

## Whose Size Counts?

Multilevel Analysis of Japanese Anti-Immigrant Attitudes Based on JGSS-2006

Kikuko NAGAYOSHI

Graduate School of Human Sciences, Osaka University/  
Japanese Society for the Promotion of Science

排外意識に対する外国籍人口割合の効果  
- JGSS-2006 をもちいたマルチレベル分析から -

永吉 希久子

大阪大学人間科学研究科社会環境学専攻博士後期課程 /  
日本学術振興会特別研究員 DC1

The aim of this study is to examine how the size of foreign resident populations affects Japanese anti-immigrant attitudes. In previous research, it has been found that the size of foreign resident populations strengthens the anti-immigrant attitude, while the portion of Koreans among the foreign residents weakens it. According to the group threat theory, the possibility of competing for scarce resources between foreign residents and host residents as well as the ethnicity of the foreign residents could be the cause. From this viewpoint, we examine the effect of the following factors: size and rate of increase of foreign resident population as a whole, size of foreign residents divided according to their nationality, the portion of self-employed, manual workers, and Old-Comers among foreign residents, and the economic conditions of the regions. By analyzing JGSS-2006 data, the following results are found: a large size of South American and Chinese populations, a large portion of manual workers among foreign residents, and a rapid increase of foreign residents strengthens the anti-immigrant attitude. The portion of manual workers especially plays an important role.

Key Words: JGSS, xenophobia, group threat theory

本稿の目的は、排外意識に外国籍者の人口割合が与える効果が、なぜ彼らの国籍によって異なるのかを明らかにすることにある。集団脅威仮説によれば、対象となる外国籍者のエスニシティとともに、彼らが希少な資源をめぐる競争を引き起こす可能性も排外意識に影響を与えていると考えられる。このような視点から、本稿では、外国籍者の人口割合、その増加率、国籍別人口割合とともに、外国籍労働者における自営業者、マニュアル職者の割合が排外意識に与える影響を検討した。JGSS-2006 を用いた分析の結果、南米または中国籍者の割合と外国籍人口の増加率だけでなく、外国籍労働者の中でのマニュアル職者の割合が排外意識に大きな影響を与えていることが明らかになった。本稿の結果から、外国籍者の割合が排外意識に影響を与えるのは、彼らがホスト社会と仕事などの希少な資源を争う存在となる場合においてであると示唆される。

キーワード：JGSS，排外意識，集団脅威仮説

## 1. Introduction

At the end of 2007, the number of foreign residents in Japan was over 2,150,000, having grown by 50 percent over the previous ten years. In 2008, the government started to accept care workers from Indonesia on the Economic Partnership Agreement (EPA). They also proclaimed their plan that, by 2025, they would have accepted one million foreign students. There are many standpoints around the issue of whether the state should accept more foreign workers or not but, despite this, Japan has started to expand its range of acceptance. However, many researchers also point out that Japanese society is still exclusive with regard to foreign people (e.g., Peng-Er 2005). There is a persistent belief in their ethnic homogeneity, so Japanese people treat foreign residents as outsiders as long as they are physically or culturally distinguished from “Japanese” (Imazu 1993; Murphey-Shigematsu 2006; Tsuda 2006). Under these conditions, the determinants of anti-immigrant attitudes came to receive the attentions of researchers in Japan.

These researchers mainly focus on individual factors and find almost the same results as previous researches in Europe or the U.S.; age, social status such as education or economic conditions, and contact with foreigners have significant effects (Tanabe 2001; Ohtsuki 2006; Nukaga 2006; Nagayoshi 2008). In contrast, regional level factors are rarely examined in Japan. The only exception is the size of the foreign population, and it has a positive effect on the anti-immigrant attitude (Ohtsuki 2006; Nukaga 2006). This effect is mediated by the threat perception (Nagayoshi 2008). Moreover, they also find that the size of the foreign population has different effects according to their nationalities. Nukaga (2006) reveals that the proportion of resident Koreans among all foreign residents negatively affects the anti-immigrant attitude. On the contrary, people are more likely to show strong prejudice toward foreigners in areas where there is a larger proportion of Brazilians (Nakazawa 2007). Consequently, why is there such diversity of effects according to the nationalities of foreign residents?

The size of the foreign population or ethnic minorities shows unclear effects on anti-immigrant or anti-minority attitudes in the U.S. and in European countries as well. The size of the African American population affects anti-African American prejudice whereas that of Hispanics or Asian Americans has little or no effect on anti-Hispanic or anti-Asian American prejudice (Taylor 1998; Dixon 2006). In European countries, the size of foreign population has little effect, if any, on anti-immigrant attitudes (Quillian 1995; Semynov et al. 2004; Hjerm 2007) with few exceptions (Semynov et al. 2006). Thus, some researchers assume that it is not the size of the foreign population, but the size of the African American population in the U.S. that has an important meaning. Consequently, we may be able to say that Koreans and Brazilians also occupy a special position in Japanese society. However, in what aspect are they special?

In previous researches, the mechanism in which size of each ethnicity affects differently is not so clear. The long history of fighting against prejudice is assumed as a background factor of reducing effects of Korean populations on anti-immigrant attitudes in Japan (Nukaga 2006), though the same legacy is assumed as the source of White opposition toward African Americans (Bobo & Hutchings 1996). This unclearness seems to relate to the indicators they use. In previous researches, foreign residents are divided only according to their ethnicities. However, ethnicity correlates several other factors such as social positions within a host society; some ethnic groups are likely to live in economically wealthy areas, while others are not; some are likely to compete against host residents for jobs while others usually work within an ethnic niche. From the viewpoint of the group threat theory, these differences of social positions seem to affect anti-immigrant attitudes; therefore, the differences of effects of size according to their nationalities may stem from differences of their social position. These differences of social positions, however, are seldom taken into account in the previous

researches. From this point of view, this paper tests effects of size of foreign populations divided by their social positions as well as other factors that are assumed to affect the differences of effects of size in previous researches.

## 2. Theories and Hypotheses

Why does the size of the foreign resident population affect anti-immigrant attitudes differently according to their nationalities? This can be explained through the group threat theory. Blumer (1958) points out that there are four basic types of feeling present in prejudice in the dominant group; 1) a feeling of superiority, 2) a feeling that the subordinate group is intrinsically different and alien, 3) a feeling of proprietary claim to certain areas of privilege and advantage, and 4) fear and suspicion that the subordinate group harbors designs on the prerogatives of the dominant group. The fourth type of feeling works as a trigger while the other feelings are the base of the prejudice. This implies that there are two attributions of ethnic minorities affecting prejudice toward them: ethnicity and social position.

Host residents have an ethnic hierarchy, and if host residents do not feel that they are superior to an ethnic group, they have little prejudice to members of that group. In other words, if some ethnic groups are not seen to be in lower positions than the host residents, the number of them is not source of hostility. The researches in the U.S. find that the proportion of African Americans has a positive effect on prejudice while that of Hispanics or Asians has no effect (Taylor 1998; Dixon 2006). Taylor (1998) interprets these results:

Objectively, Asian Americans or Latinos are more likely than are African Americans to have the resources to make them serious competitors with whites in the economic and political realms; but whites' more benign disposition toward Asian Americans or Latinos may prevent the arousal of threat reactions. (Taylor 1998: 533)

Here, what makes a difference on the host residents' anti-immigrant attitudes is the ethnicity of those in question and the pre-existing view toward each ethnic group. If we think about the Japanese case, Japanese people also have an ethnic hierarchy. Tanabe (2008; forthcoming) analyzes Japanese image of foreign countries, and finds the following results; Western countries are held in high positions, China and South Korea in the middle, other Asian, African, and South American countries in the lowest position (Tanabe forthcoming). However, when it comes to favorability, Japanese people like Western European countries the most, China and Middle Eastern countries the least, and the South American or East Asian countries are in the middle (Tanabe 2008). Western countries, such as the democratic European countries, North American countries and Australia, are high in the hierarchy as well as in the favorability ranking. In contrast, Japanese people's views toward the other countries are not so clear: Japanese people like South American countries relatively but put them at the bottom of the hierarchy. At the same time, Japanese people put Korea or China in the middle positions of the hierarchy but show negative attitudes toward them. These images of each country might affect Japanese images of those from that country. Therefore, the size of foreign residents from Western countries might negatively affect anti-immigrant attitudes while the size of those from other countries might have somewhat positive effects.

H1: The effect of size of foreign resident populations differs according to their ethnicities; size of foreign residents from western countries negatively affects anti-immigrant attitudes while size of other national groups positively affects them.

However, as Blumer (1958) says, there seems to be no group prejudice when the ethnic hierarchy is solidified in to a structure which is accepted or respected by all (Blumer 1958: 4). A sense of group position is just the base of prejudice, and prejudice is aroused by conditions unsuitable for that sense. Host residents have strong anti-immigrant attitudes when they perceive immigrants as a threat which shakes the privileged position of the host residents. For example, they perceive that their jobs or benefits from social security are robbed by immigrants. From this view, sizes of foreign residents who compete over such scarce resources with host residents affect anti-immigrant attitudes. In other words, the host residents may not feel threatened when there is no competition between immigrants and the host residents. This can be the case when immigrants work in a professional capacity, such as foreign language teachers for example, or in ethnic niche work, such as owning an ethnic food store. Taylor (1998) raises one possible reason why the size of Hispanic population does not affect anti-Hispanic prejudice: they own their own stores and are perceived as economically integrated into the host society. On the contrary, some types of jobs are more likely to be perceived as more competitive—manual work being one such example.

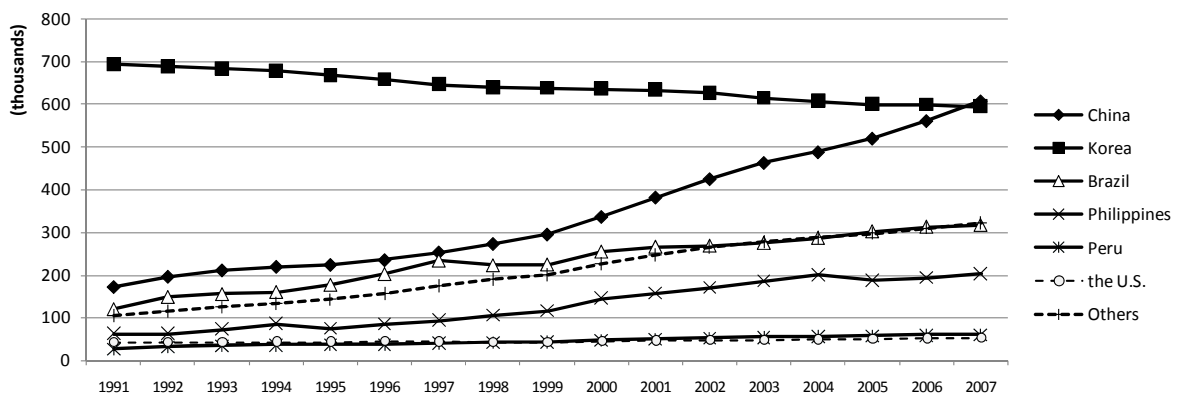
From these viewpoints, the following hypotheses can be established:

H2: The rate of self-employment among foreign workers has a negative effect on anti-immigrant attitudes.

H3: The rate of manual workers among foreign workers has a positive effect on anti-immigrant attitudes.

Moreover, host residents feel more threatened when the number of immigrants increases rapidly. In the Japanese case, the size of the Korean population has decreased during these years while the size of the Chinese and Brazilian populations has shown a rapid increase (Figure 1). This may be the cause of the differences in the effects on anti-immigrant attitudes. However, in previous research, the rapid increase of immigrants seems not to have had any effect (Semynov et al. 2006; Scheepers et al. 2002).

H4: The more rapidly the size of foreign resident population increases, the more negative the attitudes toward immigrants that Japanese citizens in that area have.



**Figure 1 Trends of the Number of Each Nationality**  
 Note) Number is obtained from Ministry of Justice (2007)

If we focus on Japanese context, a different explanation comes up; separation between “Old-Comers” and “New-Comers” has a meaning. The term of “Old-Comers” indicates those from

former colonies who stayed in Japan after the end of the Second World War or are their descendents. They are not voluntary migrants as “New-Comers”, such as Brazilians or Peruvians, but were forced to come to Japan during World War II, and stayed there after the war. They also have a long history of fighting against institutional and social discrimination and as a result, they have won some rights (Pak 2000: 263). Their long history of struggles may realize to reduce prejudice of host residents. Nakazawa (2007) finds that in areas where there are a large number of Koreans, the largest ethnic group among Old-Comers, education shows negative effects on prejudice toward foreigners while it shows positive effects in other areas. He mentions that this is because human rights education has caught on more in these areas (Nakazawa 2007: 86). Thus, it can be assumed that the effect of the number of Koreans stems from these historical backgrounds as mentioned by Nukaga (2006)<sup>(1)</sup> What is important here is not the ethnicity of Koreans but the fact that, as a group, they have a long history of living in Japan, in other words a position as Old-Comers.

H5: The larger the size of Old-Comers, the less the anti-immigrant attitude of Japanese residents in that area.

### **3. Data and Variables**

#### **3.1 Overview of the Data**

This paper uses the data of the Japanese General Social Survey 2006 (JGSS-2006). It was conducted from October to December by the project members mainly from the Institute of Regional Studies, Osaka University of Commerce and their major project partner, the Institute of Social Science, University of Tokyo. Japanese nationals aged between 20 and 89 were surveyed. Stratified multistage random sampling was used as a sampling method. The respondents were asked to answer the two types of questionnaire: one was a face-to-face survey and the other was a placement method survey. The placement method survey had two types of questionnaire (Type A and Type B), and each was done with half of the respondents. This paper uses the items in a face-to-face questionnaire and a type-A placement method questionnaire. The type-A placement method questionnaire had valid responses from 2124 respondents (59.8%). In this paper, 1800 respondents who answered all the questions in the analyses of this paper are used.

#### **3.2 Variables**

The dependent variable here is anti-immigrant attitude. It is usually conceptualized as prejudices toward immigrants (e.g. Kunovich 2002), which are composed of attitudes toward the increase of immigrants and perception toward the effect of such increase. In most cases, an indicator of anti-immigrant attitude is made by several items, but here the following question is posed: Are you for or against the increase in the number of foreigners in your community? This question does not refer to immigrants but immigration, and these two are not the same things. However, this indicator can be expected to have strong correlation with anti-immigrant attitudes. In other words, negation of an increase of immigrants is assumed to represent a weak form of that attitude. In fact, it is usually used as an item that composes of an indicator of anti-immigrant attitudes (e.g. McLaren & Johnson 2007). Therefore, this item can be used as indicator of anti-immigrant attitudes. This question has two possible answers: “agree” or “disagree.” If a respondent answers “disagree,” this is treated as having higher anti-immigrant attitudes.

To test the hypotheses written above, several indicators are used as context variables (Table 1). For all of the contextual indicators, the prefecture is the unit of “region.” From the viewpoint of the

group threat theory, anti-immigrant attitudes are stimulated by the struggle between host residents and immigrants over scarce resources. Then, the amount of scarce resources, such as job opportunities and good education and so on, should matter. In Japan, city governments take responsibility for these basic needs for residents. However, in the small cities, the responsibility for social security is mostly owned by the prefecture government. Moreover, the prefecture is a basic unit in a census. Therefore, the prefecture can be an appropriate unit for people to use as a reference point when they perceive the struggle for scarce resources.

First, *size of foreign resident population as a whole and size of each nationality*, such as Koreans, Chinese, Westerners (those from the U.S., Canada, European countries, Australia, or New Zealand), South Americans (those from Brazil or Peru) and the other foreign residents, are used. Each size indicates percentage of foreign resident population or of each nationality in whole population in a prefecture. Data of number of foreign resident population and data of number of each nationality are taken from Ministry of Justice (2008), and data of whole population in each prefecture is taken from Ministry of Internal Affairs and Communications (2007a)<sup>(2)</sup> We need to make notice that we do not use the size of each ethnicity but the size of each nationality because we do not have access to data of size of each ethnicity. That is, those from Africa who have European nationalities are included in Westerners, and Korean residents who already have Japanese nationality are not included in the Korean category.

To test hypotheses 2 and 3, *portion of self-employed and portion of manual workers among foreign workers* are used. These portions are taken from the Ministry of Internal Affairs and Communications (2008a). Then, to test hypothesis 4, *the increase rate of the size of foreign resident population* is also used. This indicator represents a change of the percentage of foreign resident population in whole population from 1995 to 2006. Number of foreign resident population and number of whole population in each prefecture in 1995 are taken from the Ministry of Internal Affairs and Communication (2000). Moreover, to test hypothesis 5, the proportion of special permanent residents among all foreign residents in each region is used as an indicator of *portion of Old-Comers*, since this residential status is granted to those from former colonies stayed in Japan after the Second World War and lost their Japanese nationalities as a result of Treaty of Peace with Japan or are their descendents. Number of special permanent residents is taken from Ministry of Justice (2008).

Economic condition of each region assumes to affect both of size of foreign residents and anti-immigrant attitudes. Foreign residents, especially “New-Comers”, are likely to live in wealthy regions. Moreover, anti-immigrant attitudes become strong in regions where the economic conditions are relatively poor (Quillian 1995; Scheepers et al. 2002; Semynov et al. 2006; Hjerm 2007). Therefore, to test effect of size of foreign residents on anti-immigrant attitudes, we need to control effect of economic conditions of regions. In this research, two indicators are used. One is *unemployment rate* of each region. Data of unemployment rate is a model-based estimation of the Ministry of Internal Affairs and Communications (2007b). The other is *tax power* that is indicated by financial capability index. Financial capability index refers to the figures calculated by dividing standard financial revenues of a local government by the standard financial needs. Higher the index is, the better the economic condition of the region is. In accordance with customary practice, three-year average of the indexes, in this case average of the indexes for 2004, 2005, and 2006, is used. Data of financial capability indexes are according to the Ministry of Internal Affairs and Communication (2007c; 2008b) and Zaisei Tohkei Kenkyujo (2006).

**Table 1 Definition of Contextual Variables**

Indicator	Definition
Size of Foreign Population as a Whole	$100 * (\text{Foreign Population in Each Prefecture}) / (\text{Whole Population in Each Prefecture})$
Size of Each Nationalities	$100 * (\text{Population of Each Nationality in Each Prefecture}) / (\text{Whole Population in Each Prefecture})$
Portion of Old-Comers	$100 * (\text{Population of Special Permanent Residents in Each Prefecture}) / (\text{Whole Foreign Population in Each Prefecture})$
Portion of Self-Employed	$100 * (\text{Population of Self-Employed Foreign Workers in Each Prefecture}) / (\text{Whole Foreign Worker Population})$
Portion of Manual Workers	$100 * (\text{Population of Manual Foreign Workers in Each Prefecture}) / (\text{Whole Foreign Worker Population})$
Increase Rate	$(\text{Size of Foreign Population in 2006}) - (\text{Size of Foreign Population in 1995})$
Unemployment Rate	Model-based Estimation for the Ministry of International Affairs and Communications(2007b)
Tax Power	Financial Capability Index of Each Prefecture (Three-Year Average)

In addition to these regional variables, individual variables are also considered, since these variables do not always equally disperse across regions. If these individual variables have an effect on anti-immigrant attitudes, and if we do not control such effects, we may overlook or exaggerate the effects of contextual variables. *Age* is assumed to have an effect on people's attitudes toward cultural diversity (Mulder & Krahn 2005) and their exclusionary views toward the rights of immigrants (Semynov et al. 2004). In the present study, the age of the respondents ranges from 16 to 89 years old.

*Education* is a strong predictor of anti-immigrant attitudes. The more educated a person, the less likely he/she is to hold a negative attitude toward immigrants (Hjerm 2001; Coenders & Scheepers 2004). The mechanism through which education affects anti-immigrant attitudes can be assumed in several ways: determining one's social and economic vulnerability (Hello et al. 2006), conveying democratic and multicultural values to children (Hjerm 2005), or increasing contact with foreigners (Nukaga 2006). However, how education affects anti-immigrant attitudes is not the main issue here, so we will not consider this question. Education is divided into two categories: above upper secondary, or not.

*Occupational status and household income* are also considered. According to the group threat theory, people in socially and economically vulnerable positions are more likely to hold negative attitudes toward immigrants because they perceive immigrants as a threat to their resources such as employment, education, and social security (Kunovich 2002; Coenders & Scheepers 2004). Further, Quillian (1996) demonstrates that income has a negative effect on attitudes toward race-targeting policies. In this research, occupation is divided into eight categories: employer, self-employed in non-manual occupation, self-employed in manual occupation, employee in non-manual occupation, employee in manual occupation, farmer, the unemployed, and those who are not in the labor market. In most cases, occupation is divided into four categories: non-manual workers, manual workers, the unemployed, and not in the labor market. Here we adopt a more detailed division according to the Japanese situation. In Japan, foreign workers, especially trainees, are likely to be employed in small factories where they are one of the main sources of labor power (Iyotani 1992; Kamibayashi 2001). Therefore, it is better to divide respondents according to their occupational status: employer, employee, the unemployed, or those not in a labor market; according to size of company in the case of employers: employers and self-employed (less than ten employees); and according to occupations: manual works, non-manual works, or farming. Moreover, the respondents are divided into two groups according to their economic status, with one group comprising those who are in the lowest quartile and the other group comprising the remaining participants. To preserve the sample size, this paper includes those who do not provide answers related to their family income (542 respondents, 30.1%) by

including the category D.K./N.A. in the model.

*Contacts* with immigrants are assumed to be related to both size of immigrants and anti-immigrant attitudes. The more foreign residents there are in a region, the more chance of contact with them. Furthermore, contact reduces anti-immigrant attitudes while the size of foreign resident population enforces them (Dixon 2006; Nukaga 2006; Ohtsuki 2006). Moreover, McLaren (2003) points out that the effect of contact is strong when the size of the foreign resident population is large. Therefore, to make the effect of size clear, we need to control the effect of contact. Here the following question is used as an indicator: do you often see foreigners in the area where you live? This question represents a superficial contact which is likely to be regarded as a contact that has no or rather positive effect on prejudice (Allport 1954). However, it is proven that superficial contact also has a negative effect on anti-immigrant attitudes in Japan (Ohtsuki 2006). This question has a four-scaled answer; “Frequently” (=4), “Sometimes” (=3), “Rarely” (=2), and “Never” (=1).

In some works, *gender* has been assumed to affect negative attitudes toward ethnic minorities; females are considered to be more tolerant than males (Quillian 1995; Hello et al. 2006). Since this can affect anti-immigrant attitudes, we include gender in the analysis (male=1, female=0). Moreover, political attitude is added because it has been proved to have significant effects on anti-immigrant attitudes (e.g., Semynov et al. 2006). It is true that the causal direction between political attitudes and anti-immigrant attitudes is not very clear. However, here we put our focus on the effect of the competitive condition of individuals. Thus, we need to control anti-immigrant attitudes stemming from a general conservative view. Here, political attitude is scaled from 1 = liberal to 5 = conservative.

## 4. Results

### 4.1 Descriptive Overview

First, we look at the regional average of anti-immigrant attitudes and the rate of each contextual variable (Table 2). The prefectural average of anti-immigrant attitudes ranges from 0.273 (Akita) to 0.800 (Shiga). When we look at the other prefectures, the average anti-immigrant attitude is relatively high in prefectures in the Chubu area such as Fukui (0.783), Gifu (0.756) and Nagano (0.720) while it is relatively low in prefectures in the Tohoku area such as Miyagi (0.343) and Iwate (0.409), and in the Kyushu area such Kumamoto (0.423) and Oita (0.444). When we observe the correlations between anti-immigrant attitude and size of foreign populations, we find quite a strong correlation between anti-immigrant attitude and both size of foreign populations as a whole (0.546), as well as size of South American resident population (0.667). We also find relatively strong correlations between anti-immigrant attitude and size of Chinese resident population (0.358) while there are no significant correlations between anti-immigrant attitude and size of Korean resident population, or between anti-immigrant attitudes and size of Western resident population. This may imply that hypothesis 1, effect of the size of foreign resident population differs according to the nationality of the residents in question. However, effects of each nationality are partly different from what the hypothesis 1 assumes, since the size of Koreans or Western populations does not affect anti-immigrant attitudes while Japanese people have more negative attitudes toward immigration if they live in an area where there are more South Americans or Chinese. Conversely, hypotheses 2 and 5 are doubted because there is no significant correlation between anti-immigrant attitude and portion of self-employed within foreign worker populations or between anti-immigrant attitude and portion of Old-Comers within foreign resident populations. On the contrary, the portion of manual workers among foreign workers positively correlates with the anti-immigrant attitude (0.640) as in the hypothesis 3. The portion of manual workers among foreign workers is high in the Chubu area such as Gifu (79.4) and Shizuoka (77.3),



Table 2 Summary of Regional Level Variables and Their Correlation with Anti-immigrant Attitude

Area	Prefecture	N	Anti-immigrant Attitude	Foreign Population										Unemployment Rate	Tax Power
				Whole	Chinese	Korean	Western	South American	Others	% Old-Comers	% Self-Employed	% Manual Workers	Increase Rate		
Hokkaido	Hokkaido	81	0.432	0.352	0.136	0.100	0.059	0.004	0.053	20.777	7.831	36.248	0.165	5.4	0.365
	Aomori	23	0.609	0.336	0.128	0.086	0.054	0.066	20.451	6.202	40.676	0.178	5.8	0.276	
	Iwate	22	0.409	0.483	0.214	0.084	0.033	0.109	12.447	5.955	60.012	0.301	4.2	0.274	
	Miyagi	35	0.343	0.680	0.290	0.193	0.062	0.110	14.972	7.670	43.811	0.339	4.9	0.487	
	Akita	11	0.273	0.397	0.211	0.072	0.032	0.080	12.103	5.035	60.258	0.241	5.0	0.258	
Kanto	Yamagata	22	0.636	0.618	0.274	0.179	0.029	0.108	6.107	5.761	62.982	0.401	3.1	0.300	
	Fukushima	18	0.611	0.600	0.257	0.101	0.041	0.168	11.523	4.752	58.923	0.316	4.4	0.398	
	Ibaraki	50	0.640	1.765	0.441	0.195	0.072	0.438	0.619	4.060	59.250	0.926	3.8	0.559	
	Tochigi	32	0.594	1.624	0.352	0.161	0.061	0.616	0.434	4.600	68.724	0.747	3.6	0.532	
	Gunma	25	0.760	2.265	0.312	0.152	0.059	1.106	0.636	4.333	3.783	74.848	1.185	3.3	0.511
Chubu	Saitama	100	0.640	1.538	0.502	0.289	0.072	0.259	9.572	5.804	50.343	0.767	3.9	0.658	
	Chiba	76	0.513	1.661	0.551	0.300	0.098	0.456	6.714	6.714	40.325	0.660	3.7	0.829	
	Tokyo	157	0.510	2.881	0.990	0.854	0.392	0.059	14.191	9.202	20.959	1.251	4.2	1.129	
	Kanagawa	106	0.481	1.778	0.480	0.388	0.152	0.256	14.035	7.226	39.685	0.730	4.2	0.827	
	Niigata	39	0.538	0.582	0.214	0.096	0.048	0.170	10.594	7.344	53.064	0.282	3.7	0.381	
Kinki	Toyama	24	0.708	1.343	0.476	0.131	0.061	0.424	0.251	7.962	72.185	0.861	3.0	0.382	
	Ishikawa	11	0.636	0.904	0.348	0.198	0.056	0.150	18.454	5.914	56.431	0.485	3.0	0.399	
	Fukui	23	0.783	1.736	0.609	0.458	0.053	0.387	2.135	7.790	69.440	0.818	2.5	0.346	
	Yamanashi	15	0.667	1.927	0.394	0.295	0.066	0.444	4.430	6.501	70.259	1.026	3.0	0.352	
	Nagano	25	0.720	1.977	0.444	0.218	0.058	0.811	7.360	4.597	70.957	1.054	3.2	0.408	
Chugoku & Shikoku	Gifu	41	0.756	2.595	0.751	0.293	0.057	1.025	10.167	3.428	79.428	1.684	2.6	0.453	
	Shizuoka	71	0.676	2.581	0.300	0.176	0.064	1.518	4.826	2.906	77.271	1.558	2.8	0.663	
	Aichi	107	0.664	2.853	0.486	0.587	0.094	1.153	17.594	6.407	64.165	1.553	2.8	0.903	
	Mie	28	0.714	2.648	0.418	0.349	0.047	1.321	11.877	4.261	75.248	1.753	2.8	0.499	
	Shiga	15	0.800	2.192	0.289	0.459	0.061	1.144	18.863	5.492	71.936	1.086	3.0	0.467	
Average	Kyoto	41	0.537	2.051	0.394	1.325	0.141	0.029	0.163	58.694	16.429	0.265	4.5	0.500	
	Osaka	106	0.425	2.411	0.493	1.590	0.093	0.066	0.169	55.171	16.393	0.386	5.7	0.717	
	Hyogo	71	0.535	1.828	0.404	1.029	0.108	0.081	0.206	51.901	15.257	0.339	4.6	0.495	
	Nara	8	0.625	0.816	0.219	0.363	0.061	0.078	38.955	10.884	42.026	0.250	4.1	0.363	
	Wakayama	18	0.444	0.643	0.144	0.315	0.043	0.015	39.979	13.663	35.890	0.211	4.0	0.280	
Average	Tottori	6	0.500	0.803	0.371	0.233	0.044	0.009	0.147	26.169	7.511	0.446	3.7	0.241	
	Shimane	10	0.500	0.826	0.321	0.131	0.039	0.147	13.551	4.445	61.657	0.502	2.8	0.215	
	Okayama	33	0.667	1.092	0.401	0.370	0.047	0.115	0.158	30.113	8.594	0.498	3.5	0.438	
	Hiroshima	40	0.550	1.356	0.422	0.405	0.072	0.186	26.514	7.199	55.857	0.633	3.4	0.493	
	Yamaguchi	27	0.667	1.023	0.228	0.588	0.051	0.272	53.465	14.069	42.296	0.199	2.9	0.373	
Average	Tokushima	12	0.583	0.685	0.425	0.050	0.046	0.011	0.133	5.174	2.284	0.494	3.5	0.308	
	Kagawa	13	0.615	0.815	0.415	0.109	0.042	0.176	10.658	3.038	64.184	0.516	3.5	0.396	
	Ehime	26	0.462	0.640	0.365	0.115	0.036	0.103	14.084	4.530	70.598	0.425	3.7	0.344	
	Kochi	15	0.333	0.455	0.156	0.097	0.043	0.156	18.073	6.158	32.610	0.246	4.7	0.217	
	Fukuoka	74	0.459	0.933	0.335	0.397	0.065	0.125	35.049	11.851	28.403	0.329	5.6	0.549	
Average	Saga	13	0.538	0.503	0.231	0.113	0.038	0.003	0.119	17.488	49.696	0.278	3.4	0.299	
	Nagasaki	20	0.450	0.503	0.254	0.190	0.063	0.092	13.153	6.852	39.431	0.251	4.4	0.254	
	Kumamoto	26	0.423	0.486	0.250	0.064	0.048	0.119	8.615	4.889	39.468	0.283	4.4	0.339	
	Oita	18	0.444	0.773	0.265	0.226	0.060	0.210	19.395	8.952	33.478	0.468	3.8	0.301	
	Miyazaki	20	0.450	0.377	0.166	0.061	0.047	0.004	12.167	6.044	35.053	0.194	3.6	0.268	
Average	Kagoshima	27	0.556	0.327	0.147	0.032	0.034	0.109	5.052	5.020	46.129	0.172	4.5	0.275	
	Okinawa	19	0.421	0.636	0.142	0.045	0.040	0.212	3.148	9.310	18.373	0.099	7.7	0.272	
	Average	1800	0.560	1.240	0.349	0.301	0.070	0.270	18.139	7.062	52.210	0.596	3.902	0.435	
	Correlation with Anti-immigrant Attitude		1.000	0.546**	0.358**	0.052 <sup>n.s.</sup>	-0.096 <sup>n.s.</sup>	0.667**	0.469**	-0.126 n.s.	-0.274 n.s.	0.640**	0.634**	-0.643**	0.186 n.s.
	Note)														

\*\* p < 0.01, \* p < 0.05, n.s. = not significant

and these prefectures have also experienced a rapid increase in foreign residents. Such rate positively correlates with the anti-immigrant attitude (0.634) as in the hypothesis 4.

While tax power shows no significant correlation with anti-immigrant attitudes, unemployment rate of a region significantly correlates with anti-immigrant attitudes. However, the relationship is opposite to that previous researches find: the higher the unemployment rate a region has, the lower the anti-immigrant attitudes its Japanese residents show. However, there is a possibility of spurious correlation. When we look closely at relations between economic conditions and size of foreign population, we find that regions where the unemployment rate is low, for example Gifu, Shizuoka, Aichi, and Mie have large South American or manual foreign worker population and experience rapid increase of foreign residents. Therefore, the relation between unemployment rate and anti-immigrant attitude might be affected by these factors. Thus, we need to test which hypotheses are appropriate through multivariate analysis and comparison of models.

#### 4.2 Determinants of Anti-Immigrant Attitudes

To see the effect of regional level variables, we use a hierarchical binary logit model as an analytical method. This model enables us to estimate regional level effects while variations of individual level variables are controlled. Moreover, it provides correct standard errors and thus correct confidence intervals and significant tests (Guo & Zhao 2000: 444). To model these effects the software program Mplus version 4.21 (Muthén & Muthén 1998-2007) is used.

We test the following nine models. Model 0 is the null model, which only includes a regional level error term. Model 0 can be represented by the following equation.

$$\begin{aligned} \text{M 0: } \log[p_{ij}/(1-p_{ij})] &= \beta_{0j}. \\ \beta_{0j} &= \beta_{00} + u_j. \end{aligned}$$

$P_{ij}$  means a probability of having high anti-immigrant attitude for individual  $i$  in a prefecture  $j$ , and  $U_j$  is a prefecture level error term, which is assumed to be normally distributed with the expected value 0 and the variance  $\sigma_u^2$ . Individual variables, age, gender, educational level, occupational status, household income, political attitude, and contact with foreign residents, are added in model 1. Note that  $\beta_4$  and  $\beta_5$  represent vectors of coefficients for multiple variables that measure these concepts.

$$\begin{aligned} \text{M1: } \log[p_{ij}/(1-p_{ij})] &= \beta_{0j} + \beta_{11}(\text{Age})_{ij} + \beta_{12}(\text{Gender})_{ij} + \beta_{13}(\text{Educational Level})_{ij} \\ &+ \beta_{14}(\text{Occupational Status})_{ij} + \beta_{15}(\text{Household Income})_{ij} \\ &+ \beta_{16}(\text{Political Attitude})_{ij} + \beta_{17}(\text{Contact})_{ij}. \\ \beta_{0j} &= \beta_{00} + u_j. \end{aligned}$$

Size of foreign population and unemployment rate are added to model 1 in model 2, while a size of foreign population and tax power are added in model 3.

$$\begin{aligned} \text{M2: } \beta_{0j} &= \beta_{00} + \beta_{01}(\text{Foreign population})_j + \beta_{02}(\text{Unemployment Rate})_j + u_j. \\ \text{M3: } \beta_{0j} &= \beta_{00} + \beta_{01}(\text{Foreign population})_j + \beta_{02}(\text{Tax Power})_j + u_j. \end{aligned}$$

Sizes of foreign population divided according to their nationality and unemployment rate are added to model 1 in model 4 to test hypothesis 1, since the model 2 fits better than model 3 as shown below.

$$\begin{aligned} \text{M4: } \beta_{0j} = & \beta_{00} + \beta_{01}(\text{Chinese population})_j + \beta_{02}(\text{Korean Population})_j + \beta_{03}(\text{Western Population})_j \\ & + \beta_{04}(\text{South American population})_j + \beta_{05}(\text{the Other Population})_j + \beta_{06}(\text{Unemployment Rate})_j \\ & + u_j. \end{aligned}$$

To test hypothesis 2, portion of self-employed within foreign workers is added to model 2 in model 5, while portion of manual workers within foreign workers is added to test hypothesis 3 in model 6. Increase rate of foreign residents and unemployment rate are added to model 1 in model 7.

$$\text{M5: } \beta_{0j} = \beta_{00} + \beta_{01}(\text{Foreign population})_j + \beta_{02}(\text{Unemployment Rate})_j + \beta_{03}(\% \text{ Self-employed})_j + u_j.$$

$$\text{M6: } \beta_{0j} = \beta_{00} + \beta_{01}(\text{Foreign population})_j + \beta_{02}(\text{Unemployment Rate})_j + \beta_{03}(\% \text{ Manual Workers})_j + u_j.$$

$$\text{M7: } \beta_{0j} = \beta_{00} + \beta_{01}(\text{Increase Rate})_j + \beta_{02}(\text{Unemployment Rate})_j + u_j.$$

To test hypothesis 5, proportion of Old-Comers within foreign residents is added to model 2 in model 8.

$$\text{M8: } \beta_{0j} = \beta_{00} + \beta_{01}(\text{Foreign population})_j + \beta_{02}(\text{Unemployment Rate})_j + \beta_{03}(\% \text{ Old-Comers})_j + u_j.$$

Table 3 shows coefficients and model fits of each model. As model 0 indicates, there are significant regional level variances. This means that the average of anti-immigrant attitudes differs between prefectures. Regional level variance becomes insignificant by adding regional level variables (model 2–8); these variables explain the difference of average anti-immigrant attitudes between prefectures.

Model 1 tests effects of individual variables; age has a positive effect on anti-immigrant attitudes (0.025). The older a person is, the stronger the anti-immigrant attitude they have. Men are more likely to show strong anti-immigrant attitudes than women (0.262). This result corresponds to that in previous researches (e.g., Quillian 1995; Hello et al. 2006). Neither education nor household income has significant effects on anti-immigrant attitudes while occupational status has. Employers show weaker anti-immigrant attitudes than manual employees do. From the survey in the Tokyo metropolitan area, many enterprises perceive a shortage of labor, especially that of manual workers (Iyotani 1992). For owners of enterprises, an increase in immigrants is necessary to maintain their enterprises. Conversely, for manual workers, this means an increase in competition. This difference of standpoint seems to cause a difference of attitude toward immigration.<sup>(3)</sup> Moreover, political attitude does not affect anti-immigrant attitudes. This indicates that immigration policy has not yet become a political issue in Japan. Contact has a negative effect on anti-immigrant attitudes; if the other variables are set to be the same, those who never see foreign residents around their homes are more likely to show strong anti-immigrant attitudes by 40 per cent compared with those who frequently see them. This result follows what Ohtsuki (2006) points out: even superficial contact reduces anti-immigrant attitudes in Japan. These effects of individual variables change only by a small degree when regional variables are controlled (Model 2 to Model 8).

Model 2 and model 3 examine effects of size of foreign population as a whole and effects of economic conditions of each region. Size of foreign population has a positive effect on anti-immigrant attitudes in both models. Previous researches in Europe imply that size of foreign resident population affects anti-immigrant attitudes little, or only in recession (Quillian 1995; Hjerm 2007). However, a large size of foreign resident population does strengthen a negative attitude toward immigrants in Japan as previous researches about the Japanese case find (e.g., Nukaga 2006; Ohtsuki 2006; Nagayoshi 2008). By contrast, unemployment rate has a negative effect (−0.301). This is opposite to

what is assumed: the worse the economic condition of the region one lives in, the more positive the attitude toward immigrants becomes. Moreover, tax power also has a negative effect on anti-immigrant attitude (-1.457) in model 3. This means that people become more tolerant toward immigrants when they live in a wealthier prefecture. There is a contradiction. The fit of the model 2 are better than those of the model 3. Therefore, it can be said that unemployment rate explain regional difference of anti-immigrant attitudes more than tax power.

Model 4 examines effects of sizes of foreign resident populations divided according to their nationalities (Hypothesis 1), and there are differences of effects of size according to their nationalities: size of South American population (0.577) or Chinese (1.228) have significant positive effects while size of Koreans, Westerners, and the other foreign populations do not. Japanese people are likely to look down on South American countries and to have a negative image of China. These differences of perceived hierarchical positions regarding each nationality might affect Japanese attitudes toward immigrants. Westerners are in higher positions in Japanese ethnic hierarchy; as a result, even if their size is large, Japanese people do not have strong anti-immigrant attitudes. Japanese people have less negative image of Korea than of China (Tanabe 2008), it may affect a result that a size of Koreans has no significant effect on anti-immigrant attitudes while a size of Chinese people has positive effect. Moreover, by controlling these sizes, the effect of unemployment rate becomes insignificant. The unemployment rate is small in a prefecture where the sizes of South American or Chinese populations are large.<sup>(4)</sup> Unemployment rate has a negative effect on anti-immigrant attitudes in model 2, but it seems to stem from this correlations between unemployment rate and size of South American or and of Chinese populations. However, if we look at sample-size adjusted BIC, model 2 fits better. Therefore, there is a possibility that unemployment rate explains anti-immigrant attitude more than size of each nationalities.

In model 5 and 6, we test effects of social position of foreign residents on anti-immigrant attitudes (Hypothesis 2 and 3). However, the portion of self-employed does not have a significant effect (model 5). This means that the difference whether foreign residents are employed or not does not affect anti-immigrant attitudes. Conversely, the portion of manual workers within foreign workers does have a positive effect on anti-immigrant attitudes (0.013). As hypothesis 3 assumes, the higher the portion of manual workers among foreign workers in the prefecture one lives in, the more negative toward immigrants a person becomes. For example, ten-percent increase of portion of manual workers increases a probability of having high anti-immigrant attitudes by 12 percent. Foreign residents who work in manual work are perceived as a threat which debases the living conditions of the host residents, and as a result, the host residents become negative toward immigration. On the contrary, if foreign residents work in professional or ethnic niche jobs in sales or service works, they are less perceived as a threat by host residents. Moreover, this model (model 6) fits the best of all the models in AIC and the sample-size adjusted BIC, and its degree of -2LL is almost as small as that of the model 4. Those from Brazil, Peru, or China are more likely to work as manual workers than Koreans or Westerners. In 2005, around 85 percent of Brazilians and Peruvians and 50 percent of Chinese work as manual workers such as production processors and construction workers. By contrast, more than 75 percent of those from the U.K. and around 70 percent from the U.S. work as professionals. Compared to the other nationalities, Koreans work in a wider range of occupations (Ministry of Internal Affairs and Communications 2008a). These differences of occupation seem to affect difference of effects of size of each nationality. In addition, the effect of unemployment becomes insignificant in this model. The unemployment rate negatively affects anti-immigrant attitudes because the portion of manual workers among foreign residents is high in prefectures where the unemployment rate is low.<sup>(5)</sup>

Table 3 Multilevel Analysis of Anti-Immigrant Attitude

	M0	M1	M2	M3	M4	M5	M6	M7	M8
Intercept	-0.244 **	1.280 **	0.060	1.279 **	0.064	0.059	0.056	0.056	0.058
Age	0.025 **	0.024 **	0.024 **	0.024 **	0.024 **	0.024 **	0.024 **	0.024 **	0.024 **
Gender									
Male	0.262 *	0.260 *	0.260 *	0.267 *	0.268 *	0.261 *	0.270 *	0.262 *	0.260 *
Female	-	-	-	-	-	-	-	-	-
Education									
Less than Upper Secondary	0.064	0.064	0.105	0.085	0.071	0.094	0.066	0.087	0.101
Above Upper Secondary	-	-	-	-	-	-	-	-	-
Occupational status									
Employer	-0.902 **	-0.869 **	-0.869 **	-0.915 **	-0.870 **	-0.874 **	-0.877 **	-0.865 **	-0.872 **
Non-manual Self-Employed	0.013	0.039	0.039	0.034	0.072	0.054	0.050	0.055	0.045
Non-Manual Employee	0.042	0.085	0.085	0.067	0.104	0.091	0.102	0.088	0.087
Manual Self-Employed	0.097	0.115	0.115	0.116	0.138	0.129	0.128	0.130	0.122
Manual Employee	-	-	-	-	-	-	-	-	-
Farmer	0.113	0.121	0.121	0.158	0.120	0.114	0.111	0.118	0.119
Unemployed	-0.189	-0.144	-0.144	-0.154	-0.100	-0.120	-0.125	-0.118	-0.135
Not in a labor market	0.167	0.192	0.192	0.193	0.222	0.198	0.219	0.203	0.194
Lowest quartile	-0.097	-0.060	-0.060	-0.094	-0.043	-0.052	-0.051	-0.055	-0.058
The Rest	-	-	-	-	-	-	-	-	-
Household Income									
D.K. N.A.	0.166	0.163	0.163	0.182	0.164	0.158	0.158	0.156	0.160
Political Attitude	0.072	0.070	0.070	0.081	0.078	0.074	0.075	0.073	0.071
Contact	-0.126 *	-0.169 **	-0.169 **	-0.153 *	-0.175 **	-0.176 **	-0.172 **	-0.170 **	-0.172 **
Whole	0.204 **	0.204 **	0.204 **	0.666 **	0.247 **	0.247 **	0.236 **	0.221 **	0.221 **
Chinese	1.228 *								
Korean	-0.053								
Western	-0.177								
South Americans	0.577 **								
Others	-0.058								
Foreign Population									
Self-Employed	-0.028								
Manual Worker	0.013 **								
Increase Rate									
Old-Comers	0.483 **								
Unemployment Rate									
Tax Power	-0.301 **								
Variance(Level2)	-1.457 **								
Model Fit									
-2LL	2458.692	2348.438	2310.828	2320.780	2301.022	2308.446	2302.316	2309.252	2310.200
AIC	2462.691	2380.437	2346.827	2356.780	2345.022	2346.446	2340.316	2345.252	2348.198
Sample-Size Adjusted BIC	2467.328	2417.535	2388.562	2398.515	2396.031	2390.499	2384.369	2387.986	2392.252

Note) N=1800, \*\* p &lt; 0.01, \* p &lt; 0.05

In model 7, the rate of increase has a positive effect (0.483) as hypothesis 4 assumes—rapid increase of immigrants stimulates anti-immigrant attitudes. However, the fit of the model is not as good as that of the model 4 or of the model 6. Therefore, differences of nationalities or social positions of foreign residents explain differences of anti-immigrant attitudes of host residents more than rate of increase of foreign residents does.

Model 8 tests effects of the proportion of Old-Comers (Hypothesis 5). However, the portion of Old-Comers within foreign resident populations does not affect the anti-immigrant attitude (model 8). Thus, what matters is not the size of the portion of Old-Comers. In other words, whether a prefecture has a history of accepting foreign residents does not affect today's anti-immigrant attitudes.

## 5. Discussions

The aim of this paper is to examine why the size of foreign resident populations differently affects anti-immigrant attitudes according to their nationalities. In this research, we focus on effects of the social position of foreign residents on anti-immigrant attitudes, which assume to cause these differences. From the analysis, the following results are found. Nationalities, occupations, and increased rate of foreign residents affect anti-immigrant attitudes, while the portion of Old-Comers does not. In areas which have large South American or Chinese residents, or which have a large portion of foreign residents working as manual workers, or in case the number of foreign residents increases rapidly, the host residents become more negative toward immigration. These results relate to each other. South Americans are likely to work as manual workers, and the number of South Americans and Chinese are also increasing rapidly these days. These conditions affect the host residents' views toward immigration. When we compare the fit of the model, the portion of manual workers among foreign workers seems to play the most important role. If foreign residents in a prefecture mostly work in professional or ethnic niche jobs, such as English teachers or workers in international offices, they are not perceived as a threat. In this case, people do not need to fear that their daily life is corroded by foreigners. Foreign workers are seen as a threat only when they share jobs with Japanese residents.

To the question whose size counts, the answer from the results of this research is: the size of foreign resident populations that are in a competitive position with the host residents. This finding of this research offers an important suggestion toward research about anti-immigrant attitudes: we need to consider not only the ethnicity of foreign residents but also their social and economic position. Group threat theory assumes both aspects affect anti-immigrant attitudes. Ethnicities of immigrants relate to host residents' perceptions about group positions while social and economic positions of immigrants relate to the perception of threat. However, little attention is paid to these latter aspects whereas the effect of size of specific ethnic groups, especially 'visible minorities', is frequently tested. Focusing on the social position of foreign residents can be one way to answer why size matters in some cases and not in others. The difference of effects of size according to nationalities found in the previous research in Japan can be explained from this point of view. The previous researchers find that portion of Koreans within foreign residents negatively affect anti-immigrant attitudes while size of South Americans positively affect them. This seems to be result from the difference of occupations these two groups are likely to have. South Americans are likely to work as manual workers while Koreans are not; therefore, the former are perceived as threat by host residents while the latter are not. Moreover, this can be one answer why size of foreign population as a whole affects anti-immigrant attitudes in Japan while it does not in European countries. If there is a dual labor market between host residents and immigrants, the host residents feel less threat from the existence of immigrants than in

the case they share the same labor market. Some researchers point out that Japanese society does not have a dual labor market yet (Shikibe 1992). This might be a possible explanation of why size matters in Japan.

The size of the Korean resident population as well as the portion of Old-Comers does not affect anti-immigrant attitudes. Contrary to what Nukaga (2006) assumes, the history of civil rights movements by Korean residents seems not to affect the host residents' view toward immigrants. However, a different view appears when we look at the occupations Koreans are likely to have. They are more likely to work in clerical and related work than the other nationalities are. In 2005, 14.3 percent of Korean workers do clerical and related works while 7.0 percent of Chinese workers and 1.8 percent of Brazilian workers do these works (Ministry of Internal Affairs and Communications 2008a). It is true that they often work in companies owned by Koreans; however, the number of those who work in companies owned by Japanese people is increasing these days (Kim 1995). Therefore, it can be said that Koreans also compete over jobs with Japanese people. However, the size of the Korean population does not strengthen anti-immigrant attitudes. Thus, the long history of struggle against discrimination is bearing fruit in that they are not perceived as a threat but as colleagues when they share the same jobs. Of course, we should note that this may be the result of their assimilation into the Japanese culture, for example, their use of Japanese names.

There are also limitations to this research. One limitation is a definition of the unit of region. Here we use a prefecture as a unit, but the size of foreign resident populations differs from municipality to municipality. For example, in the Aichi prefecture, more than 50 percent of foreign residents live in five out of sixty-three municipalities. Moreover, it is found that the effect of size changes according to whichever unit we use (Hjerm 2007). Therefore, to test our findings using municipal level units remains a task for future research.

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### **[Notes]**

- (1) Human rights education is active in these areas not only because of the existence of Koreans, but also because of the existence of Burakumin, a Japanese caste-like social minority (Nakazawa 2007). Therefore, a history of civil rights movements by Burakumin as well may affect anti-immigrant attitudes.
- (2) We use portions of self-employed and manual workers for 2005, since these data are the latest. The other contextual indicators are based on the data of 2006.
- (3) It is difficult to find whether an increase of immigrants actually increases competition. Many enterprises are willing to employ foreign workers because few Japanese workers want to work for them (Iyotani 1992; Shikibe 1992). In this case, we cannot say the competition is increasing. However, what is significant here is how Japanese people perceive conditions. The results of this research imply manual workers feel the threat of losing their jobs because of the increase of immigrants while employers perceive the advantage of the increase of immigrants.
- (4) Correlation between unemployment rate and size of South Americans is  $-0.516$ , and correlation between unemployment rate and size of Chinese is  $-0.361$ . Both are significant ( $n = 47$ ).

- (5) Correlation between unemployment rate and portion of manual workers within foreign residents is  $-0.710$ , which is significant ( $n = 47$ )

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