0.2572	0.0354	0.4291***	0.5519***
	[0.16]	[0.15]	[0.18]	[0.26]	[0.12]	[0.15]
part-time worker	-1.7229***	-0.6167***	-0.7340***	0.0477	-1.6602***	-1.6753***
	[0.06]	[0.14]	[0.16]	[0.25]	[0.06]	[0.06]
manager	-3.6099***	-1.6850***	-1.8048***	-0.5195	-3.5317***	-3.5893***
	[0.07]	[0.26]	[0.29]	[0.48]	[0.07]	[0.07]
self-employed (have employees)	-4.9559***	-3.0031***	-3.1507***	-2.2694***	-4.8722***	-4.9416***
	[0.07]	[0.22]	[0.22]	[0.65]	[0.06]	[0.07]
self-employed (do not have employees)	-5.4025***	-3.5797***	-3.8168***	-0.6144	-5.3567***	-5.3835***
	[0.05]	[0.21]	[0.21]	[1.19]	[0.05]	[0.05]
family worker	-4.6666***	-3.4556***	-3.5853***	-2.3660**	-4.6241***	-4.6491***
	[0.10]	[0.40]	[0.42]	[1.15]	[0.10]	[0.10]
homeworker	-6.1194***	-4.5338***	-5.0079***	-2.8389**	-6.1609***	-5.8392***
	[0.25]	[0.34]	[0.34]	[1.11]	[0.21]	[0.25]

Table A3. Determinants of commuting distance for married males (continued)

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and natives	(6) Immigrants (0-4 years) and natives
spouse's employment status (reference: labor force nonparticipation)						
regular worker	-0.4546	0.2566	0.1426	0.9448	-0.3463	-0.3599
	[0.41]	[0.39]	[0.44]	[0.68]	[0.34]	[0.39]
fixed-term-contract worker	-0.2638	0.1134	-0.1201	1.2465*	-0.1604	-0.161
	[0.43]	[0.39]	[0.44]	[0.70]	[0.36]	[0.41]
part-time worker	0.2096	0.2669	0.1031	1.0341	0.3074	0.3067
	[0.41]	[0.37]	[0.42]	[0.69]	[0.34]	[0.39]
manager	-2.3589***	-0.5314	-0.691	0.7997	-2.1512***	-2.2638***
	[0.42]	[0.61]	[0.65]	[1.26]	[0.35]	[0.40]
self-employed (have employees)	0.289	0.485	0.2384	1.967	0.4003	0.3961
	[0.49]	[0.73]	[0.79]	[2.29]	[0.43]	[0.48]
self-employed (do not have employees)	0.1496	2.0764**	1.9593**	1.1683	0.3294	0.251
	[0.43]	[0.81]	[0.90]	[1.02]	[0.36]	[0.41]
family worker	-0.6713	-0.6699	-0.8319*	0.513	-0.5798*	-0.578
	[0.41]	[0.43]	[0.48]	[1.01]	[0.34]	[0.39]
homeworker	0.5737	-0.2291	-0.6353	2.3279*	0.559	0.6445
	[0.49]	[0.56]	[0.62]	[1.21]	[0.42]	[0.47]
unemployed (spouse)	-0.1771	0.0921	0.0588	0.2909	-0.2048*	-0.175
	[0.14]	[0.23]	[0.27]	[0.38]	[0.12]	[0.13]
Korea					-1.8897***	-4.7545***
					[0.11]	[0.28]
China		0.1545	0.0153	0.8569**	-1.8198***	-3.2423***
		[0.18]	[0.20]	[0.34]	[0.14]	[0.22]
Philippines		-0.8020***	-1.0149***	0.5365	-1.7587***	-1.8556***
		[0.20]	[0.23]	[0.40]	[0.16]	[0.24]
Thailand		-0.2872	-0.5502	0.7354	-0.9929	-2.7454***
		[0.52]	[0.60]	[0.89]	[1.34]	[0.89]
Indonesia		-1.1997***	-1.4352***	-0.0338	-2.2376***	-3.0543***
		[0.37]	[0.44]	[0.57]	[0.43]	[0.52]
Vietnam		-1.4737***	-1.7893***	1.5177	-3.5230***	-2.0873**
		[0.26]	[0.25]	[1.05]	[0.20]	[1.03]
UK		-1.6351***	-1.3876**	0.0159	-1.3454**	-4.4495***
		[0.54]	[0.70]	[0.81]	[0.66]	[0.78]
US		-1.1396**	-1.0524	0.2671	-1.8286***	-3.7518***
		[0.52]	[0.75]	[0.59]	[0.55]	[0.52]
Brazil		-0.6832***	-0.7417***	0.125	-1.7608***	-2.0259***
		[0.19]	[0.20]	[0.43]	[0.11]	[0.21]
Peru		-1.0268***	-1.1014***	-0.0316	-2.2762***	-2.4704***
		[0.23]	[0.24]	[0.69]	[0.18]	[0.73]
Other foreign countries		-0.7765***	-0.8831***	0.5257	-2.1164***	-3.4687***
		[0.21]	[0.25]	[0.32]	[0.20]	[0.22]
0-4 years since migration		-1.0393***				
		[0.12]				
prefecture dummies of home	Yes	Yes	Yes	Yes	Yes	Yes
prefecture dummies of work	Yes	Yes	Yes	Yes	Yes	Yes
occupation dummies	Yes	Yes	Yes	Yes	Yes	Yes
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	6.9107***	10.1074***	10.6092***	5.9716***	6.9988***	6.9592***
	[0.20]	[1.11]	[1.29]	[1.28]	[0.19]	[0.20]
R-squared	0.1283	0.1047	0.1062	0.3026	0.122	0.1281
Observations	1732459	106596	91055	15541	1823514	1748000

Note: The dependent variable is the level of commuting distance (in kilometers). The heteroskedasticity-consistent standard errors are in brackets. ***, **, and * denote the statistical significance at the 1%, 5%, and 10% levels, respectively. The reference group of nationality in columns (2), (3), and (4) is Korea. The reference group of nationality in columns (5) and (6) is Japanese.

Table A4. Determinants of commuting distance for married females

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and natives	(6) Immigrants (0-4 years) and natives
education level (reference: primary school or junior high school)						
senior high school	0.0057	-0.0635	-0.0617	0.0794	0.0042	0.0009
	[0.02]	[0.11]	[0.12]	[0.18]	[0.02]	[0.02]
junior college or technical college	-0.0051	-0.1813	-0.1613	-0.1476	-0.0138	-0.0111
	[0.03]	[0.15]	[0.16]	[0.30]	[0.03]	[0.03]
university (undergraduate or higher)	1.0377***	0.6629***	0.6989***	0.4624*	1.0275***	1.0260***
	[0.04]	[0.16]	[0.18]	[0.25]	[0.04]	[0.04]
age	-0.0220***	-0.0261***	-0.0256***	-0.0218*	-0.0226***	-0.0224***
	[0.00]	[0.01]	[0.01]	[0.01]	[0.00]	[0.00]
spouse's education level (reference: primary school or junior high school)						
senior high school	0.0375*	0.0215	-0.0357	0.1927	0.0323*	0.0431**
	[0.02]	[0.11]	[0.11]	[0.18]	[0.02]	[0.02]
junior college or technical college	-0.0517*	0.0141	-0.0749	0.3879	-0.0587**	-0.0427
	[0.03]	[0.14]	[0.15]	[0.31]	[0.03]	[0.03]
university (undergraduate or higher)	0.0581**	0.2649**	0.2383*	0.237	0.0612**	0.0639**
	[0.03]	[0.13]	[0.14]	[0.25]	[0.03]	[0.03]
spouse's age	-0.0165***	0.0068	0.0012	0.0153	-0.0151***	-0.0156***
	[0.00]	[0.01]	[0.01]	[0.01]	[0.00]	[0.00]
kids under 6 years old	-0.1326***	-0.1365	-0.1618	-0.2692*	-0.1316***	-0.1301***
	[0.02]	[0.09]	[0.11]	[0.16]	[0.02]	[0.02]
kids aged 6 to 11	-0.4380***	-0.3870***	-0.4373***	-0.0498	-0.4360***	-0.4341***
	[0.01]	[0.06]	[0.06]	[0.14]	[0.01]	[0.01]
kids aged 12 to 14	-0.3119***	-0.3390***	-0.3492***	-0.1626	-0.3127***	-0.3115***
	[0.01]	[0.07]	[0.07]	[0.22]	[0.01]	[0.01]
kids aged 15 to 17	-0.3067***	-0.1509**	-0.2202***	0.7562***	-0.3024***	-0.3028***
	[0.01]	[0.07]	[0.07]	[0.29]	[0.01]	[0.01]
kids aged 18 to 19	-0.3927***	-0.0482	-0.0169	-0.4304*	-0.3759***	-0.3924***
	[0.02]	[0.10]	[0.11]	[0.22]	[0.02]	[0.02]
old people aged 65 to 74	0.2977***	0.1896	0.0121	1.5074**	0.2945***	0.2994***
	[0.03]	[0.18]	[0.18]	[0.76]	[0.02]	[0.03]
old people aged 75 to 84	0.2260***	0.2756	0.4118**	-0.1869	0.2244***	0.2252***
	[0.02]	[0.18]	[0.18]	[0.45]	[0.02]	[0.02]
old people aged 85 and over	0.1957***	0.398	0.4066	0.9031	0.1952***	0.1957***
	[0.02]	[0.29]	[0.29]	[1.27]	[0.02]	[0.02]
reference: regular worker						
fixed-term-contract worker	-0.0131	0.0416	-0.0719	0.7770***	-0.0294	-0.0031
	[0.06]	[0.13]	[0.14]	[0.26]	[0.05]	[0.06]
part-time worker	-1.3255***	-1.1531***	-1.2312***	-0.263	-1.3214***	-1.3226***
	[0.02]	[0.11]	[0.12]	[0.22]	[0.02]	[0.02]
manager	-0.8131***	-0.5257**	-0.6679***	1.4969	-0.7967***	-0.8070***
	[0.07]	[0.21]	[0.20]	[0.96]	[0.07]	[0.07]
self-employed (have employees)	-1.9390***	-1.0667*	-1.0728*	-1.2661*	-1.8456***	-1.9371***
	[0.10]	[0.58]	[0.61]	[0.76]	[0.12]	[0.10]
self-employed (do not have employees)	-2.2894***	-2.2230***	-2.1793***	-2.6718***	-2.2967***	-2.2931***
	[0.05]	[0.30]	[0.33]	[0.44]	[0.05]	[0.05]
family worker	-2.3112***	-2.2405***	-2.1499***	-2.3234***	-2.3096***	-2.3137***
	[0.04]	[0.19]	[0.19]	[0.54]	[0.04]	[0.04]
homeworker	-2.9188***	-3.1630***	-3.0965***	-3.1223***	-2.9374***	-2.9389***
	[0.04]	[0.16]	[0.17]	[0.33]	[0.04]	[0.04]

Table A4. Determinants of commuting distance for married females (continued)

	(1) Natives	(2) Immigrants	(3) Immigrants (5 years or more)	(4) Immigrants (0-4 years)	(5) Immigrants (5 years or more) and natives	(6) Immigrants (0-4 years) and natives
spouse's employment status (reference: labor force nonparticipation)						
regular worker	0.2433	-0.0394	-0.2543	1.6981***	0.1911	0.2779
	[0.25]	[0.39]	[0.43]	[0.65]	[0.22]	[0.25]
fixed-term-contract worker	0.0247	0.042	-0.1184	1.5084**	0.0531	0.0479
	[0.26]	[0.41]	[0.44]	[0.67]	[0.23]	[0.25]
part-time worker	0.4334*	0.2395	0.0762	1.5936**	0.3798*	0.4627*
	[0.25]	[0.40]	[0.43]	[0.66]	[0.22]	[0.25]
manager	-0.7176***	-1.0340**	-1.3189***	1.2329	-0.7743***	-0.6838***
	[0.25]	[0.41]	[0.44]	[0.80]	[0.22]	[0.25]
self-employed (have employees)	0.3991	0.1295	-0.1941	2.3617***	0.3433	0.4354*
	[0.25]	[0.44]	[0.46]	[0.84]	[0.22]	[0.25]
self-employed (do not have employees)	0.2368	-0.1	-0.4549	2.4229**	0.1723	0.274
	[0.25]	[0.41]	[0.43]	[0.98]	[0.22]	[0.25]
family worker	0.3306	0.1899	-0.1434	2.8114***	0.288	0.3693
	[0.26]	[0.51]	[0.54]	[1.03]	[0.23]	[0.26]
homeworker	0.4043	-0.8658	-1.2922**	2.9948**	-0.0133	0.4733
	[0.37]	[0.53]	[0.57]	[1.22]	[0.32]	[0.36]
unemployed (spouse)	-0.1481**	0.0905	-0.2428	1.7840***	-0.1549***	-0.1186**
	[0.06]	[0.27]	[0.30]	[0.61]	[0.06]	[0.06]
Korea					-0.3045***	-0.6950*
					[0.07]	[0.41]
China		0.6950***	0.5884***	0.5383	0.1128	-0.4985***
		[0.11]	[0.12]	[0.39]	[0.10]	[0.15]
Philippines		0.5850***	0.4760***	0.3607	0.0073	-0.4811**
		[0.14]	[0.15]	[0.44]	[0.10]	[0.19]
Thailand		0.2065	0.1893	0.3811	0.0549	-0.9695
		[0.28]	[0.29]	[0.78]	[0.27]	[0.64]
Indonesia		-0.0571	-0.3833	0.1253	-1.1048***	-0.7494
		[0.39]	[0.42]	[0.86]	[0.32]	[0.76]
Vietnam		0.1145	0.1728	-0.7171	-0.6286***	-1.6403***
		[0.20]	[0.22]	[0.54]	[0.19]	[0.36]
UK		-1.8759***	-0.4384	-2.4182***	-0.2919	-4.4694***
		[0.68]	[1.21]	[0.78]	[1.18]	[0.63]
US		-1.8785***	-1.5642***	-1.5493**	-0.8554*	-2.9390***
		[0.47]	[0.51]	[0.74]	[0.48]	[0.84]
Brazil		0.2810**	0.2823**	-0.4407	-0.2552***	-0.9630***
		[0.12]	[0.14]	[0.43]	[0.08]	[0.16]
Peru		0.3711**	0.3571**	-0.0158	-0.2044*	-0.6172
		[0.15]	[0.16]	[0.57]	[0.11]	[0.39]
Other foreign countries		0.0752	0.1631	-0.2865	-0.0633	-1.3235***
		[0.18]	[0.22]	[0.43]	[0.20]	[0.22]
0-4 years since migration		-0.6313***				
		[0.10]				
prefecture dummies of home	Yes	Yes	Yes	Yes	Yes	Yes
prefecture dummies of work	Yes	Yes	Yes	Yes	Yes	Yes
occupation dummies	Yes	Yes	Yes	Yes	Yes	Yes
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	12.1194***	8.2112***	8.8922***	4.3853***	12.0238***	12.0678***
	[0.23]	[0.66]	[0.70]	[1.65]	[0.22]	[0.23]
R-squared	0.0976	0.1646	0.1616	0.3959	0.0979	0.0978
Observations	1150049	69047	59414	9633	1209463	1159682

Note: The dependent variable is the level of commuting distance (in kilometers). The heteroskedasticity-consistent standard errors are in brackets. ***, **, and * denote the statistical significance at the 1%, 5%, and 10% levels, respectively. The reference group of nationality in columns (2), (3), and (4) is Korea. The reference group of nationality in columns (5) and (6) is Japanese.