RIETI Discussion Paper Series 23-E-056

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The Research Institute of Economy, Trade and Industry
https://www.rieti.go.jp/en/

RIETI Discussion Paper Series 23-E-056
July 2023

Work-Life Conflicts of Native and Immigrant Women in Japan[1]

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Abstract

This study aims to examine work-life conflicts among married native and immigrant women in Japan. In an increasingly multicultural society like Japan, understanding the labor force participation and familial roles of different demographic groups, especially married women, could provide significant social and economic implications. Using a Bivariate probit model, the study simultaneously estimates the determinants of employment status and having children. The 2010 individual data from the Population Census, provided by the Ministry of Internal Affairs and Communications, serve as the basis for analysis. The findings reveal a negative correlation between labor force participation and having young children for both native and immigrant women. Among employed women, native mothers of young children tend to hold regular, high-skilled positions, while immigrant mothers are more likely to engage in non-regular, low-skilled jobs. It is indicated that both native and immigrant women in Japan may struggle to balance labor force participation and child-rearing responsibilities. Notably, the choice of job type and childcare balance appears to vary between these two demographic groups, with immigrant women potentially facing greater challenges in maintaining quality employment alongside childcare. These findings suggest the necessity for targeted policy and practice interventions, which could enhance workforce integration and family support for immigrant women in Japan, thereby addressing the demographic's unique work-life balance issues.

Keywords: Work-life conflicts, Female labor force participation, Having children, Natives, Immigrants
JEL classification: J15, J24, J61, Z13

[1] This study is conducted as part of the Project "Empirical studies on issues of foreign employment and technology progress in the society of labor shortage," undertaken at the Research Institute of Economy, Trade and Industry (RIETI). It utilizes the microdata of the questionnaire information based on the "Population Census," which is conducted by the Ministry of Internal Affairs and Communications (MIC). The authors are grateful for the helpful comments by Kotaro Tsuru, Arata Ito, and participants of the RIETI DP Seminar. The academic analysis of the work is supported by JSPS KAKENHI, Grant Numbers 18K12799 and 23K01432.

1. INTRODUCTION

This study investigates the work-life conflicts experienced by native and immigrant married women in Japan. With countries grappling with declining birth rates and aging populations, policies aimed at simultaneously enhancing the female labor supply and fertility rate have become urgent, such as in Japan[2]. Japan has implemented social policies to mobilize women in the workforce and to promote gender equality. However, the impacts of these policies remain limited, making it difficult for women with children to secure employment in the country. Japan's labor market is notably tough for families, exacting high opportunity costs for parents who halt their careers to raise children, promoting a traditional gender ideology, and offering few good jobs to young workers (Boling, 2008). Gender norms positioning men as providers and women as caretakers, though faded, continue to persist (Piotrowski et al., 2019; Rodríguez-Plana & Tanaka, 2021; Sato, 2022). This gendered division of labor exacerbates work-life conflict for women desiring both employment and family life.

To the best of our knowledge, there have been few academic studies on work-life conflict of immigrants in Japan. However, problems in immigrants' work and life have attracted attention in other countries. Studies have found that immigrants struggle to balance work and life in their host countries (Ojha, 2011; Rudolph et al., 2014; Ali et

[2] National Institute of Population and Social Security Research of the Ministry of Health, Labour and Welfare (2023) shows the future population projection for Japan until 2070. The total population is estimated to decrease by approximately 30 percentage points from 126.15 million in 2020 to 87 million in 2070. The percentage of foreigners in the total population is estimated to increase from 2.2% in 2020 to 10.8% in 2070, with foreigners supporting the entire society. The trend of population decline has not changed, and there is an urgent need for measures to halt the declining birth rate and maintain the vitality of society.

al. 2017; Krys et al. 2018; Robles-Saenz et al. 2021, Grzywacz et al., 2007). Work-life conflicts also contribute to the deterioration of physical and mental health outcomes among immigrants (Lin & Lin, 2021). In addition, many immigrant studies have focused on labor supply and wages (see a literature survey: Hanson 2009; Kerr & Kerr 2011; Abramitzky & Boustan 2017), and fertility (Fernández & Fogli 2006; Fernández & Fogli 2009; Blau et al. 2013; Cygan-Rehm 2014; Stichnoth & Yeter 2016; Impicciatore, Gabrielli, & Paterno 2020). As work-family conflicts among immigrants affect both immigrant female labor supply and fertility, their analysis can offer fresh insights into immigration policies.

In Japan, although the inflow of foreign workers might ameliorate labor shortage problems[3], immigrant women, even those from countries with high female labor participation and fertility rates, may struggle to balance work and family life. To investigate the work-family conflicts of Japanese native and immigrant married women, this study uses the bivariate probit model, which estimates determinants of employment status and having children simultaneously, using 2010 Population Census data from the Ministry of Internal Affairs and Communications. The model considers concurrent decisions of employment and having children, calculating the correlation of these decisions after controlling for observable decision-affecting factors. The estimated correlation is interpreted as the impact of unobservable factors, including heterogeneity.

The study uncovers a negative correlation between employment and having a child under six years old among both Japanese and immigrant married women. Among

employed women, the research explores correlations between the choice of regular versus non-regular employment and the choice of having a child under six, as well as between the choice of high-skilled labor versus low-skilled labor and the choice of having a child under six.

The results reveal a positive correlation for Japanese natives, implying an association between living with children under six and securing regular employment or high-skilled jobs. In contrast, a negative correlation is observed for immigrants, indicating an association between living with children under six and obtaining non-regular employment or low-skilled jobs. The findings suggest that married immigrant women may encounter more difficulties in balancing work and family life than native women, particularly as immigrant women with children under six are less likely to secure regular employment or high-skilled jobs. For a country to foster an environment conducive to work and life balance for both native and immigrant women, addressing these issues is imperative.

The remainder of this study proceeds as follows: Section 2 introduces the related literature, Section 3 explains the estimation method, Section 4 shows the data, Section 5 presents the estimation results, and Section 6 concludes.

2. Related Literature

Previous studies, differing from our study, have primarily examined the impact of immigrants on the work-life balance of natives (Furtado & Hock, 2008; Cortes & Tessada,

2011; Barone & Mocetti, 2011; Furtado, 2016). These studies regard immigrants as substitutes for the housework and childcare of natives. Immigrants are generally considered to reduce wages and increase employment in immigrant-intensive sectors. The presence of low-skilled immigrant labor in the childcare sector lowers childcare costs, consequently easing the tension between fertility and high-skilled employment for native women. However, if immigrants need assistance with domestic duties and childcare, who aids them?

There are only a few studies investigated work-family conflicts among immigrants, but existing literature indicates that immigrants confront challenges in their work and personal lives in host countries of the U.S. and some European countries (Ojha, 2011; Rudolph et al., 2014; Ali et al., 2017; Krys et al., 2018; Robles-Saenz et al., 2021). Particularly, immigrant women report a higher frequency of work-life conflicts than men (Grzywacz, et al., 2007).

The reasons for difficulties in balancing work and life for immigrants are economic issues related to childrearing: low wages, high opportunity costs, and problems with childcare support availability. Immigrants, especially unskilled or low-skilled ones, tend to work in lower-wage jobs, and it may be difficult for them to pay for housework and childcare services. This situation exacerbates work-life conflicts for them. The wage gap and speed of convergence between immigrants and natives vary by arrival year, immigrant generation, immigrant country of origin, and the skill level of immigrants. Literature suggests that first-generation and unskilled or low-skilled immigrants from

developing countries tend to earn lower wages (Hanson, 2009; Kerr & Kerr, 2011; Abramitzky & Boustan, 2017).

Similarly, in Japan, high-earning married women face difficulties in managing work and children. The opportunity costs for child-rearing are exceptionally high for women in Japan (Boling, 2008; Feyrer, Sacerdote, & Stern, 2008; Lee et al., 2009; Raymo et al., 2015; Yamaguchi, 2019). As Feyrer et al. (2008) mention, labor market opportunities for women in Japan are fewer than those in other high-income countries, and the participation of men in household chores in Japan is also lower. The serious gendered division of labor that remains in Japan is biased toward women in household chores (Piotrowski et al., 2019; Rodríguez-Plana & Tanaka, 2021; Sato, 2022). Many working women, particularly those in regular employment, tend to leave their jobs upon childbirth. While some return to work once their children grow, most rejoin the workforce in non-regular employment due to the high entry costs for regular employment in the labor market (Yamaguchi, 2019).

Immigrants in Japan are less likely to receive support from grandparents and other family members because of arrival restrictions. Furthermore, access to formal childcare support for families is limited in Japan because of childcare scarcity, which brings about a declining fertility rate and exacerbates work-family conflicts within the burgeoning female labor force (Kawabata, 2014; Lee & Lee, 2014; Asai, Kambayashi, & Yamaguchi, 2015; Fukai, 2017; Yamaguchi et al., 2018a). The insufficient capacity of existing childcare centers to accommodate the children of working mothers results in long

waiting lists. The failure of childcare centers to alleviate the conflict between women's work and childcare duties discourages them from child-rearing. Moreover, childcare costs, such as nursery fees, have significant negative impacts on mothers' labor participation. Childcare allowances or subsidies can effectively increase the incomes of mothers, particularly those from low-income groups (Oishi, 2002; Hagiwara, 2016).

In addition, unlike natives, immigrants have problems with language and cultural differences. Therefore, the choice of childcare support differs among immigrant characteristics, and access to childcare support is limited, especially in low-income families (Brandon, 2004; Magnuson et al., 2006; Crosnoe, 2007; Obeng 2007; Sandstrom & Chaudry, 2012; Miller et al., 2014; Ullrich et al., 2019).

In light of the above, this study considers variables related to productivity (education level, skill level, and employment status) and access to childcare support (living with grandparents, population size of residence, nationality, and years of residency in Japan) in our analysis.

3. Estimation Method

This study uses a bivariate probit model (Greene, 2008). The estimation model is as follows:

$$C^* = X_1'\beta_1 + u_1, \quad C = \begin{cases} 1 & \text{if } C^* > 0 \\ 0 & \text{if } C^* \leq 0 \end{cases}$$

$$Y^* = X_2'\beta_2 + u_2, \quad Y = \begin{cases} 1 & \text{if } Y^* > 0 \\ 0 & \text{if } Y^* \leq 0 \end{cases}$$

$$E(u_1|X_1, X_2) = E(u_2|X_1, X_2) = 0, \quad Var(u_1|X_1, X_2) = Var(u_2|X_1, X_2) = 1, \quad Cov(u_1, u_2|X_1, X_2) = \rho \tag{1}$$

In this equation, C is a dummy variable for having children under six years of age, Y is a dummy variable for employment status, C^* and Y^* are unobserved latent variables. X_1 and X_2 are vectors of independent variables, such as the continuous carriable wife's age, dummy variables for the wife's nationality, wife's and husband's final educational attainment, years living in Japan, and living prefecture. β_1 and β_2 are vectors of the parameters. u_1 and u_2 are error terms, $E(u_1)$ and $E(u_2)$ are means of error terms, $Var(u_1)$ and $Var(u_2)$ are variances of error terms, and $Cov(u_1, u_2)$ are covariances of error terms. The error terms are jointly normally distributed with means of zero, variances of one, and correlations of ρ. Here, ρ, which is the covariance between the error terms for having children and employment decisions, describes the relationship between having children and employment. If this value is negative, children and employment are the alternatives. The model collapses into two separate probit models for C and Y if $\rho = 0$.

The bivariate probit model offers two key advantages for our analysis. Firstly, it allows us to observe the correlation between having children and employment status. Secondly, it enables us to estimate two probit models and determine the influence of the wife's nationality on both childbearing and employment decisions. Using this method, we clarify the negative relationship between having children and employment, and the effects

of nationality and length of stay in Japan on female decisions, while controlling for observed factors.

4. DATA

4.1.Descriptive Statistics

This study uses individual data from the 2010 Population Census provided by the Ministry of Internal Affairs and Communications (MIC). This survey pertained to the entire Japanese population. The 2010 Census included information on educational level, age, family structure, working status, and nationality. The survey covered 51,950,504 households and 128,057,352 people (48.7% male), of whom approximately 125,359,000 were Japanese citizens and 1,648,000 were foreign residents of Japan. This study leveraged the complete dataset of immigrant data and a 10% random sample of native data. The female samples consisted of married women aged 20–49 years, whose spouses' data were merged with their own. We excluded individuals currently in school, females with unemployed or non-working spouses, Japanese residents who did not live in Japan five years prior to the 2010 census, and foreign trainees participating in the Japanese technical intern trainee program.

Table 1 depicts the descriptive statistics. In the estimation, we use three types of employment dummy variables: 1) a labor force participation dummy variable, where 1 signifies working females, and 0 indicates non-working females (unemployed individuals are excluded from the analysis data); 2) a regular employee dummy variable, where 1

indicates females working in regular employment (including executives), and 0 signifies females working in non-regular employment (unemployed individuals are excluded from the analysis data); 3) a high-skilled labor dummy variable, where 1 signifies females working in high-skilled labor (occupations in management, professional, or technical fields), and 0 indicates females working in low-skilled labor (occupations not classified as management, professional, or technical).

The estimation using the labor force participation dummy variables confirms whether females with children under the age of six are more likely to be out of the labor force. This estimation focuses on the attitudes of females who quit their jobs if they had young children. On the contrary, the estimation using the regular employee dummy variable or the high-skilled labor dummy variable assessed whether female workers with children under six turn to be regular or high-skilled workers. This estimation focuses on whether women decide to work more or less actively when they have young children.

In Table 1's estimation column for labor force participation and having children, the percentage of labor force participation is 60.7% for natives and 51.4% for immigrants; the percentage of regular employment is 40.1% for natives and 25.4% for immigrants; the percentage of high-skilled labor is 20.2% for natives and 8.6% for immigrants; and the percentage of children under six years old is 27.3% for natives and 33.7% for immigrants. The percentages of labor force participation, regular employment, and high-skilled labor for natives were higher than those for immigrants. In contrast, the percentage of children under six years of age among natives is lower than among immigrants.

Independent variables include: wife's nationality dummy variables for Japan, Korea, China, the Philippines, Thailand, Indonesia, Vietnam, the United Kingdom (UK), the United States (US), Brazil, Peru, and otherwise (the reference group is Japan in the estimation with all samples, and Korea in the analysis with only the immigrant sample), living in Japan for under five years dummy variables (the reference group is living in Japan more than five years), wife's age dummy variables for ages 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, and 45 to 49 (the reference group is aged 20 to 24), wife's and husband's final educational attainment dummy variables (high schools, technical colleges, and junior colleges, and universities and graduate schools with the reference group being elementary and junior high schools); husband's employment status dummy variables (regular employee, non-regular employee, executive officer with regular employee as the reference group; self-employed/employee and non-working husbands were excluded from the sample); husband's high-skilled dummy variable (1 if the husband's occupation is management, professional, or technical, and 0 if not); living with grandparents dummy variable (1 if living with grandparents, 0 otherwise); population size of residence; living in a public house dummy variable (1 if living in a public house, 0 otherwise); a home ownership dummy variable (1 if the household owns a home, 0 otherwise); and a prefecture dummy variable (reference group is Okinawa). We utilize these variables as control variables in our estimation.

[Insert Table 1]

4.2. Female Labor Supply by of Natives and Immigrants

Figure 1 shows the changes in female labor force participation rate(calculated as working/(working + non-working)), regular employment rate(calculated as regular employment/(regular employment + non-regular employment)), and high-skilled labor rate (calculated as high-skilled labor/(high-skilled labor + low-skilled labor)), for women aged 20 to 64 years, divided by natives and immigrants from different countries. The figure describes the cases of Japanese natives, all immigrants, and immigrants from Korea, China, Southeast Asia (Philippines, Thailand, Indonesia, and Vietnam), South America (Brazil and Peru), Western countries, and others (the UK, US, and Others).

In the figure portraying labor force participation rate of Japanese natives, two prominent peaks emerge: one in the 20s and the second in the 40s, thus presenting an M-shaped curve, characteristic of Japanese natives. The trough in this curve, occurring in the early 30s, marks the age when natives often marry and have children. This pattern is also evident in countries where work-life balance presents challenges. The swing in labor supply of Japanese natives is substantial, ranging from 30% to 70%. However, labor force participation rate changes among immigrants are more modest. The figure representing labor supply among immigrants also exhibits two peaks, but these are less pronounced than those in Japan.

Labor force participation rate of immigrants from Korea mirrors the pattern seen among immigrants, showcasing the M-shaped curve with two peaks at the ages of 20 and

40, and a trough in the 30s. However, the second peak, at the age of 40, lies between 50% and 60%, lower than in Japan.

Labor participation rate of immigrants from China remains steady, hovering between 50% and 60% until the age of 50, then declines. The rate of immigrants from Southeast Asia progressively rises from 40% to 70% until the age of 50, then dips. For immigrants from South America, the rate remains high, at 70% to 80% until the age of 50, before falling. For immigrants from Western countries, the rate stays between 60% and 70% until the age of 50, then decreases. Although labor force participation in both Japanese natives and immigrants diminishes after the age of 50, the patterns before this age differ by nationality.

In terms of regular employment rate of Japanese natives, a peak is visible in the 20s, followed by a decline in the 30s and a modest rise in the 40s. The 40s see a recovery but do not match the peak in the 20s. Specifically, while the peak in the 20s reaches around 50%, the figure in the 40s is approximately 40%. The trend among immigrants follows a similar pattern until the 40s, when a notable increase occurs. This uptick also appears in the figure for immigrants from Western countries.

The statistics for regular employment of immigrants from Korea and China reveal a peak in the 20s, with Korea marginally exceeding China – the former has approximately 40%, and the latter around 30%. The figures for regular employment of immigrants from Southeast Asia and South America maintain consistently low levels, at roughly 20%, although Southeast Asia falls slightly below South America.

For Japanese natives, the proportion of high-skilled labor displays a peak in the 20s, followed by a consistent decline. The percentage of high-skilled laborers in their 20s is about 25%. However, the corresponding figure for immigrants remains fairly constant at around 10%, without distinct peaks. This pattern is also observed for immigrants from China, although a minor peak appears in the 20s. For immigrants from Korea, the percentage of high-skilled labor peaks in the 20s and 30s before a steady decline. The percentages in Korea's 20s to 30s hover around 20%. Immigrants from Southeast Asia and South America consistently show a low percentage of high-skilled labor, both less than 10%. However, the figure for immigrants from Western countries reveals a steady upward trend.

In other words, in terms of regular employment and high-skilled labor, immigrants from Korea and China show similar patterns to Japanese natives. In their 20s, Japanese natives and immigrants from Korea often work as regular employees or high-skilled laborers, but this tendency gradually declines as they age. Immigrants from Southeast Asia, South America, and Western countries display different patterns. Immigrants from Southeast Asia and South America are less likely to work as regular employees or high-skilled laborers compared to those from other countries. Conversely, immigrants from Western countries are more likely to be regular employees or high-skilled laborers than immigrants from other regions.

[Insert Figure 1]

5. Estimation Results

5.1. Correlation Between Labor Supply and Having Children Under Six Years Old

Table 2 shows the results of estimating the bivariate probit model in which the dependent variables are labor force participation and having children under six years old. The outcomes for the combined sample of natives and immigrants are displayed in Columns 1 and 2, whereas those for immigrants and natives individually are illustrated in Columns 3 and 4, and 5 and 6, respectively.

First, for each estimation result of the bivariate probit model, rho is significantly negative: -0.133 for the combined sample, -0.0778 for immigrants, and -0.144 for natives, all at a 1% significance level. These negative correlations suggest that managing both labor participation and raising young children is challenging for women, regardless of whether they are native or immigrant. Women may choose to leave their employment upon having young children or may opt for fewer childbirths if they are part of the labor force.

Second, the dummies for nationality are significant, as shown in Table 1. Regarding the effect of a woman's nationality on labor force participation (Column 1), a significant negative impact is observed in immigrants from Korea, China, the Philippines, Thailand, Indonesia, the US, and others. The effect of the UK is also negative, but insignificant. However, immigrants from Vietnam, Brazil, and Peru have a significant positive effect on labor supply. Compared to natives, immigrants from Vietnam, Brazil, and Peru are

more likely to participate in the labor force, while immigrants from Korea, China, the Philippines, Thailand, Indonesia, the US, and others are less likely to participate. A noteworthy observation from our additional estimations is that immigrant women who have resided in Japan for five years or longer are generally more likely to participate in the labor force than native women. Detailed results are available upon request.

As for the impact of a woman's nationality on having children (Column 2), a significant negative effect is identified for immigrants from Korea and the US. Conversely, a significant positive effect is seen for immigrants from China, the Philippines, Thailand, Indonesia, Vietnam, Brazil, Peru, and others. These women are more likely to have children compared to natives, whereas those from Korea and the US are less likely to do so.

In addition, as shown in Column 3's outcomes, which exclusively use immigrant samples, immigrants from China, the Philippines, Indonesia, Vietnam, the UK, the US, Brazil, Peru, and others are more likely to participate in the labor force than immigrants from Korea, except for those from Thailand. Additionally, the substantial impact of a woman's nationality on having children is demonstrated in Column 4; immigrants from China, the Philippines, Indonesia, Vietnam, Brazil, Peru, and others are more likely to have children than those from Korea, except for the US. It is important to consider that for immigrants who have lived in Japan for less than six years, children under six may have been born abroad, thereby making their fertility decisions unaffected by Japanese living conditions or social environment.

Finally, estimates indicate that the duration of immigration, specifically whether they have resided in Japan for less than five years, has a significant negative impact on labor force participation and childbearing, as shown in Columns 3 and 4, respectively. This indicates that immigrant women in the early stages of migration may be less likely to participate in the labor force or have children than those who have lived in Japan for five years or more.

[Insert Table 2]

5.2.Correlation Between Working as Regular Workers and Having Children Under Six Years Old

Table 3 shows the results of estimating the bivariate probit model, including the determination equations for regular employment and parenting children under six years old, respectively. Columns 7 and 8 show the results for the total sample of native and immigrant women; Columns 9 and 10 show the results for immigrants; and Columns 11 and 12 show the results for natives.

Initially, the native sample results in Table 3 reveal a rho of 0.0744, which denotes a significant positive correlation between regular employment and parenting children under six years old. This association suggests that for natives, regular employment and parenting young children are positively correlated. Conversely, for immigrants, the rho dips to a significantly negative estimate of -0.0160, implying a negative association

between regular employment and parenting young children. These results underscore a stark contrast: natives with small children are more likely to be regular employees, while immigrants with small children tend to be irregular employees.

Second, Table 3 shows the different estimates of the nationality dummy variables. In the estimation result of regular employment in Column 7, which uses all samples, a significant negative effect is seen for immigrants from Korea, China, the Philippines, Thailand, Indonesia, Vietnam, Brazil, Peru, and other countries. By contrast, the estimate for immigrants from the UK indicates a significantly positive effect on regular employment. The effect of US nationality is also positive but insignificant. Compared to natives, immigrants from the UK (and perhaps the US) are more likely to work regularly. Immigrants from Korea, China, the Philippines, Thailand, Indonesia, Vietnam, Brazil, and Peru face lower probabilities of obtaining regular jobs.

Further, regarding the effect of women's nationality on having children in Column 8, a significant negative effect is observed for immigrants from the US. The effect of Korea is also negative, but insignificant. In contrast, a significant positive effect is observed for immigrants from China, the Philippines, Thailand, Indonesia, Vietnam, Brazil, Peru, and other countries. The effect of UK nationality is also positive, but insignificant. Compared to natives, immigrants from China, the Philippines, Thailand, Indonesia, Vietnam, Brazil, and Peru are more inclined to have children, while those from the US are less likely.

Moreover, the estimated result of the effect of nationality on labor supply in Column 9, which exclusively uses immigrant samples, indicates that immigrants from the UK, US,

and Brazil are more likely to work as regular workers, while immigrants from the Philippines, Thailand, Indonesia, Vietnam, and other countries are less likely to find a regular job. Further, the significant effect of a wife's nationality on having children in Column 10 indicates that compared to immigrants from Korea, immigrants from China, the Philippines, Thailand, Indonesia, Vietnam, Brazil, Peru, and other countries are more likely to have children.

Finally, in Columns 7, 8, 9, and 10, the estimation result of the migration period, which is the variable for living in Japan for less than five years, is significantly negative in the equations for regular employment and having children. Immigrants who have lived in Japan for less than five years seem less likely to find regular employment or have children than those who have lived there for five years or more.

[Insert Table 3]

5.3.Correlation Between Working in High-Skilled Labor and Having Children Under Six Years Old

Table 4 shows the results of the bivariate probit model, which includes the determination equations for high-skilled jobs and having children under six years of age. Columns 13 and 14 show the results for the total sample of natives and immigrants, Columns 15 and 16 show the results for immigrants, and Columns 17 and 18 show the results for natives.

Table 4 presents similar results to Table 3. In the results using native samples, the rho

is 0.0110, indicating a positive association between doing high-skilled jobs and having young children for natives. However, according to the result using the immigrant sample, the rho is -0.0244, reflecting a negative association between doing high-skilled jobs and having young children. It seems that natives with young children tend to be high-skilled workers; in contrast, immigrants with young children tend to be low-skilled workers.

Furthermore, for the effect of nationality on high-skilled jobs in Column 13, a significant negative effect is observed for immigrants from Korea, China, the Philippines, Thailand, Indonesia, Vietnam, Brazil, Peru, and others. However, immigrants from the UK exhibit a significant positive effect. The US influence is also positive, but insignificant. Compared to natives, immigrants from the UK are more likely to be high-skilled workers, whereas immigrants from Korea, China, the Philippines, Thailand, Indonesia, Vietnam, Brazil, and Peru are less likely to secure such roles. Moreover, in the results of high-skilled jobs in Column 15, which exclusively uses immigrant samples, immigrants from the UK, the US, and Brazil are more likely to be high-skilled workers, but immigrants from the Philippines, Thailand, Indonesia, and Vietnam are less likely to find high-skilled jobs.

Finally, the significantly negative estimate of living in Japan for less than five years in Columns 15 and 16 indicates that immigrants in their initial years in Japan are less likely to find a high-skilled job or have children compared to those who have lived in Japan for five years or more.

[Insert Table 4]

6. CONCLUSIONS

This study investigates the work-life conflicts of Japanese native and immigrant married women. The analysis uses the bivariate probit model, which can simultaneously estimate two equations, one for choice of employment and the other for having children under six years of age, using 2010 individual data from the Population Census provided by the Ministry of Internal Affairs and Communications. The results confirm a negative correlation between labor supply and having a child under six for both Japanese and immigrant married women. Among employed women specifically, the study examines correlations between the choice of regular versus non-regular employment and having a child under six, and between the choice of high-skilled labor versus low-skilled labor and having a child under six. For Japanese natives, the results show a positive correlation—those with children under six years of age are likely to be employed in regular or high-skilled positions. However, a negative correlation was found among immigrants, indicating those with children under six often work in non-regular or low-skilled roles. These findings suggest that immigrant married women experience greater challenges in maintaining work-life balance compared to Japanese natives, particularly as immigrant married women with children under six are less likely to secure regular or high-skilled employment.

The next step in this line of research involves an analysis that focuses on intra-

family negotiations among couples, factoring in race (Molina, 2021). Women's work-life balance decisions are not solely influenced by their individual factors; their spouses' characteristics also impact their decisions to work and have children. While this study considers the influence of husbands by controlling for their economic factors, it's critical to note that cultural effects of husbands also play a crucial role in balancing work and life for wives. Addressing these cultural effects constitutes a future direction for this study.

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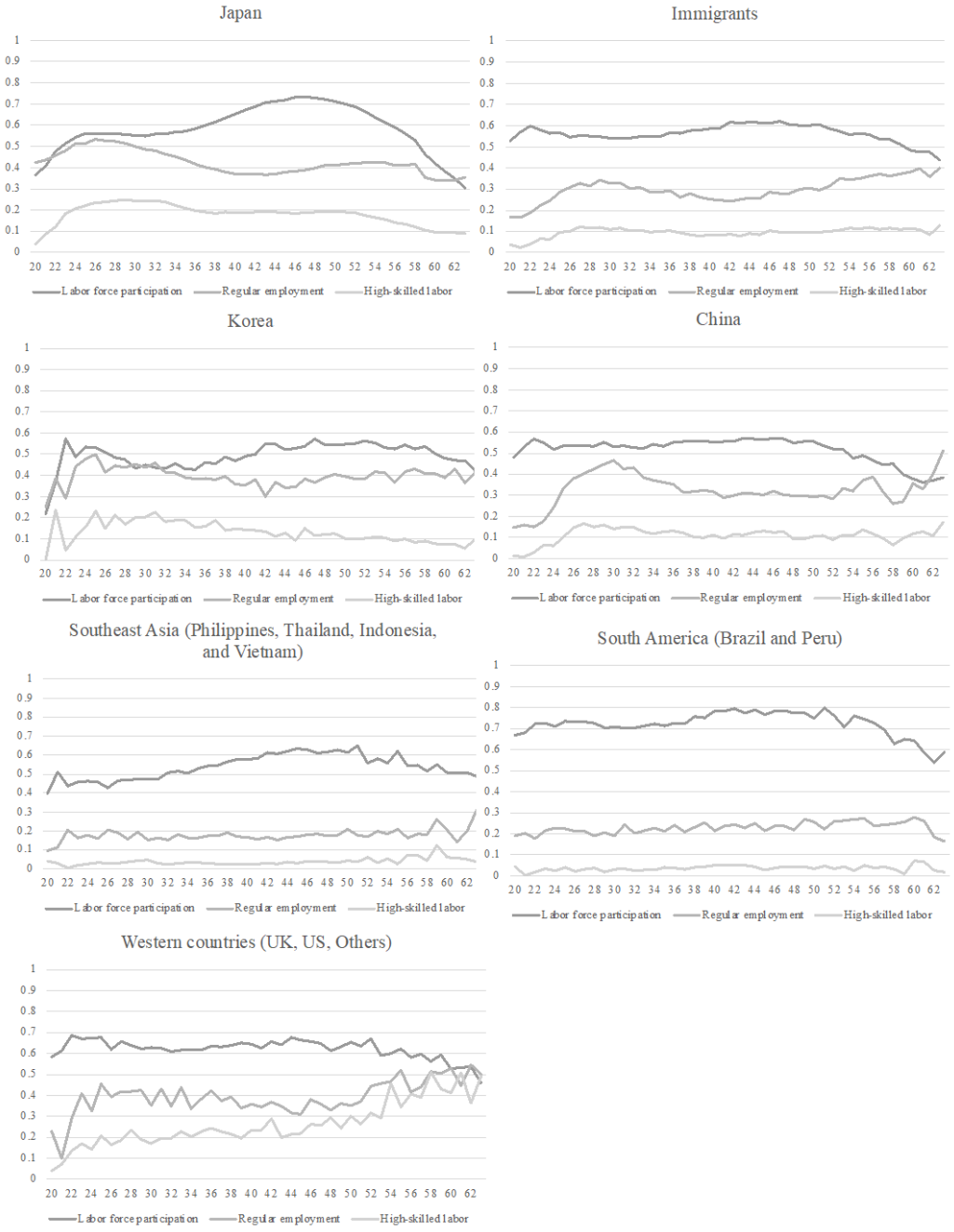
FIGURE 1. THE CHANGE IN LABOR FORCE PARTICIPATION, REGULAR EMPLOYEE, AND HIGH-SKILLED LABOR BY AGE



Note1: The independent variables are lagged variables.
Data source: 2010 Population Census
Note 2: Labor force participation=working/(working+non-working), regular employment=regular employment/(regular employment+non-regular employment), and high-skilled labor=high-skilled labor/(high-skilled labor+low-skilled labor)

Table 1. *Descriptive statistics*

Variables	Estimation for labor force participation and having children			Estimation for regular employment and having children			Estimation for high-skilled labor and having children		
	All sample	Immigrants	Natives	All sample	Immigrants	Natives	All sample	Immigrants	Natives
Labor force participation	0.589	0.514	0.607	1.000	1.000	1.000	1.000	1.000	1.000
Regular employment	0.381	0.254	0.401	0.381	0.254	0.401	0.381	0.254	0.401
High-skilled labor	0.184	0.086	0.202	0.194	0.099	0.208	0.184	0.086	0.202
Having children under six years old	0.285	0.337	0.273	0.250	0.321	0.239	0.251	0.316	0.239
Wife's nationaity:									
Japan	0.815	0.000	1.000	0.862	0.000	1.000	0.848	0.000	1.000
Korea	0.029	0.157	0.000	0.019	0.138	0.000	0.021	0.135	0.000
China	0.060	0.323	0.000	0.042	0.302	0.000	0.046	0.301	0.000
Philippines	0.042	0.225	0.000	0.034	0.245	0.000	0.035	0.230	0.000
Thailand	0.008	0.041	0.000	0.004	0.031	0.000	0.005	0.030	0.000
Indonesia	0.002	0.010	0.000	0.001	0.010	0.000	0.001	0.009	0.000
Vietnam	0.003	0.014	0.000	0.002	0.017	0.000	0.002	0.016	0.000
UK	0.000	0.002	0.000	0.000	0.003	0.000	0.000	0.003	0.000
US	0.002	0.009	0.000	0.001	0.009	0.000	0.001	0.009	0.000
Brazil	0.019	0.103	0.000	0.021	0.155	0.000	0.022	0.147	0.000
Peru	0.004	0.023	0.000	0.005	0.034	0.000	0.005	0.031	0.000
Others	0.017	0.093	0.000	0.008	0.058	0.000	0.013	0.088	0.000
Living in Japan for under five years	0.044	0.210	0.000	0.027	0.167	0.000	0.027	0.156	0.000
Wife's age:									
20-24	0.022	0.034	0.020	0.015	0.027	0.013	0.016	0.032	0.013
25-29	0.108	0.154	0.097	0.089	0.130	0.083	0.093	0.141	0.085
30-34	0.194	0.220	0.188	0.168	0.199	0.163	0.171	0.203	0.164
35-39	0.246	0.224	0.250	0.232	0.224	0.233	0.232	0.220	0.233
40-44	0.225	0.213	0.227	0.246	0.239	0.247	0.243	0.230	0.246
45-49	0.206	0.155	0.218	0.250	0.182	0.262	0.245	0.174	0.258
Wife's education:									
Junior high school or high school	0.543	0.660	0.518	0.532	0.640	0.517	0.551	0.680	0.529
Junior college or technical college	0.282	0.106	0.322	0.292	0.108	0.322	0.280	0.096	0.313
University (undergraduate or higher)	0.175	0.234	0.160	0.176	0.253	0.162	0.169	0.224	0.157
Husband's age	40.903	43.299	40.370	41.584	43.495	41.295	41.480	43.039	41.217
Husband's education:									
Junior high school or high school	0.540	0.633	0.521	0.558	0.644	0.545	0.575	0.683	0.557
Junior college or technical college	0.110	0.073	0.118	0.116	0.078	0.122	0.111	0.069	0.119
University (undergraduate or higher)	0.350	0.294	0.360	0.327	0.278	0.333	0.314	0.247	0.324
High-skilled labor husband	0.187	0.169	0.190	0.182	0.150	0.186	0.175	0.134	0.181
Husband's employment type:									
Regular employee	0.861	0.721	0.894	0.852	0.647	0.885	0.857	0.688	0.888
Non-regular employee	0.076	0.195	0.048	0.086	0.276	0.054	0.083	0.243	0.053
Executive officer	0.063	0.083	0.058	0.063	0.077	0.061	0.060	0.069	0.059
Population size of residence	9.797	11.482	9.399	9.337	11.064	9.050	9.470	11.326	9.124
Living with grandparents	0.087	0.071	0.091	0.111	0.083	0.116	0.107	0.073	0.113
Living in a public house	0.052	0.086	0.045	0.052	0.099	0.045	0.053	0.098	0.045
Owning house	0.579	0.396	0.623	0.637	0.413	0.674	0.625	0.390	0.669

Data source: 2010 Population Census

Note: The sample includes men and women aged between 20 and 49.

Table 1. *Descriptive statistics (continued)*

Variables	Estimation for labor force participation and having children			Estimation for regular employment and having children			Estimation for high-skilled labor and having children		
	All sample	Immigrants	Natives	All sample	Immigrants	Natives	All sample	Immigrants	Natives
Prefecture:									
Hokkaido	0.096	0.015	0.114	0.099	0.016	0.112	0.096	0.015	0.112
Aomori	0.008	0.002	0.010	0.010	0.002	0.011	0.009	0.001	0.011
Iwate	0.008	0.004	0.009	0.011	0.005	0.011	0.010	0.004	0.011
Miyagi	0.015	0.008	0.016	0.015	0.007	0.017	0.015	0.006	0.016
Akita	0.005	0.002	0.006	0.006	0.003	0.007	0.006	0.002	0.007
Yamagata	0.007	0.005	0.008	0.010	0.006	0.010	0.009	0.005	0.010
Fukushima	0.013	0.009	0.014	0.016	0.009	0.017	0.015	0.008	0.016
Ibaraki	0.023	0.030	0.021	0.023	0.031	0.021	0.023	0.029	0.021
Tochigi	0.016	0.020	0.015	0.016	0.021	0.016	0.016	0.019	0.016
Gunma	0.016	0.025	0.014	0.017	0.030	0.015	0.017	0.028	0.015
Saitama	0.063	0.078	0.059	0.058	0.075	0.055	0.059	0.074	0.056
Chiba	0.047	0.067	0.043	0.043	0.063	0.040	0.043	0.059	0.040
Tokyo	0.090	0.168	0.071	0.070	0.124	0.060	0.082	0.166	0.067
Kanagawa	0.069	0.093	0.063	0.061	0.088	0.057	0.060	0.083	0.056
Niigata	0.015	0.009	0.016	0.019	0.011	0.020	0.018	0.010	0.020
Toyama	0.007	0.007	0.006	0.008	0.010	0.008	0.008	0.009	0.008
Ishikawa	0.008	0.005	0.009	0.010	0.006	0.011	0.010	0.006	0.011
Fukui	0.006	0.006	0.005	0.007	0.007	0.007	0.007	0.006	0.007
Yamanashi	0.008	0.009	0.008	0.009	0.010	0.009	0.009	0.009	0.009
Nagano	0.021	0.025	0.020	0.023	0.029	0.022	0.023	0.027	0.022
Gifu	0.017	0.023	0.016	0.019	0.028	0.018	0.019	0.028	0.018
Shizuoka	0.032	0.048	0.028	0.034	0.061	0.030	0.033	0.056	0.029
Aichi	0.067	0.106	0.059	0.063	0.111	0.056	0.065	0.116	0.056
Mie	0.016	0.020	0.015	0.017	0.025	0.016	0.017	0.024	0.016
Shiga	0.012	0.013	0.012	0.012	0.016	0.012	0.012	0.015	0.012
Kyoto	0.019	0.014	0.020	0.018	0.013	0.019	0.019	0.013	0.020
Osaka	0.066	0.063	0.067	0.057	0.058	0.057	0.058	0.058	0.058
Hyogo	0.037	0.034	0.037	0.034	0.033	0.034	0.034	0.031	0.034
Nara	0.011	0.004	0.012	0.010	0.004	0.011	0.010	0.004	0.011
Wakayama	0.007	0.003	0.008	0.008	0.002	0.009	0.008	0.002	0.009
Tottori	0.004	0.002	0.005	0.006	0.002	0.006	0.006	0.002	0.006
Shimane	0.005	0.003	0.006	0.007	0.005	0.007	0.007	0.004	0.007
Okayama	0.013	0.008	0.014	0.014	0.009	0.015	0.014	0.008	0.015
Hiroshima	0.022	0.017	0.023	0.023	0.020	0.023	0.022	0.018	0.023
Yamaguchi	0.009	0.004	0.010	0.010	0.005	0.011	0.010	0.004	0.011
Tokushima	0.006	0.002	0.006	0.007	0.002	0.007	0.006	0.002	0.007
Kagawa	0.007	0.004	0.007	0.008	0.005	0.008	0.007	0.004	0.008
Ehime	0.009	0.003	0.010	0.009	0.003	0.010	0.009	0.003	0.010
Kochi	0.006	0.002	0.007	0.007	0.002	0.008	0.007	0.002	0.008
Fukuoka	0.034	0.018	0.038	0.033	0.016	0.036	0.033	0.016	0.036
Saga	0.005	0.002	0.006	0.006	0.002	0.007	0.006	0.002	0.007
Nagasaki	0.008	0.002	0.009	0.009	0.002	0.010	0.008	0.002	0.009
Kumamoto	0.011	0.005	0.013	0.014	0.005	0.015	0.013	0.005	0.014
Oita	0.007	0.003	0.008	0.008	0.004	0.008	0.007	0.003	0.008
Miyazaki	0.007	0.002	0.009	0.009	0.002	0.010	0.009	0.002	0.010
Kagoshima	0.012	0.004	0.014	0.014	0.005	0.016	0.014	0.004	0.015
Okinawa	0.011	0.004	0.013	0.012	0.004	0.013	0.012	0.004	0.013
Sample size	1,223,815	226,448	990,333	658,540	90,612	565,416	691,080	105,359	582,736

Data source: 2010 Population Census

Note: The sample includes men and women aged between 20 and 49.

Table 2. *Results for the correlation between labor supply and having children under six years old*

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	All sample		Immigrants		Natives	
	Labor force participation	Having children	Labor force participation	Having children	Labor force participation	Having children
Wife's nationaity:						
Ref. Japan (※Reference group is Korea in immigrant sample)						
Korea	-0.348***	-0.0154**				
	(0.00713)	(0.00747)				
China	-0.135***	0.319***	0.211***	0.348***		
	(0.00546)	(0.00550)	(0.00857)	(0.00895)		
Philippines	-0.173***	0.148***	0.207***	0.170***		
	(0.00642)	(0.00657)	(0.00958)	(0.01000)		
Thailand	-0.538***	0.181***	-0.127***	0.188***		
	(0.0139)	(0.0140)	(0.0155)	(0.0159)		
Indonesia	-0.264***	0.177***	0.0823***	0.218***		
	(0.0264)	(0.0269)	(0.0270)	(0.0279)		
Vietnam	0.185***	0.0982***	0.468***	0.164***		
	(0.0233)	(0.0236)	(0.0241)	(0.0247)		
UK	-0.0711	-0.0322	0.285***	-0.000194		
	(0.0561)	(0.0581)	(0.0554)	(0.0581)		
US	-0.0973***	-0.191***	0.269***	-0.142***		
	(0.0300)	(0.0322)	(0.0303)	(0.0328)		
Brazil	0.287***	0.176***	0.567***	0.249***		
	(0.00977)	(0.00929)	(0.0127)	(0.0127)		
Peru	0.158***	0.0881***	0.476***	0.136***		
	(0.0189)	(0.0185)	(0.0204)	(0.0204)		
Others	-0.0962***	0.0804***	0.196***	0.152***		
	(0.00923)	(0.00949)	(0.0114)	(0.0119)		
Living in Japan for under five years	-0.276***	-0.148***	-0.321***	-0.115***		
	(0.00633)	(0.00655)	(0.00706)	(0.00728)		

Note 1: ***, **, and *denote significance at the 1 %, 5%, and 10% levels, respectively.
Note 2: Coefficients are shown in the upper rows and robust standard errors are shown in parentheses.
Note 3: The reference group for wives' nationalities in Columns 1 and 2 is Japan, and those in Columns 3 and 4 are Korea.

Table 2. *Results for the correlation between labor supply and having children under six years old (continued)*

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	All sample		Immigrants		Natives	
	Labor force participation	Having children	Labor force participation	Having children	Labor force participation	Having children
Wife's age:						
Ref. 20-24						
25-29	0.236***	-0.188***	0.0667***	0.0349**	0.290***	-0.270***
	(0.00871)	(0.00865)	(0.0164)	(0.0168)	(0.0103)	(0.0101)
30-34	0.226***	-0.241***	0.0771***	0.107***	0.266***	-0.366***
	(0.00855)	(0.00850)	(0.0163)	(0.0166)	(0.0101)	(0.00999)
35-39	0.308***	-0.422***	0.165***	-0.00596	0.338***	-0.558***
	(0.00875)	(0.00875)	(0.0166)	(0.0170)	(0.0104)	(0.0104)
40-44	0.522***	-0.462***	0.301***	-0.0380**	0.553***	-0.594***
	(0.00921)	(0.00923)	(0.0172)	(0.0175)	(0.0111)	(0.0111)
45-49	0.675***	-0.273***	0.388***	-0.0136	0.692***	-0.362***
	(0.00982)	(0.00983)	(0.0181)	(0.0185)	(0.0120)	(0.0120)
Wife's education:						
Ref. Junior high school or high school						
Junior college or technical college	0.0343***	0.0395***	-0.0224**	0.0614***	0.0505***	0.0375***
	(0.00296)	(0.00310)	(0.00952)	(0.00969)	(0.00316)	(0.00331)
University (undergraduate or higher)	0.185***	0.0916***	0.0946***	0.0841***	0.222***	0.0886***
	(0.00378)	(0.00387)	(0.00784)	(0.00793)	(0.00435)	(0.00448)
Husband's age	-0.00420***	-3.03e-05	-0.00914***	0.000741**	-0.000337	-0.000807**
	(0.000231)	(0.000239)	(0.000365)	(0.000368)	(0.000305)	(0.000321)
Husband's education:						
Ref. Junior high school or high school						
Junior college or technical college	-0.0684***	0.0331***	-0.0943***	0.0208*	-0.0635***	0.0335***
	(0.00403)	(0.00418)	(0.0110)	(0.0112)	(0.00436)	(0.00454)
University (undergraduate or higher)	-0.266***	0.0327***	-0.209***	0.0352***	-0.278***	0.0312***
	(0.00307)	(0.00321)	(0.00765)	(0.00779)	(0.00337)	(0.00355)
High-skilled labor husband	-0.0429***	-0.00528	-0.121***	0.0173**	-0.0382***	-0.00820**
	(0.00324)	(0.00338)	(0.00823)	(0.00837)	(0.00356)	(0.00373)
Husband's employment type:						
Ref. Regular employee						
Non-regular employee	0.262***	0.0297***	0.272***	-0.0137*	0.235***	0.0638***
	(0.00484)	(0.00482)	(0.00750)	(0.00753)	(0.00637)	(0.00632)
Executive officer	-0.0563***	-0.0395***	-0.0733***	-0.0511***	-0.0402***	-0.0407***
	(0.00490)	(0.00518)	(0.0103)	(0.0106)	(0.00564)	(0.00599)
Population size of residence	-0.0128***	0.00405***	-0.00502***	0.00175**	-0.0143***	0.00419***
	(0.000338)	(0.000351)	(0.000850)	(0.000862)	(0.000372)	(0.000387)
Living with grandparents	0.178***	0.0204***	0.0630***	0.0619***	0.194***	0.00996**
	(0.00450)	(0.00454)	(0.0110)	(0.0111)	(0.00501)	(0.00502)
Living in a public house	0.0389***	-0.0726***	-0.00608	0.0675***	0.0475***	-0.138***
	(0.00561)	(0.00575)	(0.0105)	(0.0104)	(0.00664)	(0.00702)
Owning house	0.145***	-0.118***	-0.000446	0.0121*	0.176***	-0.146***
	(0.00273)	(0.00284)	(0.00622)	(0.00635)	(0.00307)	(0.00320)
Prefecture	YES					
Constant	0.186***	-0.413***	0.145***	-0.850***	0.000939	-0.264***
	(0.0152)	(0.0157)	(0.0499)	(0.0521)	(0.0171)	(0.0177)
Rho	-0.133***		-0.0778***		-0.144***	
	(0.00156)		(0.00350)		(0.00175)	
Observations	1,223,815		226,448		990,333	
Log likelihood	-1.508e+06		-291733		-1.203e+06	

Note 1: ***, **, and *denote significance at the 1 %, 5%, and 10% levels, respectively.
Note 2: Coefficients are shown in the upper rows and robust standard errors are shown in parentheses.

Table 3. *Results for the correlation between working as regular employees and having children under six years old*

Variables	(7)	(8)	(9)	(10)	(11)	(12)
	All sample		Immigrants		Natives	
	Regular employment	Having children	Regular employment	Having children	Regular employment	Having children
Wife's nationality:						
Ref. Japan (※Reference group is Korea in immigrant sample)						
Korea	-0.160***	-0.0159				
	(0.0125)	(0.0128)				
China	-0.217***	0.452***	0.0118	0.483***		
	(0.00908)	(0.00864)	(0.0154)	(0.0155)		
Philippines	-0.551***	0.184***	-0.349***	0.201***		
	(0.0115)	(0.00988)	(0.0175)	(0.0168)		
Thailand	-0.519***	0.229***	-0.357***	0.235***		
	(0.0305)	(0.0251)	(0.0330)	(0.0286)		
Indonesia	-0.574***	0.201***	-0.334***	0.243***		
	(0.0522)	(0.0443)	(0.0528)	(0.0466)		
Vietnam	-0.351***	0.157***	-0.166***	0.210***		
	(0.0400)	(0.0348)	(0.0414)	(0.0376)		
UK	0.146*	0.0155	0.459***	0.0750		
	(0.0845)	(0.0885)	(0.0851)	(0.0893)		
US	0.0705	-0.157***	0.384***	-0.0734		
	(0.0468)	(0.0520)	(0.0489)	(0.0538)		
Brazil	-0.133***	0.283***	0.103***	0.342***		
	(0.0136)	(0.0123)	(0.0203)	(0.0193)		
Peru	-0.211***	0.161***	0.0466	0.196***		
	(0.0276)	(0.0245)	(0.0307)	(0.0287)		
Others	-0.315***	0.128***	-0.0633***	0.183***		
	(0.0198)	(0.0190)	(0.0232)	(0.0230)		
Living in Japan for under five years	-0.265***	-0.221***	-0.191***	-0.208***		
	(0.0121)	(0.0115)	(0.0140)	(0.0129)		

Note 1: ***, **, and *denote significance at the 1 %, 5%, and 10% levels, respectively.
Note 2: Coefficients are shown in the upper rows and robust standard errors are shown in parentheses.
Note 3: The reference group for the wife's nationality in Columns 7 and 8 is Japan, and that in Columns 9 and 10 is Korea.

Table 3. *Results for the correlation between working as regular employees and having children under six years old (continued)*

Variables	(7)	(8)	(9)	(10)	(11)	(12)
	All sample		Immigrants		Natives	
	Regular employment	Having children	Regular employment	Having children	Regular employment	Having children
Wife's age:						
Ref. 20-24						
25-29	0.0586***	-0.106***	0.164***	0.0855***	0.0302*	-0.171***
	(0.0143)	(0.0148)	(0.0327)	(0.0310)	(0.0163)	(0.0168)
30-34	-0.00227	-0.0868***	0.197***	0.227***	-0.0511***	-0.185***
	(0.0141)	(0.0145)	(0.0325)	(0.0306)	(0.0160)	(0.0165)
35-39	-0.111***	-0.251***	0.134***	0.156***	-0.164***	-0.365***
	(0.0144)	(0.0148)	(0.0333)	(0.0311)	(0.0164)	(0.0169)
40-44	-0.190***	-0.298***	0.0950***	0.112***	-0.245***	-0.407***
	(0.0150)	(0.0154)	(0.0342)	(0.0319)	(0.0172)	(0.0177)
45-49	-0.132***	-0.0739***	0.128***	0.135***	-0.182***	-0.148***
	(0.0158)	(0.0161)	(0.0357)	(0.0331)	(0.0181)	(0.0187)
Wife's education:						
Ref. Junior high school or high school						
Junior college or technical college	0.292***	0.0259***	0.0872***	0.0435***	0.311***	0.0257***
	(0.00401)	(0.00425)	(0.0164)	(0.0155)	(0.00418)	(0.00446)
University (undergraduate or higher)	0.694***	0.105***	0.459***	0.0576***	0.739***	0.114***
	(0.00524)	(0.00550)	(0.0128)	(0.0126)	(0.00581)	(0.00615)
Husband's age	-0.00985***	0.00425***	-0.00924***	0.00434***	-0.0103***	0.00378***
	(0.000354)	(0.000351)	(0.000698)	(0.000607)	(0.000416)	(0.000438)
Husband's education:						
Ref. Junior high school or high school						
Junior college or technical college	-0.0365***	0.0129**	-0.0119	-0.0170	-0.0372***	0.0152**
	(0.00544)	(0.00572)	(0.0186)	(0.0175)	(0.00572)	(0.00607)
University (undergraduate or higher)	-0.0364***	-0.0134***	0.0272**	0.00986	-0.0416***	-0.0172***
	(0.00431)	(0.00454)	(0.0131)	(0.0126)	(0.00459)	(0.00489)
High-skilled labor husband	0.181***	-0.0132***	0.146***	-0.00993	0.182***	-0.0154***
	(0.00445)	(0.00477)	(0.0140)	(0.0140)	(0.00474)	(0.00511)
Husband's employment type:						
Ref. Regular employee						
Non-regular employee	-0.206***	0.0500***	-0.552***	-0.00408	-0.0689***	0.0817***
	(0.00679)	(0.00644)	(0.0136)	(0.0109)	(0.00795)	(0.00804)
Executive officer	0.388***	-0.0338***	0.415***	-0.0371**	0.384***	-0.0342***
	(0.00683)	(0.00718)	(0.0174)	(0.0175)	(0.00742)	(0.00791)
Population size of residence	-0.0108***	0.00278***	-0.00961***	-0.000302	-0.0114***	0.00285***
	(0.000467)	(0.000485)	(0.00150)	(0.00137)	(0.000496)	(0.000522)
Living with grandparents	0.198***	0.0181***	0.0654***	0.0526***	0.213***	0.0125**
	(0.00538)	(0.00566)	(0.0181)	(0.0165)	(0.00567)	(0.00605)
Living in a public house	-0.374***	-0.0258***	-0.148***	0.0676***	-0.447***	-0.0618***
	(0.00861)	(0.00810)	(0.0180)	(0.0157)	(0.00975)	(0.00957)
Owning house	-0.00694*	-0.0663***	-0.0363***	0.00832	0.00156	-0.0767***
	(0.00401)	(0.00421)	(0.0111)	(0.0104)	(0.00433)	(0.00463)
Prefecture						
Constant	0.200***	-0.791***	-0.302***	-1.145***	0.247***	-0.682***
	(0.0223)	(0.0234)	(0.0884)	(0.0840)	(0.0244)	(0.0258)
Rho	0.0639***		-0.0160***		0.0744***	
	(0.00222)		(0.00621)		(0.00239)	
Observations	658,540		90,612		565,416	
Log likelihood	-770349		-102201		-663064	

Note 1: ***, **, and *denote significance at the 1 %, 5%, and 10% levels, respectively.
Note 2: Coefficients are shown in the upper rows and robust standard errors are shown in parentheses.

Table 4. *Results for the correlation between working in high-skilled labor and having children under six years old*

Variables	(13)	(14)	(15)	(16)	(17)	(18)
	All sample		Immigrants		Natives	
	High-skilled labor	Having children	High-skilled labor	Having children	High-skilled labor	Having children
Wife's nationaity:						
Ref. Japan (※Reference group is Korea in immigrant sample)						
Korea	-0.108***	-0.0168				
	(0.0152)	(0.0120)				
China	-0.342***	0.421***	-0.268***	0.456***		
	(0.0114)	(0.00808)	(0.0197)	(0.0144)		
Philippines	-0.896***	0.178***	-0.657***	0.197***		
	(0.0225)	(0.00946)	(0.0280)	(0.0158)		
Thailand	-0.264***	0.212***	-0.109**	0.220***		
	(0.0442)	(0.0238)	(0.0470)	(0.0270)		
Indonesia	-0.503***	0.207***	-0.359***	0.251***		
	(0.0697)	(0.0425)	(0.0725)	(0.0445)		
Vietnam	-0.590***	0.135***	-0.490***	0.193***		
	(0.0668)	(0.0328)	(0.0704)	(0.0353)		
UK	0.834***	0.0284	0.867***	0.0812		
	(0.0823)	(0.0843)	(0.0869)	(0.0849)		
US	0.915***	-0.168***	0.953***	-0.0923*		
	(0.0453)	(0.0485)	(0.0497)	(0.0501)		
Brazil	-0.359***	0.277***	-0.157***	0.336***		
	(0.0226)	(0.0117)	(0.0300)	(0.0181)		
Peru	-0.932***	0.168***	-0.672***	0.198***		
	(0.0619)	(0.0236)	(0.0634)	(0.0274)		
Others	0.0225	0.117***	0.106***	0.186***		
	(0.0179)	(0.0144)	(0.0243)	(0.0188)		
Living in Japan for under five years	-0.0402***	-0.203***	-0.0344*	-0.186***		
	(0.0154)	(0.0110)	(0.0196)	(0.0122)		

Note 1: ***, **, and *denote significance at the 1 %, 5%, and 10% levels, respectively.
Note 2: Coefficients are shown in the upper rows and robust standard errors are shown in parentheses.
Note 3: The reference groups for wives' nationalities in Columns 13 and 14 are Japan and those in Columns 15 and 16 are Korea.

Table 4. *Results for the correlation between working in high-skilled labors and having children under six years old (continued)*

Variables	(13)	(14)	(15)	(16)	(17)	(18)
	All sample		Immigrants		Natives	
	High-skilled labor	Having children	High-skilled labor	Having children	High-skilled labor	Having children
Wife's age:						
Ref. 20-24						
25-29	0.145***	-0.0981***	0.132**	0.0903***	0.140***	-0.180***
	(0.0187)	(0.0138)	(0.0512)	(0.0268)	(0.0203)	(0.0161)
30-34	0.184***	-0.0730***	0.179***	0.240***	0.171***	-0.195***
	(0.0186)	(0.0136)	(0.0513)	(0.0265)	(0.0200)	(0.0158)
35-39	0.150***	-0.235***	0.250***	0.171***	0.121***	-0.373***
	(0.0190)	(0.0139)	(0.0527)	(0.0271)	(0.0205)	(0.0163)
40-44	0.211***	-0.282***	0.272***	0.136***	0.182***	-0.416***
	(0.0197)	(0.0145)	(0.0545)	(0.0278)	(0.0214)	(0.0171)
45-49	0.278***	-0.0637***	0.292***	0.155***	0.249***	-0.160***
	(0.0207)	(0.0152)	(0.0568)	(0.0291)	(0.0225)	(0.0180)
Wife's education:						
Ref. Junior high school or high school						
Junior college or technical college	1.120***	0.0275***	0.575***	0.0544***	1.148***	0.0256***
	(0.00504)	(0.00421)	(0.0233)	(0.0151)	(0.00524)	(0.00442)
University (undergraduate or higher)	1.269***	0.110***	1.042***	0.0746***	1.287***	0.114***
	(0.00628)	(0.00542)	(0.0178)	(0.0122)	(0.00674)	(0.00611)
Husband's age	-0.00973***	0.00428***	-0.0101***	0.00477***	-0.00869***	0.00362***
	(0.000448)	(0.000338)	(0.00108)	(0.000562)	(0.000500)	(0.000430)
Husband's education:						
Ref. Junior high school or high school						
Junior college or technical college	-0.0997***	0.0165***	0.0741***	0.00260	-0.105***	0.0156***
	(0.00650)	(0.00567)	(0.0266)	(0.0171)	(0.00673)	(0.00604)
University (undergraduate or higher)	-0.0726***	-0.0103**	0.234***	0.0261**	-0.0973***	-0.0168***
	(0.00520)	(0.00449)	(0.0184)	(0.0122)	(0.00545)	(0.00485)
High-skilled labor husband	0.564***	-0.0133***	0.741***	-0.00517	0.545***	-0.0154***
	(0.00492)	(0.00475)	(0.0167)	(0.0137)	(0.00517)	(0.00510)
Husband's employment type:						
Ref. Regular employee						
Non-regular employee	-0.00433	0.0539***	0.0524***	0.00322	-0.00668	0.0819***
	(0.00845)	(0.00632)	(0.0187)	(0.0104)	(0.00965)	(0.00800)
Executive officer	-0.417***	-0.0298***	-0.285***	-0.0215	-0.440***	-0.0340***
	(0.00953)	(0.00711)	(0.0279)	(0.0170)	(0.0102)	(0.00788)
Population size of residence	-0.00692***	0.00260***	0.0151***	-1.59e-05	-0.00830***	0.00268***
	(0.000565)	(0.000474)	(0.00214)	(0.00129)	(0.000591)	(0.000514)
Living with grandparents	0.0274***	0.0187***	-0.0789**	0.0606***	0.0308***	0.0128**
	(0.00681)	(0.00562)	(0.0322)	(0.0162)	(0.00702)	(0.00603)
Living in a public house	-0.245***	-0.0117	-0.105***	0.0933***	-0.277***	-0.0591***
	(0.0116)	(0.00784)	(0.0289)	(0.0146)	(0.0126)	(0.00944)
Owning house	0.0900***	-0.0632***	0.118***	0.00974	0.0872***	-0.0745***
	(0.00485)	(0.00408)	(0.0158)	(0.00965)	(0.00514)	(0.00454)
Prefecture						
Constant	-1.327***	-0.806***	-1.508***	-1.228***	-1.341***	-0.662***
	(0.0275)	(0.0223)	(0.117)	(0.0786)	(0.0293)	(0.0249)
Rho	0.00771***		-0.0244***		0.0110***	
	(0.00268)		(0.00892)		(0.00283)	
Observations	691,080		105,359		582,736	
Log likelihood	-647359		-85781		-556828	

Note 1: ***, **, and *denote significance at the 1 %, 5%, and 10% levels, respectively.
Note 2: Coefficients are shown in the upper rows and robust standard errors are shown in parentheses.