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Public Preferences on Immigration in Japan

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Abstract

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1. Introduction

Anti-immigration sentiment is evident in many developed countries. The recent wave of globalization has facilitated the movement of capital and labor across nations, and consequently, labor in developing countries and emerging economies has flowed into many developed countries in search of jobs, safety, higher quality of life and higher wages. However, immigrants are often considered as a source of downward pressure on wages and increased pressure on employment in the local labor market and this would drive cultural conflict, cause crimes, deteriorate fiscal conditions and public services, and then evoke anti-immigration sentiment and xenophobia. In fact, the radical right-wing parties spreading over Europe often argue for prohibiting immigration as part of their political platforms. Such anti-immigration sentiments appear to intensify with protectionist trade movements, and this has resulted in a split of the views on globalization.

In terms of existing research, Borjas (1999) analyzes whether the labor inflows from immigration give rise to welfare losses and points out the possibility of immigration indeed exerting downward pressure on wage rates and crowding out local labor. This is the basic mechanism that leads local people to oppose immigration in fear of unemployment and lower wages. Some empirical analyses have confirmed this mechanism including, for instance, Borjas (2003) in the US, Aydemir and Borjas (2007) in North America more broadly and Felbermayr et al. (2010) in Germany. However, rather less attention has been devoted to the factors affecting antimigration sentiment at the individual level. This paper sheds light on this important policy decision by investigating what the Japanese think of immigration using the Keio Household Panel Survey (KHPS).

Japan is an exceptional country in terms of its immigration policy in that it does not accept much immigration at all. Although Japan has a long commitment to trade liberalization, successfully reducing tariff rates and nontariff barriers for trade with Japan, it is reluctant to accept immigration.

For the most part, immigration into Japan has been highly regulated, except for partially accommodating some temporary workers and a few technical intern trainees. However, Japan has recently seen some gradual changes in foreign labor and immigration policy with several reforms proposed by its former Prime Minister Shinzo Abe. Japan faces a looming shortage of labor due to the rapid speed of growth in its elderly population and depopulation. To overcome this difficulty and promote economic growth, the Japanese government has recently ratified several free trade agreements to increase the sale of Japanese exports in foreign markets and to benefit from the lower prices of imports.[2] In parallel, the Japanese government also initiated several policy reforms concerning the acceptance of a limited number of foreign workers, which is expected to help mitigate its labor force shortage. The number of foreign workers dramatically increased over the last decade: 0.68 million (1.46 million) foreign workers live in Japan as of October 2011 (October 2018) (Ministry of Health, Labour and Welfare, Japan). Skilled foreign labors were first accepted as special status of residence in 2014. The special status of residence was limited to foreign professional workers. In 2016, nursery workers were added to the list. In 2018, the Immigration Control and Refugee Recognition Act was revised, in which unskilled foreign workers were to be accepted in 14 specific jobs (e.g. agriculture, fishery, construction, and restaurant). The revision of 2018 was crucial in terms of allowing unskilled foreign workers to hold residential status, because the status of unskilled foreign workers was previously temporary worker, technical intern trainee and student. In spite of the crucial policy decision, congressional discussion on the revision of the law did not seem to be enough. Several mass-media and public organizations criticized such process of revision (e.g. Takasaka, 2019).[3] Some scholars pointed

[2] For example, Japan ratified the EU Japan Economic Partnership Agreements (EPA) in 2018. See Felbermayr et al. (2019) for details.

[3] Takasaka (2019) insists that the congressional discussion was not sufficient and it involves some legal and institutional problems in the enforcement of the revised law. Possible future problems are for instance neighborhood troubles and conflicts of interest particularly in rural areas and negative spillover impacts of lower wage foreign workers on the Japanese workers.

out public concerns and several problems involved by the revision (e.g. Kawamoto, 2019)[4]. Main concerns were cultural conflicts, the rise of crime rates and deterioration of labor conditions for foreign workers as well as the Japanese workers such as higher unemployment rates, lower wage and long-hour working.

Given these circumstances, it is worthwhile to investigate the immigration sentiments of Japanese at the individual level. The survey was conducted in 2017. Although this is the timing before the revision of the law of immigration control, there has already been some public debates on whether foreign workers and immigration can mitigate a looming shortage of labor due to depopulation (e.g. Hagiwara and Nakajima, 2014; Masuda, 2014; Masuda and Toyama, 2015).[5] The public debates on immigration and depopulation would affect the survey. The purpose of this paper is to reveal the extent to which Japanese attitudes toward immigration are affected not only by economic factors and individual characteristics, but also by several noneconomic (or noncognitive) factors such as behavioral bias, social stance and subjective well-being, as emotional and volitional processes.

The outline of the paper is as follows. Section 2 reviews the related literature. Section 3 presents the data set used in the analysis and provides some facts. Sections 4 and 5 report the estimation results. Section 6 includes some brief concluding remarks.

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[4] Kawamoto (2019) categorizes four types in public concerns and evaluation on the revision. 1) Foreign workers will make large contributions. This definitely mitigates the labor force shortage in Japan. 2) Japan cannot help accepting a number of foreign workers. But much more important is how good working conditions can be offered and how the Japanese people can collaborate well with foreign workers. 3) The Japanese culture and traditions in the labor market will be collapsed. Foreign workers will steal jobs from the Japanese workers and might also be in a danger for the Japanese labor market and labor customs. Therefore, the revision does not help labor shortage in Japan. 4) Even if the Japanese government allows unskilled foreign workers for residential permit, those who are working hard and have excellent skills might not come to Japan in the end and go to other countries with better working conditions.

[5] Masuda (2014) provides population projections at the municipality level in Japan. A striking fact is that around 900 towns and villages face a risk of 50% reduction in young female population (age 20 to 39) by 2040, indicating zero population in many municipalities in the future. This implies that the shrink of population size in Japan is much faster and larger than we expect. Based on the projection, the issue on whether foreign immigration should be accepted or not is of great interest to the public (e.g. Masuda and Toyama, 2015).

2. Our Findings and the Related Literature

According to Mayda (2006) and Facchini and Mayda (2009), skilled labor tends to accept immigration in countries with abundant skilled labor.[6] At sectoral level, workers employed in growing sectors are more likely to support immigration (Dancygier and Donnelly, 2013). More recently, however Hainmueller, et al. (2015) find that labor market fears do not appear to affect attitudes toward immigration. As some recent studies have shown, some basic individual characteristics appear to be more crucial determinants of attitudes toward immigration, with males and the educated tending to be more positive toward accepting immigration, whereas the elderly tend to be more negative (Scholten and Thum, 1996; Scheve and Slaughter, 2001; O'Rourke and Sinnott, 2006; Calahorrano, 2013). Beyond such economic factors, noneconomic (or noncognitive) factors are thought to be much more crucial. Using the 1995 International Social Survey Programme (ISSP), O'Rourke and Sinnott (2006) conduct a cross-country investigation of 24 countries and find that people moving internationally tend to be less hostile to immigrants and that both chauvinism and patriotism evoke anti-immigration sentiment.

In addition to this, frequent contact with foreigners plays a key role. Those able to speak English and that have at least some foreign acquaintances tend to more positive toward accepting immigration. Using the Japanese General Social Survey (JGSS), prepared by Osaka University of Commerce (Osaka, Japan), Green and Kadoya (2015) conclude that English language conversation ability is most strongly associated with the individual perception of immigration.[7] Similarly, according to Yamamura (2012)[8], the frequency of contact with foreigners positively

[6] Ortega and Polavieja (2012) find that those disliking immigration tend to work in low-skill jobs whereas those working in high-skill and human capital-intensive jobs tend to be pro-immigration.

[7] Card et al. (2012) find that sharing local traditions, languages, and cultures are more crucial factors for attitudes toward immigration than concerns on lowering wages.

[8] Yamamura (2012) uses the 2003 JGSS data. The data include several questions on immigration, including

affects the perception of immigration, while Hainmueller and Hiscox (2007) conclude that university education positively affects attitudes toward foreigners by fostering tolerance to different cultures.[9] Conversely, ethnic concentration at the local level is related to negative attitudes toward immigration (Dustmann and Preston, 2001)[10] such that the size of the foreign population in a local community can sometimes foster opposition to immigration (Schlueter and Wagner, 2008).[11]

In addition to these factors, some recent studies highlight the role of noncognitive aspects, with psychological factors such as racial prejudice largely influencing attitudes to immigration.[12] Using the British Social Attitude Survey, Dustmann and Preston (2007) find that social and cultural prejudices are formative of anti-immigration sentiments. Furthermore, subjective well-being, such as happiness, mental health and life satisfaction is associated with an immigration sentiment (Gordon, 2018; Welsch et al., 2020). Using the European Social Survey, Welsch et al. (2020) obtain a strong positive correlation between immigration friendliness and subjective well-being.

Behavioral economics discuss how behavioral bias affects individual attitudes. From this perspective, Tomiura et al. (2019) examine Japanese individual attitudes toward foreign workers using unique individual survey data.[13] They hypothesize that behavioral bias, such as status quo

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the perceived consequences of immigration and the frequency of meeting foreigners as well as basic individual characteristics. The sample size is around 3,600 persons.

[9] Frequent attachment to foreign culture is also important. Yamamura and Shin (2016) find that Korean people who frequently view Japanese animation tend to accept Japanese as workplace colleagues and neighbors.

[10] Dustmann and Preston (2001) consider the impact of ethnic concentration at the local level on individual attitudes toward immigration and address some endogeneity concerns.

[11] In the case of Japan, the population size of South Americans in the local community positively affects anti-immigrant attitudes, whereas that of Koreans does not strengthen anti-immigrant attitudes (Nagayoshi, 2009; Nukaga, 2006).

[12] Facchini et al. (2017) and Nakata (2017) conduct a large-scale experiment in Japan to investigate whether information campaigns could decrease public opposition to immigration.

[13] Tomiura et al. (2019) employ a unique one-shot individual Internet survey conducted in October 2011 yielding a sample of about 10,000 individuals.

bias, risk aversion, patriotism and residential immobility bias, affects immigration sentiments. Of these, Tomiura et al. (2019) conclude that status quo bias and risk aversion are crucial impediments to the perceptions of immigration.

This paper draws on this body of work, particularly by highlighting the various noncognitive aspects of the attitude toward immigration. While these factors are thought critical in determining attitudes toward immigration, the few variables employed in existing studies are obviously not sufficient for us to understand deeply whether noneconomic factors are influential. The contribution of this paper is to overcome this qualification in the literature and highlight many kinds of noneconomic or noncognitive aspects and thoroughly investigate how these affect individual immigration preferences using a unique household survey, namely, the KHPS conducted by Keio University in Tokyo.

Accordingly, this paper integrates many of the aspects investigated in the several strands of existing research in the one study, including basic individual characteristics, behavioral bias à la Tomiura et al. (2019), foreign language skills and contact with foreigners as in Green and Kadoya (2015) and Yamamura (2012), the past overseas life experience from O'Rourke and Sinnott (2006), the population size of foreign workers in local communities in the spirit of Schlueter and Wagner (2008) and the subjective well-being of Welsch et al.(2020). In addition, we newly include social stance.

In this paper, we summarize the more sophisticated variables as: 1) economic factors and individual characteristics, such as gender, age, family, income, occupation, university degree, job status, 2) behavioral factors, including risk aversion, time preference and local patriotism, 3) attachment to foreigners, such as English language skills, Internet use and overseas experience, 4) subjective well-being, including health and happiness, 5) social stance, such as trust in government and neighborhood, donations to society and 6) regional population size of foreign

workers.

In addition, a further contribution of our paper is to update evidence on Japanese immigration sentiments in the literature.[14] The survey used in Tomiura et al. (2019) was conducted in 2011 and that in Yamamura (2012) in 2003, while our survey was conducted only in 2017, a period corresponding to a significant change in Japanese immigration policy. As a result of our econometric analysis, we find that individuals that are male, younger, richer and more educated tend to be more positive toward immigration. Furthermore, those that speak English fluently and have overseas experience also tend to be positive toward immigration, as are those that trust their neighborhood more than the government and that make donations as well as being healthier.

Lastly, apart from individual attitudes to immigration, there are some studies on attitudes to aspects of globalization such as protectionism and free trade, also using individual surveys in Japan.[15] For example, Tomiura et al. (2016) and Ito et al. (2019) investigate Japanese individual preferences toward trade liberalization.[16] They find that those working in agriculture and residing in agricultural areas are more likely to be protectionist and strongly against free trade. In parallel to this paper, noneconomic factors are critical in understanding the attitude toward trade liberalization. Like Tomiura et al. (2019), Tomiura et al. (2016) highlight behavioral biases and find that status quo bias leads people to oppose import liberalization. A much more thorough investigation of noncognitive aspects is evident in Yamamura and Tsutsui (2019), which finds that childhood experience of team sports results in individuals favoring trade liberalization. As there,

[14] Apart from the studies on Japanese immigration sentiments using individual surveys, labor economics literature has seen several policy studies on foreign workers in Japan (e.g. Nakamura et al. 2009). The main focus is on whether Japan should accept foreign workers and immigration, whether Japan should accept only high skilled foreign workers and how immigration will change labor market and can humper depopulation in Japan.

[15] There are several studies on economic factors. For instance, using a US survey of 5,500 individuals, Blonigen (2011) finds that educational background is a crucial factor determining trade preferences.

[16] Felbermayr and Okubo (2020) examine how noncognitive factors affect individual attitudes toward free trade agreements such as the Trans-Pacific Partnership using the individual survey data from the KHPS 2017.

this paper also focuses on noneconomic aspects but regarding immigration sentiment.

3. Data and Facts

3.1 Keio Household Panel Survey[17]

We mainly use KHPS 2017 because it includes questions on respondents' attitudes toward immigration. Our unit of observation is the individual (one or two persons per household: head of household and spouse, if any). In the case of an individual with a spouse, s/he also is asked to answer the same questionnaire in most cases. The KHPS is a two-stage stratified random representative survey conducted by Keio University.[18] The first wave was conducted in 2004, which covers around 8,000 individuals (4,500 households). KHPS has an advantage as a panel survey and thus the same households participate in the KHPS every year. Every wave of KHPS includes various information on the characteristics of the respondents and their households such as age, gender, place of residence, household composition, net income, occupation, educational background, job status, consumption and assets. In addition, the KHPS has the advantage of including some noncognitive questions such as risk attitude, health, happiness and social stance. Other than these basic questions on household and individual characteristics, the KHPS periodically includes modules with questions on specific issues. The KHPS 2017 included questions on immigration for the first time.

[17] The KHPS survey is also called the Japan Household Panel Survey, JHPS/KHPS or KJHPS. In 2014, the Japan Household Panel Survey(JHPS) was integrated to KHPS.

[18] In the first stage, Japan is stratified into 24 regions according to a city–region classification. The number of samples for each region is distributed in accordance with basic resident register population ratios. Then, the number of survey areas to be surveyed within each region is set up with around 10 households for each survey area, defined by districts corresponding to the Population Census, and a random sampling of the designated number of survey areas. Survey areas are employed by national census survey districts as sampling units. In the second sampling stage, basic resident registers for the selected survey areas are employed as sampling registers, and approximately 10 respondents for each survey area are drawn from the population.

3.2 Data

To start, the KHPS 2017 asks respondents about their attitude toward immigration using the following question: Which is your stance on the acceptance of immigration in the future in Japan? Positive, weakly positive, neutral, weakly negative, negative and unknown/unsure. We then include several economic variables to reflect household/individual socioeconomic characteristics, including age, gender, place of residence, household composition (i.e., number of family members), net income, educational attainment, job status such as temporary or working and membership of a labor union.

We construct control variables as follows. The variables for individuals are a gender dummy, *sex* (male = 1; female = 0), age (*age)*, a university dummy (*univ*) (university degree = 1; otherwise = 0), a nonregular worker dummy (*non_regular*) (nonregular worker = 1; otherwise = 0), number of family members (*num_family*) and a labor union dummy (*laborunion*) (membership = 1; otherwise = 0). The household economic variables are the log of net annual income (*income*) (in 10,000 yen). The variables specified as fixed effects are job occupation (for 18 categories) and household location (across 47 prefectures). See Table 1 for basic statistics, Appendix Table 1 for detailed definitions and Appendix Table 2 for the correlation matrix.

The KHPS also includes several questions relating to noneconomic factors. There are four sets of noneconomic variables grouped as follows, 1) behavioral bias, 2) communication with foreigners, 3) social stance and 4) subjective well-being. The first set of variables on behavioral bias includes questions relating to time preference (*Time pref*), risk attitude (*Risk averse*) and local patriotism (*Local patriot*). The question on time preference (*Time pref*) is the following: Instead of receiving 10-thousand-yen one month later, at least how much would you like to receive 13 months later? Choose from eight options (1 = 9,500, 2 = 10,000, 3 = 10,200, 4 = 10,400, 5 = 10,600, 6 = 11,000, 7 = 12,000 or 8 = 14,000 yen). Selecting a higher value infers that the respondent has a higher

time preference.

Next, risk aversion (*Risk averse*) is assessed using the following question: When you go out to a place you have never been to before with your family or friends, what percentage of chance of rain makes you decide to take an umbrella (0 to 100 percent)? A lower percentage indicates the respondent is risk averse, and vice versa. We note that these questions are asked only of the head of household without questioning the spouse. Lastly, local patriotism (*Local patriot*) is measured by respondents with the same birthplace and current place of residence. We suppose that persons that have lived for a long time in the same place tend to love their hometown, or so-called local patriotism. If birthplace and current place of residence are identical, then the dummy for local patriotism takes a value of one.[19]

The second set of variables is skills and experience to facilitate communication with foreigners. These are included in a module in KHPS 2015. Because the KHPS dataset has a panel structure, KHPS 2015 is only partly used with responses relating to the following statements: (1) English skill (*English*) (1 = not speaking English at all to 4 = speak English very fluently), (2) Internet skill (*Internet*) (a dummy for Internet use), and (3) no experience of living in foreign countries (*No_oversea*)(a dummy for nonexperience of living abroad). We assume that respondents with experience of living in various cultures and that can communicate with others from different backgrounds have an open mind to foreigners.

The third set of variables relate to social stance. KHPS 2015 includes a module of social stance questions, with responses ranging from 1 (negative/disagree) to 5 (positive/agree). The questions are as follows: (1) We should trust neighboring people (*trust_N*). (2) We can trust our government (*trust_G*). (3) The liberty-equality variable (*libeq*) is given by a question asking about which is

[19] Interregional migration may be hampered by local patriotism but is promoted by any positive differences in the regional real wage gap, job opportunities and local amenities. See Kondo and Okubo (2016) for the determinants of interregional migration in Japan.

important, liberty (1), neutral (0) or equality (–1). In addition, we use the responses to the question relating to the amount of donations to society in the previous year (unit: yen) (*Donation*). The fourth and final set of variables concerns subjective well-being such as happiness and health. Happiness (*happy*) is measured on a scale from 0 to 10 (0 = not happy at all to 10 = very happy), which asks about the level of happiness over their whole life. Health condition (*health*) is measured on a scale from 1 to 5 (1 = very bad to 5 = very good).

3.3 Facts on Attitude toward Immigration

Figure 1 plots the histogram of individual immigration sentiment and attitudes to trade liberalization. Overall, as shown in Table 2, the number of people with a pro-migration attitude (1,074 in total, 164 for positive and 910 for weakly positive) is much smaller than the number of people with anti-immigration sentiments (2,500 in total, 798 for negative and 1,702 for weakly negative). Thus, respondents that are negative toward immigration are 2.5 times more common than those agreeing to accept immigration. However, 2,797 respondents are neutral toward immigration and another 1,902 respondents are unknown or unsure (missing) about their attitude toward immigration.

As shown in Table 3, more respondents in our survey answered neutral or unknown (54 % in total, 33% for neutral and 21% for unknown) than those of Tomiura et al.(2019) (21%). There are three reasons why our survey observes more neutral and unknown. First, the timings of survey are different (2011 for Tomiura et al. (2019) and 2017 for ours) and circumstances around immigration and foreign workers have largely changed during this period, as mentioned in section 1. The number of foreign residents in Japan (“Zairyu Gaikoku Jin” in Japanese) substantially increased from 2 million in 2011 to 2.6 million people in 2017 (Ministry of Justice, Japan). This leads the respondents to realize more serious problems and/or more benefits on immigration that

have never been thought. Second, questions in the questionnaires are slightly different. They ask about attitudes toward foreigners coming to Japan for work, while we directly asks about attitudes toward future immigration. Thus our question directly reflects the current debates on whether to accept immigration or not. Third, more importantly, survey designs are different. Our survey questionnaire provides neutral as one of the multiple choices, i.e. strongly agree, agree, neutral, disagree, strongly disagree and then unknown/unsure. By contrast, Tomiura et al.(2019) provides multiple choices as strongly agree, agree, disagree, strongly disagree and unknown/unsure, i.e. no choice for neutral. Thus our survey can give a clear distinction between neutral and unknown/unsure. Respondents who thinks immigration as beneficial as well as harmful or feel the pros-cons of immigration tend to choose neutral in our survey. In other words, 21% of respondents answered unknown in our survey, which is the same percentage of undecided/unsure respondents in Tomiura et al. (2019). We note that the percentage of respondents answered neutral or unsure/unknown is nonnegligible number and thus Section 5-2 investigates what factors matter. As a comparison, Figure 1 also plots the histogram concerning respondent attitudes to trade liberalization, an item that is also included in the KHPS 2017.[20] Compared with the attitude toward trade liberalization, the distribution of respondents there is more negative, i.e., more respondents are concerned about immigration than trade liberalization. In particular, respondents responding slightly negatively about immigration are about 2.5 times more likely than those responding slightly negatively about trade liberalization.

Table 3 provides the correlations between the responses to the questions on immigration and free trade. As shown, 5.9% of respondents disagree with free trade as well as immigration and 6.0% of respondents agree with both free trade and immigration. However, 6.3% of respondents agree

[20] See Felbermayr and Okubo (2020) for details on Japanese attitudes toward trade liberalization in the KHPS 2017.

with free trade but not immigration. Thus, a non-negligible number of respondents is positive about free trade but negative about immigration. Even if many tend to agree to free trade, there is not a small number of respondents that disagree about immigration. This indicates that anti-immigration sentiment is affected by a mix of economic and noneconomic/noncognitive factors, which is in contrast with prevailing attitudes toward free trade. This confirms the findings in Mayda (2008).[21]

4. Estimations

We first estimate the following linear probability model:

$$Immigration_i = \alpha + \beta_1 X_i + \beta_2 Y_i + \beta_3 Z_i + \beta_4 S_i + \mu_i + \gamma_i + \varepsilon_i, \quad (1)$$

where *Immigration* is an indicator variable of the pros–cons of immigration for respondent *i*. If he/she agrees to accept immigration (either positive or weakly positive), *Immigration* takes a value of one. If he/she agrees to reject immigration (either negative, weakly negative or neutral), *Immigration* takes a value of zero. X is a set of variables reflecting the individual's basic socio economic factors such as gender, age, job status, education (university degree) and net income. Y denotes a set of variables reflecting behavioral bias such as risk aversion, time preference and local patriotism. Z is a set of variables denoting the skills and experience facilitating communication with foreigners such as English language skills, Internet use and overseas experience. S denotes a set of variables concerning social stance and subjective well-being. μ is prefectural dummy (residential base) (47 prefectures) and γ is occupation dummy (18 categories).

[21] Mayda (2008) finds that people on average tend to be more pro-trade than pro-immigration in many countries.

ε is error term.

Table 4 reports the estimation result. The first estimation includes the individual's basic characteristics. Column 1 of Table 4 reports the result. The sex dummy is significantly positive, which indicates that males tend to be positive toward immigration. The coefficients for net income and university degree are also significantly positive, but the coefficient for the number of family members is significantly negative. The magnitudes of coefficients are large particular in gender and university degree. Thus, respondents that are male, richer, more educated and from smaller families tend to agree with immigration. This result is consistent with the findings of O'Rourke and Sinnott (2006) and Scheve and Slaughter (2001). By contrast, theory predicts that workers joining labor unions and temporary workers fear immigration because it tends to depress wages, particularly for unskilled workers, or increase unemployment for workers in the host country. However, none of the coefficients for these variables are statistically significant. Accordingly, we are unable to verify that labor market factors are crucial in determining anti-immigration sentiments.

The second estimation concerns behavioral bias. As in Tomiura et al. (2019), we hypothesize that a high degree of risk aversion leads respondents to consider immigration as risky and they then take an anti-immigration stance, while respondents with a high degree of local patriotism tend to be conservative and uncomfortable about immigration. If a respondent has a lower time preference and cares about the serious shortage of labor in Japan in the future, they might be more willing to accept immigration and intend for it to solve the future problem. Column 2 of Table 4 provides the results.[22] Time preference is significantly negative. This indicates that people with

[22] We note that the variables for time preference (*Time pref*) and risk averse (*Risk averse*) are based on the questions only for the head of household (i.e. not all respondents in KHPS 2017). Thus, the number of sample in columns 2, 3 and 5 of Table 4 is smaller than in columns 1 and 4. See Appendix Table 1.

lower time preference tend to be positive about the perception of immigration, as expected. Risk averse and local patriotism are negative but not significant. We note that Tomiura et al. (2019) observe significantly negative coefficients for risk averse and local patriotism (defined as residential immobility), where respondents are negative about import liberalization.

The third estimation concerns the skills needed to facilitate communication with foreigners and overseas experience. Column 3 of Table 4 details the results. As shown, English language skill is significantly positive, while no overseas experience is significantly negative. Internet use is positive but not significant. Thus, English language skills and overseas experience positively affect the acceptance of immigration. In particular, the magnitudes of coefficients on English language skills and oversea experience are large. Communication skills with foreigners and attachment to foreign culture are crucial factors affecting the perception of immigration. This is consistent with previous studies (e.g., Yamamura, 2012) suggesting frequent contact with foreigners makes people more open-minded and tolerant of immigration.

The fourth estimation concerns social stance and subjective well-being. We hypothesize that more altruistic people are generous to others and tolerant of diversity and thus tend to agree with immigration. Columns 4 and 5 of Table 4 report the results. While trust in government is negative, trust in the neighborhood is significantly positive. *Donation* is also significantly positive. *Health* is also significantly positive, although happiness is not significant. Among them, the magnitudes of coefficients are large particularly in health and trust in neighborhood. Thus, healthier people prefer to accept immigration and generous people who love their neighborhood and make donations tend to accept immigration. This is consistent with the findings of previous studies (e.g., Welsch et al., 2020).

Overall, we find that not only socioeconomic but also non-economic factors affect attitudes to immigration, although labor market factors such as labor union members and non-regular workers

do not. In particular, income, gender and family size tend to be strong explanatory socioeconomic variables while English language skills, oversea experience, health and time preference tend to be strong in non-economic factors. Some socioeconomic as well as non-economic factors are crucial in understanding Japanese attitudes toward immigration.

5. Additional Analyses

5.1 Neighboring Foreigners

As discussed in some previous studies, attitudes toward immigration may be affected by an individual's foreign neighborhood and compositional amenities (Card et al. 2012). In particular, the size of the foreign community at the local level might matter. For instance, those who live in a place with many foreign workers tend to be more generous toward immigration. Likewise, those living in a place with few foreign workers tend to be insensitive to immigration. By adding a variable on foreign labor force at a prefectural level to equation (1) without prefectural fixed effects, we conduct estimations to investigate this effect. We use the number of foreign workers at the prefectural level from the annual statistics on the number of foreigners prepared by the Ministry of Health, Labour and Welfare of Japan ("*Gaikokujin Koyo Joukyo"*, Registration on Foreign Workers). The variable, *Foreign Unskill*, is measured by the population share of foreign workers in each prefecture. Column 1 of Table 5 reports the result. The variable is not significant at all. The magnitude of coefficient is very small. Even if we use the number of unskilled foreign workers in the total prefectural population, the result remains the same. Thus, it seems that foreign workers in the local community do not majorly affect an individual's attitude toward immigration. Or it could simply be that Japan does not currently accept much immigration. Foreign population increased in recent years and 2.87 million foreign people live in Japan as of January 2020, but it still accounts for 2.3% only (Ministry of Internal Affairs and Communications, Japan). Thus the

size of foreigner communities in Japan is still too small to affect Japanese attitudes toward immigration.

5.2 Apathy

To this point, our sample is limited to respondents that respond to the question on immigration with either agree, neutral or disagree. However, a nonnegligible number of respondents answered unknown (1,730 out of 8,273 respondents, as shown in Table 2) when asked about immigration. This could be interpreted as apathy or a lack of knowledge among respondents. In general, these kinds of surveys include at least some respondents that also answer unknown or unsure when questioned about any type of policy agenda. However, immigration might be particularly typical in this respect in that the limited number of immigrants currently accepted in Japan makes it difficult for respondents to first take an interest in immigration and foreign labor, to next seriously consider future immigration policy and only then to answer the question properly. Thus, it is worthwhile to investigate the factors that result in some people being reluctant to reveal a distinct pro or con attitude toward immigration. To estimate this, we specify a so-called apathy dummy as the dependent variable. If a respondent answers unknown or unsure, then the dummy takes a value of one. If the respondent answers either positive/weakly positive, neutral or negative/weakly negative, then the dummy takes a value of zero. The following equation is estimated by the linear probability model as in the previous section:

$$Apathy_i = \alpha + \beta_1 X_i + \beta_2 Y_i + \beta_3 Z_i + \beta_4 S_i + \mu_i + \gamma_i + \varepsilon_i, \quad (2)$$

where *Apathy* is the apathy dummy. All control variables are the same as in equation (1). Column 2 of Table 5 reports the result. The sex dummy, university degree, age and income are all

significantly negative, while the number of family members is significantly positive. Thus, younger females without a university degree tend to be unconcerned about immigration because they might have insufficient knowledge nor any interest in having an opinion. Respondents with lower incomes and from larger families also tend to answer unknown or unsure. Regarding noneconomic factors, local patriotism is significantly positive, while English language skills and Internet use are both significantly negative. Furthermore, although subjective well-being including happiness and health is not significant, neighborhood trust is negatively significant.

As a robustness check, neutral attitude toward immigration is also included as apathy. Now apathy dummy is one if they are neutral as well as unknown. As reported in column 3 of Table 5, the result is similar to previous one.

Thus, we can say that respondents that cannot speak English nor use the Internet and that do not trust the neighborhood tend to respond that they are unknown or unsure about immigration, which we take as evidence supporting apathy.

5.3 Robustness Check

As a robustness check we employ other estimation models. Instead of the linear model, we estimate the equation in the probit model by using the immigration dummy and the ordered logit model by using continuous variables for immigration, i.e., positive (= 5), weakly positive (= 4), neutral (= 3), weakly negative (= 2) and negative (= 1). Columns 4 and 5 of Table 5 report the results, which are consistent with the outcomes of the earlier linear probability model.

6. Conclusion

This paper investigates Japanese attitudes toward immigration using the individual survey data in

the KHPS. The focus is on the impact of noneconomic factors such as behavioral bias, communication with foreigners, social stance and subjective well-being. Previous studies discuss these issues separately, whereas our paper estimates all of these in the one analysis. As a result, we find that Japanese that are male, richer, more educated, younger and from smaller families tend to agree with immigration into Japan. These results are consistent with those of previous studies. Furthermore, those who have a lower time preference, better English language skills and past overseas experience tend to be more positive about immigration. In addition, Japanese that trust their neighborhood rather than the government and that make donations to society and keep in good health tend to be positive about immigration. Future research should further investigate this area using time series data.

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Table 1: Basic Statistics

stats	immigration	Apathy	Time pref	Risk averse	Local Patriot	Health	Happy	libeq	trust_G	trust_N	English
N	6371	8101	3675	3700	6371	6348	6349	6237	6292	6289	6250
mean	0.1685764	0.2135539	5.763265	39.5173	0.6867054	3.323409	6.437707	0.1635402	2.578195	3.517252	1.42784
sd	0.3744067	0.4098406	2.0091	23.59853	0.4638695	0.9280939	1.810084	0.7284634	0.9681404	0.9227802	0.6155758
min	0	0	1	0	0	1	0	-1	1	1	1
max	1	1	8	100	1	5	10	1	5	5	4

stats	Internet	Donation	no_oversea	sex	age	univ	num_family	non_regular	laboruion	Income
N	6371	6348	6371	6312	6312	6371	6222	6371	6371	5681
mean	0.773348	2.420688	0.9251295	0.5158428	56.77899	0.2071888	3.159274	0.2296343	0.1205462	6.0844
sd	0.4186985	4.053097	0.2632029	0.4997885	13.33624	0.4053238	1.352937	0.4206307	0.3256247	0.6898596
min	0	0	0	0	26	0	1	0	0	0
max	1	13.81551	1	1	95	1	10	1	1	8.537192

Table 2: Attitudes to immigration and trade liberalization

	Positive	Slightly positive	Neutral	Slightly negative	Negative	Unknown	Missing	Total
Attitudes to Immigration	164	910	2,797	1,702	798	1,730	172	8273
Attitudes to Trade Liberalization	438	1,146	3,370	672	338	2,191	118	8273

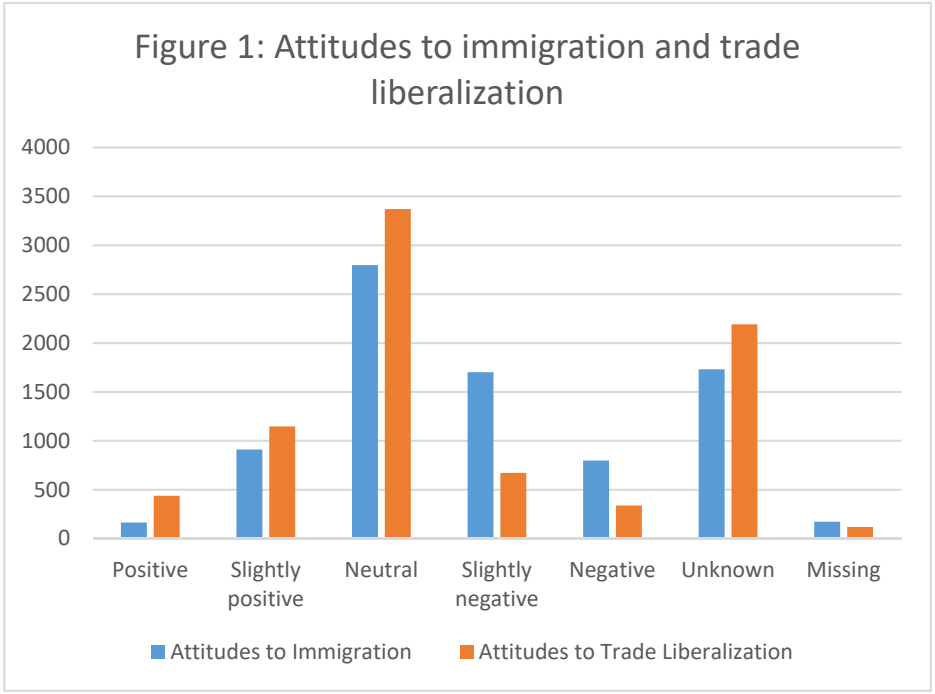

Table 3: Attitudes toward Immigration and trade liberalization (%)

		Immigration							
		Positive	Slightly positive	Neutral	Slightly negative	Negative	Unknown	Missing	Total
trade	Positive	0.71	1.45	1.17	0.97	0.86	0.13	0.00	5.29
	Slightly positive	0.33	3.49	5.06	3.06	1.39	0.46	0.06	13.85
	Neutral	0.40	3.61	18.77	9.39	2.85	5.35	0.35	40.73
	Slightly negative	0.08	1.00	2.72	2.57	1.25	0.46	0.04	8.12
	Negative	0.29	0.48	0.91	0.81	1.32	0.27	0.01	4.09
	Unknown	0.17	0.93	5.08	3.75	1.96	14.17	0.44	26.48
	Missing	0.00	0.02	0.10	0.02	0.02	0.07	1.18	1.43
	Total	1.98	11.00	33.81	20.57	9.65	20.91	2.08	100.00

Table 4: Estimation Results 1

	1		2		3		4		5	
sex	0.07405	6.51 ***	0.103299	6.5 ***	0.10592	6.62 ***	0.07491	6.48 ***	0.105339	6.54 ***
age	-0.0005	-0.94	-0.00065	-1.01	0.00045	0.64	-0.0005	-0.95	0.000159	0.22
univ	0.04217	3.02 ***	0.022749	1.23	-0.0063	-0.33	0.03681	2.62 ***	0.00175	0.09
num_family	-0.0181	-3.83 ***	-0.02454	-4.51 ***	-0.0227	-4.16 ***	-0.0168	-3.57 ***	-0.0222	-4.05 ***
non_regular	0.00097	0.07	0.028745	1.55	0.02832	1.52	0.00738	0.51	0.029142	1.56
laborunion	-0.0081	-0.48	-0.01391	-0.63	-0.0131	-0.59	0.00181	0.1	-0.00918	-0.41
income	0.02114	2.64 ***	0.031341	3.2 ***	0.02418	2.44 **	0.01614	1.98 *	0.021673	2.18 **
Time pref			-0.0123	-3.49 ***	-0.0133	-3.74 ***			-0.01245	-3.52 ***
Risk averse			0.000107	0.36	8.2E-05	0.28			-1.75E-07	0
Local patriot			-0.01886	-1.13	-0.0098	-0.59			-0.00395	-0.24
English					0.06767	4.71 ***			0.05965	4.08 ***
No_oversea					-0.0723	-1.91 **			-0.06283	-1.64 *
Internet					0.01207	0.64			0.010105	0.53
health							0.02571	4.18 ***	0.023263	2.8 ***
happy							0.00413	1.3	0.000932	0.23
libeq							0.012	1.54	0.005613	0.58
Trust G							-0.0127	-1.92 *	-0.01255	-1.6
Trust N							0.0195	2.74 ***	0.021654	2.59 ***
Donation							0.00382	2.51 **	0.004493	2.46 **
Obs	5551		3186		3,143		5,358		3,078	
F	6.2		6.94		10		18		23	
R-sq	0.0334		0.0527		0.0671		0.0425		0.075	

Note: Prefecture and occupation fixed effects are included, but omitted from table.

Standard errors are clustered by household.

Statistical significance shown by *** 1%, ** 5%, and * 10%.

Table 5: Estimation Results 2

	1		2		3		4		5	
Dependent variables:	Immigration		Apathy		Apathy (incl. neutral)		Immigration (binary)		Immigration variable	
sex	0.105184	6.53 ***	-0.05964	-4.36 ***	-0.10384	-5.4 ***	0.427983	6.51 ***	0.193669	2.4 **
age	0.000167	0.23	-0.00227	-3.53 ***	-0.00184	-2.24 **	0.000658	0.23	0.000884	0.24
univ	0.000171	0.01	-0.03194	-2.32 **	-0.0667	-2.96 ***	-0.00015	0	-0.14981	-1.52
num_family	-0.0214	-3.94 ***	0.014845	3.07 ***	0.027948	4.31 ***	-0.09458	-4.03 ***	-0.03447	-1.27
non_regular	0.026768	1.44	0.031254	1.9 *	-0.00133	-0.06	0.125384	1.62 *	0.080739	0.87
laborunion	-0.01207	-0.55	0.019055	0.98	0.013994	0.52	-0.02484	-0.27	-0.04227	-0.36
income	0.021411	2.16 **	-0.02625	-2.85 ***	-0.02504	-2.01 **	0.097468	2.19 **	0.054644	1.14
Time pref	-0.01206	-3.44 ***	-0.00338	-1.05	-0.0012	-0.3	-0.04956	-3.61 ***	-0.06657	-3.84 ***
Risk averse	-7.4E-05	-0.25	6.69E-05	0.25	-8.2E-05	-0.23	7.92E-05	0.07	-0.0003	-0.2
Local patriot	-0.01587	-1.01	0.031207	2.3 **	0.005624	0.29	-0.00189	-0.03	-0.09671	-1.18
English	0.063022	4.34 ***	-0.06032	-5.52 ***	-0.04889	-3.02 ***	0.219343	4.17 ***	0.217205	2.87 ***
No_oversea	-0.06375	-1.67 *	0.012275	0.54	0.025323	0.65	-0.21152	-1.77 *	-0.28341	-1.53
Internet	0.008537	0.45	-0.08081	-4.53 ***	-0.05887	-2.58 **	0.042211	0.53	0.032581	0.35
health	0.022325	2.7 ***	-0.01114	-1.52	-0.01016	-1.07	0.096362	2.94 ***	0.117472	2.66 **
happy	0.001403	0.35	-0.00194	-0.51	-0.00299	-0.61	0.001078	0.06	0.004414	0.21
libeq	0.006251	0.65	-0.00306	-0.39	-0.04533	-3.94 ***	0.019712	0.51	-0.11456	-2.32 **
Trust G	-0.0119	-1.54	0.008054	1.24	0.024485	2.75 ***	-0.0543	-1.8 *	0.012502	0.3
Trust N	0.021115	2.56 ***	-0.01702	-2.33 **	0.004407	0.47	0.088933	2.58 **	0.172547	3.98 ***
Donation	0.004154	2.29 **	-0.00631	-4.31 ***	-0.00746	-3.53 ***	0.016983	2.44 **	0.009473	1.05
Foreign unskill	0.002238	0.6								
Obs	3,078		3736		3,736		3,040		3,078	
F	340.88		9.96		4.95					
R-sq	0.0591		0.0787		0.0687					
pseudolikelihood							-1329.14		-4086.25	
	Linear		Linear		Linear		Probit		Ordered logit	

Note: In Column 1, occupation fixed effect is included, but omitted from table.

In Columns 2-5, prefecture and occupation fixed effects are included but omitted from table

Standard errors are clustered by household.

Statistical significance shown by *** 1%, ** 5%, and * 10%.

Appendix Table 1: Definition of Variables

Variable names	Definitions	Sources
Immigration	Agree or weakly agree with immigration(=1), disagree, weakly disagree or neutral (=0)	KHPS 2017
Apathy	Agree, weakly agree, disagree, weakly disagree or neutral (=0), unknown/unsure (=1)	KHPS 2017
Time pref	Instead of receiving 10-thousand-yen one month later, at least how much would you like to receive 13 months later? Note: this question is asked only for the head of household.	KHPS 2017
Risk averse	When you go out to a place you have never been to before with your family or friends, what percentage of chance of rain makes you decide to take an umbrella? Note: this question is asked only for the head of household.	KHPS 2017
Local patriot	If prefecture s/he was born is the same as the current living, then it takes one. Otherwise zero	KHPS 2017
libeq	S/he prefers liberty(=1), neutral (=0) or equality(=-1)	KHPS2015
trust_G	Trust government, 1 (disagree) to 5 (agree)	KHPS2015
trust_N	Trust neighborhood, 1 (disagree) to 5 (agree)	KHPS2015
English	English skills (1 = not speaking English at all to 4 = speak English very fluently)	KHPS2015
Internet	Internet (1 = if use, 0 = if not use)	KHPS2015
Donation	The amont of donation (ln, yen)	KHPS2015
No_oversea	No oversea experience (1 = no experience, 0 = experience)	KHPS2015
Health	Health (1 = very bad to 5 = very good)	KHPS 2017
Happy	Happiness (0 = not happy at all to 10 = very happy)	KHPS 2017
sex	gender dummy. Male(=1), female(=0)	KHPS 2017
age	Age	KHPS 2017
univ	Dummy for university degree (1 = university degree)	KHPS 2017
num_family	Number of family member	KHPS 2017
non_regular	Dummy for non-regular workers	KHPS 2017
laborunion	Dummy for labor union (1 = joining labor union)	KHPS 2017
Income	Net income (ln)	KHPS 2017

Appendix Table 2: Correlations between variables

	sex	age	univ	num_family	non_regular	laborunion	Income	Time pref	risk averse	local patriot	English	no_oversea	Internet	health	happy	libeq	trust_G	trust_N	Donation
age	0.019																		
univ	0.2149	-0.0746																	
num_family	0.0085	-0.3276	-0.0122																
non_regular	-0.2689	-0.0533	-0.088	0.0298															
laborunion	0.0797	-0.2556	0.0591	0.1011	-0.0433														
Income	0.015	-0.1473	0.0936	0.3343	-0.0434	0.1145													
Time pref	0.028	0.0032	0.0042	0.0239	-0.0157	-0.0044	-0.006												
risk averse	0.0251	-0.1426	-0.0299	0.0836	0.0062	0.0355	0.0215	0.0107											
local patriot	0.0265	-0.0677	-0.0632	0.0608	-0.0226	0.0138	-0.0182	-0.0087	0.0745										
English	0.0169	-0.2473	0.2975	0.0579	-0.0084	0.0654	0.1288	0.0458	-0.0228	-0.0958									
no_oversea	0.0145	0.1236	-0.1224	-0.0264	-0.0018	-0.0024	-0.0661	-0.0146	-0.015	0.0758	-0.4028								
Internet	0.0878	-0.4835	0.1624	0.1761	0.0543	0.1425	0.2138	0.007	0.0559	-0.025	0.2387	-0.0961							
health	-0.0355	-0.1399	0.0525	0.0695	0.0805	0.049	0.106	-0.0037	0.0272	-0.0623	0.1498	-0.1009	0.1316						
happy	-0.0729	0.0344	0.0443	0.0409	-0.0088	-0.0463	0.1813	-0.045	-0.0055	-0.0558	0.1132	-0.0733	0.0409	0.3204					
libeq	0.0576	0.0051	0.1102	-0.0407	-0.0528	-0.003	0.0537	0.0061	0.0436	-0.0381	0.1007	-0.0755	0.0644	0.0784	0.0923				
trust_G	0.0277	0.1348	0.0228	-0.0554	-0.0054	-0.0522	0.0452	-0.0402	-0.077	-0.0403	0.0006	-0.0133	-0.0372	0.0724	0.1475	0.048			
trust_N	0.012	0.2134	-0.0134	-0.0206	0.0078	-0.0637	0.0319	-0.0715	-0.0407	-0.0061	-0.0085	-0.025	-0.0762	0.0583	0.1582	-0.0132	0.3164		
Donation	-0.0386	0.2277	0.0009	-0.0229	-0.0446	-0.0695	0.0609	-0.0242	-0.0678	-0.0096	-0.0223	-0.0109	-0.0952	-0.0239	0.112	-0.0168	0.0441	0.1125	