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Ayumi Takenaka, Kenji Ishida, Makiko Nakamuro

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Negative Assimilation:

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Ayumi Takenaka
Department of Sociology, Bryn Mawr College

Kenji Ishida
Graduate School of Education, Tohoku University

Makiko Nakamuro
Graduate School of Arts and Letters, Tohoku University

Abstract

This paper examines the economic mobility of foreign migrants in Japan. In a country that is largely regarded as homogeneous and closed to outsiders, how and to what extent do immigrants achieve economic success? A survey conducted by the authors revealed that the conventional assimilationist perspective does not fully explain immigrants’ economic success in Japan. Migrants from the West experience what Chiswick and Miller (2011) refer to as “negative assimilation.” That is, their earnings decline over time in Japan. While negative assimilation was not clearly observed among immigrants from neighboring Asian countries, wages among them did not increase with the length of their stay in Japan. For both groups, the skills they brought from abroad were found to be largely accountable for their economic success, while locally specific human capital, such as education acquired in the host society, did not contribute to their earnings.

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2 Corresponding author: Ayumi Takenaka, Department of Sociology, Bryn Mawr College, atakenak@brynmawr.edu.
I. Introduction

Education acquired in the host society is largely regarded as crucial for immigrants’ economic success, yet this is not the case everywhere. Some immigrants experience what Chiswick and Miller (2011) refer to as “negative assimilation” when skills acquired in the host society do not contribute to higher earnings. In contrast to conventional views of assimilation and immigrants’ economic mobility, “negative assimilation” posits that immigrants’ earnings decline, paradoxically, as they prolong their stay in, and assimilate more readily to, the host society. We do not know, however, the exact mechanism of how locally specific human capital, as opposed to skills directly brought from abroad, affects immigrants’ economic status. This paper examines the mechanism by looking at immigrants’ economic mobility in Japan, focusing particularly on the role of education obtained in the host country or elsewhere.

According to Chiswick and Miller (2011), negative assimilation occurs only among immigrants from countries similar to the host society in terms of the transferability of skills, culture and labor market practices. In the case of Japan, we find that this model is more applicable to immigrants from the West than those from neighboring Asian countries. For both groups, however, what is largely accountable for their economic success is foreign capital, or skills directly brought from abroad, rather than locally specific human capital accumulated in the host society. This may reflect Japan’s immigration policy that allows only highly qualified immigrants, at least in principle, as stipulated by the amendment of the Immigration Control and Refugee
Recognition Act of 1989. This condition is prone to produce negative assimilation (or to deter positive assimilation), as skilled immigrants, who can expect favorable wage rewards at the time of entry, are more likely to see their wages decline than unskilled immigrants who tend to become incorporated into the bottom of the host labor market, at least initially. Japan, therefore, provides an ideal setting to examine the mechanism of negative assimilation or what kind of human capital, whether nourished domestically or abroad, contributes to immigrant earnings in the host society.

The questions of how immigrants “make it” or fail to “make it” are important in Japan where the number of immigrants, though still relatively small, is expected to increase. In the context of population ageing and prolonged economic recession, the government is enforcing the policy to increase the number of skilled foreign migrants as a way to revitalize its economy and society (Council on Promotion of Human Resource for Globalization Development 2011; Ministry of Justice 2012a; Tsukazaki 2008). The “New Growth Strategy,” implemented by the Cabinet Office in 2010, identifies the incorporation of foreign talent as a key policy goal. This has subsequently led to various measures, such as a point-based system, to further facilitate the entry, and retention, of skilled foreign migrants (Ministry of Justice 2012a).

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3 Japan does not officially admit unskilled foreign migrants, although in reality it has admitted foreigners, such as South Americans of Japanese descent, who mostly engage in manual labor. Those migrants were admitted based on family ties as Japanese descendants.

4 The term “immigrant” refers here to foreign nationals officially registered in Japan as long-term residents. The Japanese government does not use the term “immigrant.”

5 Currently about 2 million, foreign residents constitute only 1.7% of the total population in 2011 (Ministry of Justice 2012b). The proportion is much smaller than that in other rich countries—the U.S. (12.2%), Germany (13.0%), U.K. (11.5%), or Italy (8.0%) (OECD 2012).
Particularly crucial is a measure to attract foreign talent via education. Through initiatives, such as the “Plan to Accept 300,000 Foreign Students” (Ministry of Education, Culture, Sports and Technology 2008) and the “Career Development Program for Foreign Students in Japan” (Ministry of Economy, Trade, and Industry 2007), the government has placed a greater importance on student migration as a crucial strategy. Consequently, the number of foreign students has increased from 41,000 in 1990 to 140,000 in 2010 (JASSO 2012), as has the number of those who stay to work in Japan after graduation by adjusting their visa status—for instance, the number grew from 2,600 in 1997 to 11,000 in 2008 (Ministry of Justice 2009).

Often referred to as “educationally channeled migration” (Liu-Farrer 2009; Ziguras and Law 2006) or “Japanese-bred talent cultivation scheme” (Sakanaka 2011; LDP 2008), international student mobility is regarded an important (and desirable) source of foreign labor, as it is expected to produce bilingual and bicultural foreign workers with much needed skills and credentials specific to the local labor market (Suter and Jandl 2008; Ziguras and Law 2006; Terakura 2009). Armed with human capital nourished through host education, those foreigners, moreover, are expected to assimilate smoothly into the host society (Suter and Jandl 2008; Sakanaka 2011). Reflecting this, the newly implemented point-based immigration policy awards 5 “bonus” points to foreigners with a Japanese educational degree (and 10 additional points to those proficient in Japanese) toward a passing score of 70 (Ministry of Justice 2012a).

Educationally channeled migration, therefore, is an “ideal” strategy, particularly for a country, such as Japan, that tries to maintain its national and cultural homogeneity while incorporating foreign talent necessary to boost its global competitiveness.
(Sakanaka 2011; LDP 2008; Ministry of Education, Culture, Sports and Technology 2008).

How do educationally channeled migrants fare in Japan, in comparison to those without local educational credentials? Although numerous studies have demonstrated that immigrants with host educational credentials enjoy an economic advantage over others (Fong and Cao 2009; Zheng and Xie 2004; Ferrer and Riddel 2002; Krupka 2007; Arbe it and Warren 2012), human capital obtained in Japan does not appear to yield as much economic reward as it is generally expected. Once incorporated via the Japanese educational system, immigrants are automatically channeled into a sector where they compete directly with natives. In contrast, foreign skills are expected to complement, instead of competing with, the native market by maximizing the productivity gains from immigration (Borjas 2006). As such, foreign skills are often directed toward a segmented labor market (or for particular types of jobs “reserved” for foreigners) where such skills are highly valued and remunerated as a premium not possessed by natives. The segmented labor market thesis has generally been supported by past studies (e.g., Takenoshita 2006).

In line with the “negative assimilation” thesis, therefore, a key to economic success in Japan, at least in terms of wages, lies in how best to utilize “foreign capital” brought from abroad. Subsequently, those in possession of “foreign capital” and better positioned to put it in practice are more likely than others to earn higher wages in Japan. According to our analysis, the “negative assimilation” model was found to be more clearly applicable to English-speaking migrants from the West than to Asian migrants, although a premium attached to foreign capital exists regardless of national origins.
Drawing on data collected on the major immigrant groups in Japan (Chinese, Koreans, and English-speaking migrants from North America, Western Europe, and Oceania), we demonstrate below how “negative assimilation” works, as immigrants increasingly become integrated into Japanese society. Ironically, locally nourished human capital is not always valued in the labor market despite the government’s efforts to lure and cultivate foreign talent via local education. This finding, as described in the subsequent sections, helps us understand not only how immigrants “make it” in Japan, but also how immigrants and their skills are sorted, valued, and differentially incorporated into the Japanese labor market. It also tells us an important story about how the growing volume of immigration and immigrant integration shape Japanese nationhood at the time the country is steadily, albeit slowly, embracing its own version of “multiculturalism” (Ministry of Internal Affairs and Communications 2006; Komai 2006).

Before proceeding to the results of our analysis, we first present a general view of how immigrants “make it” and how education plays a role, whether it was obtained in the host society or immigrants’ countries of origin.

II. How Immigrants “Make it” in the Host Society—the Role of Education

Positive Assimilation

Immigrants’ economic mobility has predominantly been explained by assimilation or what Chiswick and Miller (2011) call “positive assimilation.” On average, immigrants earn less than their native-born counterparts, because they often lack directly transferable skills (Borjas, 2006; Portes and Rumbaut, 2006; Arbeit and Warren 2012; Kanas et al. 2011; Ferrer and Riddel 2002; Haskins 2008). Moreover, since immigrants tend to
originate in poorer countries, the type of skills they bring from home may not be readily applicable to richer countries. With increased duration in the destination, their economic status generally improves, as they assimilate and acquire skills specific to the host society (Chiswick 1978, 1979; Akresh 2006; Waldinger and Perlmann 1998; Alba and Nee 2003; Portes and Rumbaut 2006). This “positive assimilation” model, consistent with classic assimilation theory, is so robust, according to Chiswick and Miller (2011), that it has been found for all the major immigrant receiving countries and time periods, tested with various sources of data.

Central to this model is the accumulation of host-country experience. Human capital always has a country-specific component, such as knowledge of local institutions and culture and customs (Ferrer and Riddel 2002; Chiswick and Miller 2011; Portes and Fernandez-Kelly 2009; Kochhar 2005; Connor and Massey 2010). Thus, greater experience, or merely more time spent, in the host society usually translates into higher earnings. Accordingly, education acquired in the host society is regarded as a key determinant of immigrants’ economic achievement.

**The Role of Host vs. Foreign Education**

As demonstrated in numerous studies, host society education helps immigrants learn the host language and culture and acquire skills relevant for the local labor market. In their study on immigrants in Germany, Kanas et al. (2011) found that those who obtained their education in the host country had higher occupational status and annual income than those who did not acquire German education. Likewise, Akresh (2006) empirically showed that having some U.S. education improves the occupational status of
According to Lianos et al. (2004), EU graduates tend to fare better than other degree holders in the Greek labor market.

By the same token, foreign degrees, in general, are worth less than local degrees (Arbeit and Warren 2012; Fong and Cao 2009). Zheng and Xie (2004) specifically showed that U.S. immigrants with foreign degrees earned 14% less per year than U.S. degree holders. Li (2001) also found that foreign-educated immigrants in Canada earned about $10,000 less than Canadian-educated immigrants annually. This “discount effect” (Fong and Cao 2009), or penalty associated with foreign education, may be attributed to employers’ preference or inability to evaluate foreign degrees properly (Arbeit and Warren 2012); in the eyes of employers, foreign education may impart fewer skills deemed useful. In short, foreign credentials may simply be non-transferable or non-applicable; or else, they may be devalued to protect native workers by minimizing competition from newcomers (Fong and Cao 2009; DaVanzo and Morrison 1981).

However, the “discount effect” of foreign education is not uniform across the board. Fong and Cao (2009) found that the effect is smaller among professionals who are able to offset it with more extensive social networks they tend to possess. Arbeit and Warren (2012) similarly show that the penalty tends to be greater among less educated individuals. The value of foreign education also varies, depending on where it was obtained. According to Akresh (2007), educational credentials earned in Canada and Western Europe are valued more in the U.S. than those earned in Asia or Latin America (See also Arbei...
in which the degrees were earned. Thus, the value of foreign education may vary according to its transferability, reflected in the cultural or linguistic distance between the host and home countries (Chiswick and Miller 2011). In sum, the “positive assimilation” model postulates that acquiring the cultural norms of the host society helps immigrants move up the economic ladder. Therefore, a crucial component is experience accumulated, and particularly human capital or education obtained, in the country of destination.

**Negative Assimilation**

Whereas “positive assimilation” remains a dominant model in explaining immigrants’ economic mobility, “negative assimilation” (Chiswick and Miller 2011) posits that some immigrants, who come in with readily transferable skills, do not necessarily follow the traditional path of upward economic mobility. According to the authors, the model is applicable only to immigrants from developed countries similar in culture, language, and labor market practices to the host society. In this model, earnings decrease with duration in the host society, because the economic rent that motivated the initial migration declines over time (Chiswick and Miller 2011).

There are a number of possible reasons for the decline in economic rent. First, those immigrants who experience negative assimilation are likely to be a selected group of individuals in the first place who were drawn to the destination because of high earnings or higher returns to their skills than expected elsewhere. A relatively high wage that prompted their initial migration, however, does not always last indefinitely (See Chiwsick and Miller 2011, P. 504). Moreover, the decline may simply reflect a selection bias in who leaves and remains in the country; those migrants who come in with globally
transferable skills may not stay long in the destination, especially as they see the economic rent decline over time. The owners of globally transferable skills tend to be more mobile and move wherever the returns are highest. This mobility pattern may result in the gradual decrease of wages on average by leaving behind those who are less able to expect higher wages elsewhere\(^6\). The selection bias may also reflect the rising costs of return migration over time. As immigrants stay longer in the host society, they are likely to form families or establish new personal contacts, making it more difficult to move back or onward. Relative to the rising costs of return, decreasing wages may become more acceptable to immigrants over time.

In short, negative assimilation suggests that the accumulation of host society specific human capital may not always result in upward economic mobility. Unlike the type of immigrants typically assumed in the conventional model of positive assimilation, those immigrants with readily transferable global skills do not necessarily gain economically from assimilation or time spent in the host society. Chiswick and Miller (2011), however, do not clearly show what kind of skill is valued and how the host society-specific human capital they gradually acquire affects their wages. To clarify these, we now show how immigrants “make it” and who “makes it” in Japan by comparing the effects of human capital acquired in Japan and abroad.

III. Data and Methods

Data

\(^6\) Chiswick and Miller (2011) do not use panel data, and thus do not follow the same individuals over time, in discussing the relative decline of wages of those who experience negative assimilation. Instead, they use census data taken at different points in time.
The data used for the analysis were collected by a web-based survey in Japan between the months of February and April, 2012. We conducted the survey through a research company that specialized in immigrant communities and had a large number of foreign nationals as their monitors. Among those monitors, we included in our analysis only “newcomers” who came to Japan after the passage of the new immigration law in 1989 (thus excluding multi-generational long-term Korean residents who became incorporated into Japan under different circumstances). In order to analyze immigrants’ economic incorporation and social mobility over time, we focused on non-students, aged 16-69, who had resided in Japan for at least 3 years so as to exclude temporary visitors and residents. Our sample targeted 4 major immigrant groups in Japan: (1) Chinese, (2) Koreans, (3) South Americans (Brazilians and Peruvians), and (4) so-called “Westerners” from 5 English-speaking countries (USA, UK, Canada, Australia, and New Zealand). According to the latest immigration statistics available, these 4 groups together constituted more than 85% (1.18 million out of 1.39 million) of foreign “newcomers” in 2011 (Ministry of Justice 2012b). For the purpose of our analysis, we excluded immigrants from South America who were under-represented and further restricted the sample to those who had at least some college education and were residing in the Kanto and Kansai metropolitan areas at the time of the survey in order to control for regional differences. In the end, this yielded a total of 405 immigrants in our sample (84 Chinese, 212 Koreans, and 109 Westerners).

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7 Excluding long-term Korean residents who hold “special permanent residency”
8 These metropolitan areas (Tokyo, Kanagawa, Chiba, Saitama, Osaka, Kyoto, and Hyogo) have the largest number of foreign residents as well as the most diverse nationalities. We did not include the Nagoya area, for example, because its foreign population is dominated by one nationality--Brazilian.
Although the sample is neither representative nor generalizable of the nation’s entire foreign population, it nevertheless captures a substantive segment of the population: the educated and skilled targeted by the Japanese government. Also, it more or less corresponds to the population of our interest—educated and skilled “newcomers” from China, Korea, the U.S. and the other major English-speaking countries currently in the Japanese labor market. Those individuals tend to be highly educated and urban as a whole. According to the Japanese Census (2010), 82% of Americans, 37% of Chinese, and 31% of Koreans surveyed responded that they graduated from college or graduate school, and over 60% of Chinese, 70% of Koreans, and 65% of Americans were residing in the Kanto and Kansai metropolitan areas (Ministry of Justice 2012). Since urban residents tend to be more educated and engage in professional occupations (Census 2010), we believe that our sample, though skewed toward an “elite” segment of the population, is sufficiently generalizable to analyze how the kinds of immigrants targeted by the Japanese government fare and achieve economic mobility in Japan.

Web-monitoring survey, which has grown popular in Japan, necessarily entails sampling bias and measurement errors (Honda 2007; Couper 2000), however. It tends to draw on the educated who are computer-savvy and affluent enough to afford computing equipment. Nevertheless, it may be the best possible option in Japan where random-sampling is nearly impossible to draw among foreign residents due to a lack of large-

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9 These figures include special permanent residents and other migrants on family-related visas whose level of educational attainment, on average, may not be as high as work visa holders. Family-related visa holders are more disproportionately represented among Korean and Chinese migrants than Americans.
scale systematic data and of the reliable registration system in place\textsuperscript{10}. To date, the Census, which began to collect information on foreign residents in 1995, is the largest dataset available. Yet, given its limited information and access to micro-level raw data, it does not allow us to fully analyze immigrants’ socioeconomic integration by taking into account crucial factors such as income, Japanese language proficiency and the year of immigration to Japan (See for instance, Korekawa 2012; Omagari et al. 2011). Under these circumstances, web-monitoring survey is the most feasible method to gather large-scale micro data on foreign residents in Japan.

\textit{Models}

In order to address our research questions of how immigrants achieve economic mobility and how their host country-specific human capital helps achieve it, we ran two sets of regression models (Models I and II). The first set of models (Models I) is based on economic assimilation empirically demonstrated by Chiswick (1978, 1979) along with others (e.g., Borjas 1993; Portes and Rumbaut 2006). Consistent with classic assimilation theory, it stipulates that human capital accumulated in the host society, commonly measured as the number of years in the destination, is a key predictor of immigrant earnings. This is commonly expressed in the following mathematical equation where the wage of an individual worker $i$ is a function of years since migration (hereafter, $YSM$) in combination with other control variables:

\textsuperscript{10} The registration system for foreign residents was not well enforced or implemented until the Law of the Basic Resident Registers was passed in July, 2012. Although it is now fully integrated into the national registration system, the government anticipates it will still take long to be able to keep track of all foreign residents. According to a recent press report, many registration forms sent by local governments to foreign residents were returned due to the “unknown” whereabouts of foreign residents.
\[
\log(W_t) = \alpha + X'_i \beta + \gamma YSM_i + e_i \tag{1}
\]

where \(\log(W)\) represents the natural logarithm of individual annual earnings being examined, \(X\) is the vector of individual characteristics to be controlled for, such as age, years of schooling, and gender, and \(e\) is a random disturbance with mean zero and constant variance.

We first tested this model with \(YSM\) as the key independent variable (Models I-a and I-b). If the coefficient of \(YSM\) is positive and statistically significant, it implies that immigrants’ earnings improve with duration in the host country (i.e., positive assimilation). If the coefficient is negatively significant, however, it alludes to negative assimilation; earnings decline with the passage of time in the destination.

We then added another crucial measure of host society-specific human capital—education acquired in Japan—to test its effects on earnings (Models I-c and I-d). The positive and statistically significant coefficient of this variable would support previous studies concluding that locally obtained education help immigrants earn higher wages. If, on the other hand, the coefficient is negative and statistically significant, we would conclude that skills and credentials specific to the Japanese labor market are not as valued as skilled directly brought from abroad.

For the second set of models (Model II), we ran separate regressions for two regions from which immigrants in our sample originated—China, Korea and the English-speaking West (the U.S., the U.K., Canada, Australia, and New Zealand). Based on previous studies that found differential effects of foreign degrees, we tested, first, whether the value of foreign credentials varies by region of origin, and second, whether such value is observed only in a specific region of origin. Thirdly, we also tested whether
the overall determinants of earnings differ depending on where immigrants come from. By running these separate regressions by region of origin, we aimed to clarify how negative assimilation works, when it occurs, and for whom.

**Variables**

Table 1 summarizes all the variables used for the models. The dependent variable is the natural logarithm of annual wage before tax deductions during the 2011 calendar year. The response category in the original questionnaire ranged from 1 (=no income) through 16 (=more than 15 million JPY). We set the minimum (1=no income and 2=less than 0.5 million JPY) to zero and maximum (16=more than 15 million JPY) to 15 million JPY. Then, we took the median value for categories between 3 (=0.5 million-0.99 million JPY) and 15 (=10 million-14.99 million JPY).

One of the key independent variables, YSM, refers to the length of time in Japan, measured as the number of years since first arrival in Japan. Another key independent variable, the place in which the highest degree was earned, is based on the question of whether the degree was earned in Japan, country of birth, or a third country. Since relatively few earned their degrees in a third country, we combined the latter two as foreign degrees as opposed to degrees earned in Japan. This variable is intended to measure the type of human capital, whether it was invested and acquired pre-migration abroad or post-migration in the host society.

The education variable is a measure of general human capital, or education acquired in any country. It is expressed as a series of dummy variables that correspond to degrees conferred at different educational levels (two-year college, four-year college, and
graduate school). We used these discrete variables, instead of the continuous variable (or years of schooling) commonly used in wage analysis, because as it has been frequently pointed out (e.g., Kawaguchi 2011), degrees are a better measurement of return to education than years of schooling in Japan. Each of the dummy variables is expressed as “one” if an individual completed a certain level of education (i.e., two-year college, four-year college, or graduate school) or otherwise, “zero”; the reference group in our models is set to four-year college.

In addition to these key variables, some other variables deemed to affect productivity, and hence earnings, are included in the models as controls. They include father’s education\(^{11}\), gender, working hours per week, firm size, Japanese proficiency, and English proficiency. Father’s education is used as a measure of one’s socioeconomic background. Numerous studies have found that father’s socioeconomic status is strongly related to one’s economic attainment, either directly or indirectly (e.g., Tachibanaki 1988)\(^{12}\). Gender, the number of work hours, and firm size have also been identified as crucial determinants of earnings, particularly in Japan; males generally earn more than females, net of other factors, as do employees of larger firms and individuals who put in more hours at work (e.g., Statistics Bureau of Japan 2012; Sano and Yasui 2009). Japanese proficiency is measured on a 4-point scale (1=little; 2=not so good; 3=average; 4=good) based on the subjective evaluation of respondents’ writing abilities. English

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\(^{11}\) Father’s education is treated here as a continuous variable, measured as years of schooling, because in most cases, respondents’ fathers completed their education outside of Japan.

\(^{12}\) Some researchers, including Tachibanaki (1988), confirm that father’s education (used as a proxy for parental socioeconomic status) directly affect children’s economic outcomes, while others, such as Sano and Yasui (2009), suggest that father’s education affects children’s economic outcomes only indirectly through children’s education or the standard of living at home.
proficiency, measured similarly on a 4-scale point, is also added to our models, as it has frequently been identified as a crucial skill valued in the Japanese labor market (e.g., Watanabe 2003).

The descriptive statistics summarized in Table 1 show that the average immigrant in our sample is 31 years old with a foreign college degree and has lived in Japan for 8 years; currently, s/he engages in full-time employment, working 8 hours a day at a medium or large-sized firm. The average annual wage of 5.25 million JPY is significantly more than the national average, 4.12 million JPY, among all employees in Japan in 2010 (National Tax Agency 2012).

Table 1 also shows a substantial difference between immigrants from Asia and the English-speaking Western countries included in our analysis; immigrants from the West are economically more advantaged, on average, than their Asian counterparts. Specifically, the average immigrant from the West earns 6.21 million JPY annually, over 1 million JPY more than the average Asian (4.89 million JPY). This may reflect the difference in their human capital; Westerners tend to be slightly older (32.7 years old as opposed to 30.4 years old for Asians) and more educated (25% of Westerners hold a graduate degree compared to 20% among Asians). Yet, they earn significantly more, even though their level of Japanese proficiency is lower (a score of 2.8 as opposed to 3.5 for Asians) and fewer of them earned their degree in Japan. In short, there is a significant difference in their characteristics between these groups, which may affect the pattern of economic mobility.

IV. Results
Baseline Model (Model I-a and Model I-b)

Our analysis begins with a baseline model (Models I-a and I-b in Table 2), based on the entire sample, to assess the applicability of the assimilation model, either positive or negative. The standardized coefficients estimated by Ordinary Least Squares are reported in Table 2, along with the heteroskedasticity-robust standard errors. Model I-a includes only a linear variable for YSM, and a quadratic YSM is added in Model I-b. Overall, the coefficients of the variables included in the models are mostly significant in predicted directions. Being male and older age increase wages, as does the higher level of parental socioeconomic status. One also earns more by working longer hours and at a larger firm. Higher education degrees, regardless of where they were earned, also help increase wages, as the returns to two-year college education are lower than the returns to four-year college education at the 5% significance level. However, the difference in returns between four-year college education and graduate education is statistically indistinguishable from zero, holding other conditions constant. This is consistent with prior findings that graduate degrees often do not yield higher wages than four-year-college degrees in Japan (Murasawa 2011).13

The most remarkable result here is the negative effect of YSM. In both Model I-a and Model I-b, the linear variable for YSM is negatively related to earnings, while the coefficient of quadratic YSM is positively and statistically significant, holding the other variables constant. These results suggest that the duration of time in Japan appears to bear no significant advantage in the process of economic mobility; immigrants who stay

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13 Hirao, Umezaki, & Matsushige (2011) explain that this is attributable to the rapid expansion of graduate education in Japan, pushed, in part, by government policies. Due to the excess supply of highly educated workers, a labor market premium on graduate education has diminished.
long in Japan earn less, on average. This clearly supports the negative assimilation thesis. Unlike Chiswick and Miller’s model (2011) that was confined to a specific segment of the immigrant population (adult males from advanced English-speaking countries), negative assimilation is more broadly applicable in Japan. Contrary to Western countries where immigrants typically experience positive assimilation, immigrants in Japan, at least the skilled and educated targeted by the government, appear to undergo a different process of economic assimilation.\(^{14}\)

**Extended Model with Country Specific Human Capital (Model I-c and Model I-d)**

To further explore the role of location-specific human capital, we next tested the effect of the place where the highest degree was obtained. It is measured as a dummy variable coded as 1 if the degree was completed in Japan and 0 if otherwise. The results of Model I-c and Model I-d (See Table 2) show that the coefficient of this variable is negative and statistically significant, suggesting that education acquired in Japan is negatively related to immigrants’ wages. What it implies on the flip side is that skills brought from abroad contribute more to higher wages in Japan; there is a labor market premium on foreign skills and credentials. Note that the effect of general education (the returns to two-year college education as opposed to those to four-year college education, regardless of where degrees were obtained) observed in Models I-a and I-b disappears when the place of the highest degree obtained is inserted in Models I-c and I-d. This indeed suggests that the type of education (whether education is attained in the host

\(^{14}\) The inclusion of many independent variables in the models could potentially cause multicollinearity. However, we confirmed that there is no evidence of severe colinearity among the independent variables according to the Variance Inflation Factors (VIF) we computed.
society or abroad) may matter more than the overall level of education (general human capital) in predicting immigrant earnings in Japan.

Models I-c and I-d also test the effects of Japanese and English writing skills on wages. Both positive and significant, the results are consistent with previous studies (e.g., Portes and Rumbaut 2006; Alba and Nee 2003). As shown by its strong positive coefficient, English proficiency, as a type of capital brought from abroad, is highly valued in the Japanese labor market. Japanese proficiency, a crucial host society-specific human capital, is also confirmed vital to economic success. Yet, what is surprising is that Japanese proficiency is not correlated with YSM. Thus, the Japanese skills valued here are not a product of experience accumulated in Japan; rather, they reflect skills acquired abroad. In other words, they are a part of human capital directly brought from abroad. Foreign capital, or skills brought from abroad, once again, proves to be a crucial determinant of immigrants’ economic mobility in Japan.

These results are counterintuitive. Despite the prevalence of the positive assimilation thesis, it does not seem to hold in Japan. Even though the coefficient of YSM ceases to be statistically significant after controlling for the location of the highest degree earned (Models I-c and I-d), there is still no evidence of positive assimilation.

**Estimating Earning Changes Over Time (Model I-e and Model I-f)**

The results presented above simply show a negative correlation between immigrant wages and YSM, as our data are not designed to track down changes of the same individuals at different points in time. Yet, we can estimate changes in immigrant wages over time by adding another variable to our models: the initial wages immigrants
earned upon arriving in Japan. Models I-e and I-f estimate the determinants of current wages, controlling for the effect of initial wages earned in Japan. The results (Table 2) show that adding initial wages as another independent variable (Models I-e and I-f) does not change the effects of the factors analyzed earlier (Models I-c and I-d). This indeed suggests that time spent in Japan has no significant effect on current wages, holding constant initial wages earned upon migrating to the country. In other words, the accumulation of host-specific human capital, measured by duration in time in the host society, does not increase immigrants’ wages over time in Japan.

**Mechanisms of Negative and Non-Positive Assimilation**

Taken together, time spent in Japan has either a negative or insignificant effect on earnings. Moreover, human capital accumulated in the host society, measured as education attained in Japan, has a robust negative effect on immigrant wages. Why does host-specific human capital matter less than foreign capital brought from abroad? This may, in part, be explained by what immigrants actually do with their skills in Japan.

Figure 1 shows that there is a substantial difference in occupational status between immigrants with foreign and Japanese educational credentials. Those who earned their highest degrees abroad are more likely to engage in professional, technical, or managerial jobs (71.7%) than others with Japanese educational credentials (51.4%). A majority of foreign educated immigrants in our survey engaged in teaching, language editing, trade, and IT—the types of jobs that are likely to complement skills possessed by natives—in Japan. On the other hand, immigrants educated in Japan tended to take up jobs that would face more competition with natives, such as clerical jobs, sales, or
general managerial work in companies. According to a survey conducted by JASSO (2005) among foreign graduates from Japanese universities, a majority of those who stayed in Japan were company employees engaged in translation/interpretation business (28%), technical development (11%), or operations and sales (11%)—in short, they mostly engaged in general office work, like natives, within a Japanese company setting. Foreign credentials, thus, were likely to lead to more highly remunerated professional jobs, because they were often channeled into a different sector of the labor market (specific types of jobs) where such skills are regarded a premium not possessed by natives.

The reason foreign capital matters may also have to do with a number of unobserved factors not captured by our models. In particular, the effects of foreign (vs. host) education may be mediated by characteristics, such as innate ability, aspirations, and parental emphasis on education. Since our analysis based on OLS estimates with cross-sectional data cannot prove causality, we do not know if foreign education causes wages or if high wage earners were simply educated abroad. High wage earners with a foreign education may have a higher ability in the first place, or migrants who opt to acquire a Japanese education may be less ambitious, reflecting the widespread reputation that it is relatively easy for foreign students to get into Japanese universities.

To see who earned the highest degree in Japan or elsewhere, we ran a simple correlation between the place of the highest degree and a select number of family and individual observable characteristics, such as father’s education, gender, and age (Table 4). Since the correlations are weak or insignificant on the most part, the place of the
degree seems more or less randomly distributed. The degree earned in Japan or abroad, therefore, has its own effect on wages earned in Japan.

A better clue as to why foreign education matters may lie in what is actually valued in the Japanese labor market. Namely, the kind of foreign capital valued may have a specific regional or cultural component. As discussed earlier, Chiswick and Miller (2011) stipulate that negative assimilation occurs under two conditions: immigrants come from countries with comparable levels of economic development (e.g., from the U.K. to the U.S.), and immigrants possess perfectly transferable skills (e.g., native English fluency). In line with this, negative assimilation observed in Japan may be more applicable to highly skilled immigrants from high-income countries. Stated differently, the type of foreign skills valued in the Japanese labor market may be regionally or culturally specific. To test this, we next ran separate regressions for Asia (China and Korea) and the English-speaking “West” (the U.S., the U.K., Canada, Australia, and New Zealand)\(^{15}\).

**Separate Models by Region and Country (Models II)**

The results summarized in Table 3 show some regional differences. Negative assimilation is strongly at work for Westerners, but only for Westerners\(^ {16}\). The negative and significant coefficient of $YSM$ for Westerners suggests that their wages do decline over time in Japan. However, this is not the case for Asians. Moreover, the positive and

\(^{15}\) We also ran separate regressions by gender to see if the effect of education is gender-specific. Much previous literature estimates immigrant economic assimilation based on male-only samples (e.g., Chiswick 1978 and Borjas 1993). Our results, however, did not show any significant differences between males and females.

\(^{16}\) We note that here, again, the computed VIF suggests no severe colinearity among the independent variables included in Models II-a and II-b.
significant coefficient of quadratic $YSM$ in the Western model implies that their wage and $YSM$ have a U-shape relationship; their earnings decline for the first ten years, then gradually rise with the duration of time in Japan. Asians exhibit a somewhat different pattern. While $YSM$ has a negative effect, which is significant only at the 0.1 level (Model II-a), its effect disappears once location-specific human capital (degree obtained in Japan and English language skills) is included in the model (Model II-b). While positive assimilation is clearly not observed here, we cannot conclude that negative assimilation works for Asian migrants.

For both groups, education attained in Japan has a negative effect, while English skills have a positive effect, on wages. Thus, a premium attached to foreign capital remains strong regardless of where migrants come from. This may be due to the relatively short supply of personnel sufficiently proficient in English or other foreign skills in Japan, as reflected in the small number of Japanese who study abroad or earn a degree abroad (See Institute of International Education 2012; JASSO 2012). It may also reflect the Japanese immigration policy that accords premiums to foreign skills brought from abroad.

Moreover, the separate regression analysis shows that a different mechanism is at work in explaining the economic mobility of each group. In general, the mobility pattern of Asians more closely resembles the mainstream pattern in Japan, as they gain economically by working at a larger (thus more prestigious) firm for longer hours like natives. A significant exception, and the only difference, is the strong positive effect of foreign capital, such as English skills and foreign education. As mentioned earlier, Asian migrants, particularly those educated in Japan, may follow (or are expected to follow) the
economic mobility path typically experienced by natives--obtaining employment in larger prestigious firms by going through specific labor recruitment practices learned in local educational institutions. While they largely reap economic rewards by following the path, the foreign capital they possess still has a labor market premium. And this is robust and consistent, regardless of how long they stay in Japan.

The economic mobility of Western migrants, by contrast, exhibits a clearer pattern of negative assimilation. While those educated in Japan do follow a pattern similar to Asians and natives, what helps them move up, overall, is human capital nourished abroad. The different results observed between the two regional patterns may imply that foreign capital brought from the West, such as English skills, are particularly valued in the Japanese labor market. Alternatively, Westerners, who are less likely than Asians to possess Japan-specific human capital, such as Japanese language proficiency and education, may be more predisposed to utilize their foreign capital in the Japanese labor market.

Altogether, negative assimilation appears to be more broadly applicable in Japan than suggested by Chiswick and Miller (2011); at least, the positive assimilation thesis commonly used to explain immigrant economic mobility does not apply to the case of Japan. While foreign skills directly brought from abroad contribute to higher wages, human capital accumulated in the host society puts immigrants at a relative disadvantage.

V. Discussion and Conclusions

Although positive assimilation has been a dominant model in explaining immigrants’ economic mobility, we find that it is not the case in Japan. Contrary to the
conventional view, locally acquired human capital does not, ironically, contribute as much to wages as skills brought from abroad, even though the government tries to lure and cultivate foreign talent via local education.

In the context of growing global talent competition, educationally channeled migration is increasingly seen and identified as an important national strategy (Terakawa 2009). It is a strategy to smoothly integrate immigrants into Japanese society by instilling locally-specific skills and culture through education. Sometimes called “building a Japanese-style immigrant nation” (Sakanaka 2011; LDP 2008), such a view envisions a “multicultural” nation where Japanese nationals and foreigners harmoniously co-exist and are respected, treated, and rewarded equally for their skills and potentials (Ministry of Internal Affairs and Communications 2006).

Given our findings, however, this strategy may end up producing immigrants who are unable to gain economic rewards commensurate with their skill levels. Without economic rewards, the value of Japanese education may diminish, particularly for the highly skilled who can expect higher economic rewards elsewhere. The most talented and able with globally transferable skills may simply opt to move elsewhere, using Japan as a stepping-stone or altogether bypassing the country.

The strategy to incorporate immigrants via education may also result in reinforcing social differentiations. While education is a tool to integrate a nation (Anderson 2004) and decrease social inequalities (Oshio and Senoh 2003), it also plays a role in creating social stratification. Arbeiter and Warren (2012) point out that education serves as a mechanism to create a hierarchy by attaching different values to different degrees, depending on where they were earned—U.S. degrees are worth the most, while
the least valuable are degrees from poorer, non-European countries. The kind of education (or the type of school attended) as well as the level of education acquired is significantly determined by parental (or father’s) education, and they, in turn, shape one’s life chances (Oshio and Senoh 2003; Tachibanaki 1988).

The way growing numbers of immigrants integrate to Japanese society may also contribute to such divisions. As we have seen, the skills immigrants bring are sorted, valued, and incorporated into different segments of the Japanese labor market, depending on where they were educated, where they come from, and how long they have resided in Japan. Foreign skills, though highly rewarded in the Japanese labor market, especially at the beginning, are often channeled into specific types of jobs “reserved” for foreigners. And migrants do not seem to gain more economically by staying longer in Japan. By contrast, locally bred skills, though modestly rewarded, are typically sorted into the mainstream career path where they compete more directly with natives.

The immigrants’ economic mobility pattern we have presented here also reveals the sorting mechanism of immigration, not only of who comes to Japan in the first place, but also of who stays and who moves on from Japan. This geographical mobility pattern, reflected in economic mobility experienced or expected in Japan, may further reinforce the social differentiation and hierarchy. In short, while the growing volume of immigration to Japan tends to be discussed, and debated, within the framework of fostering national integration and multicultural ties, it also plays a role in creating and reinforcing divisions between Japanese and foreigners.

Yet, it is this differentiation that helps immigrants achieve economic mobility in Japan. Although “success” is often defined in Japan as climbing up the mainstream
career path by acquiring a national education and going through the standard company recruitment process, immigrants often “make it” by acquiring, bringing, and utilizing skills foreign to natives. Thus, assimilating, or acquiring locally specific human capital, does not always lead to upward economic mobility, and it certainly appears to be the case for immigrants, in general, in Japan.
References Cited:


Murasawa, M. (2011). Daigakuin wo meguru kakusa to kaisou [Inequality and stratification around graduate education]. In Y. Sato, & F. Oshima (Eds.), *Gendai*
no kaiso shakai [Stratified society today: inequality and diversity] (297-311).
Tokyo: Tokyo University Press.


Table 1: Descriptive Statistics of Variables Used in the Models

<table>
<thead>
<tr>
<th>Variables</th>
<th>All respondents (N=405)</th>
<th>Asian (N=296)</th>
<th>Westerner (N=109)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Min</td>
</tr>
<tr>
<td>Wage in current job (in JPY)</td>
<td>524.753</td>
<td>422.883</td>
<td>50</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>0.588</td>
<td>0.493</td>
<td>0</td>
</tr>
<tr>
<td>Female (Reference)</td>
<td>0.412</td>
<td>0.493</td>
<td>0</td>
</tr>
<tr>
<td>Age</td>
<td>31.040</td>
<td>5.712</td>
<td>21</td>
</tr>
<tr>
<td>Age squared</td>
<td>995.998</td>
<td>394.895</td>
<td>441</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two year college</td>
<td>0.099</td>
<td>0.299</td>
<td>0</td>
</tr>
<tr>
<td>Four year college (Reference)</td>
<td>0.699</td>
<td>0.459</td>
<td>0</td>
</tr>
<tr>
<td>Graduate school</td>
<td>0.202</td>
<td>0.402</td>
<td>0</td>
</tr>
<tr>
<td>Working hours per week</td>
<td>42.178</td>
<td>10.102</td>
<td>6</td>
</tr>
<tr>
<td>Firm size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-29</td>
<td>0.348</td>
<td>0.477</td>
<td>0</td>
</tr>
<tr>
<td>30-299 (Reference)</td>
<td>0.279</td>
<td>0.449</td>
<td>0</td>
</tr>
<tr>
<td>Over 300</td>
<td>0.373</td>
<td>0.484</td>
<td>0</td>
</tr>
<tr>
<td>Father's years of education</td>
<td>13.652</td>
<td>3.204</td>
<td>0</td>
</tr>
<tr>
<td>Year since migration</td>
<td>7.679</td>
<td>4.512</td>
<td>3</td>
</tr>
<tr>
<td>Year since migration squared</td>
<td>79.274</td>
<td>96.746</td>
<td>9</td>
</tr>
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<td>Japanese writing skill</td>
<td>3.331</td>
<td>0.832</td>
<td>1</td>
</tr>
<tr>
<td>Educational credentials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in Japan</td>
<td>0.338</td>
<td>0.474</td>
<td>0</td>
</tr>
<tr>
<td>Abroad (Reference)</td>
<td>0.662</td>
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<td>0</td>
</tr>
<tr>
<td>English writing skill</td>
<td>3.052</td>
<td>0.972</td>
<td>1</td>
</tr>
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</table>

(Source) Authors’ calculation based on survey data
Table 2: Model I - Regression Analyses of Immigrant Earnings

<table>
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<tr>
<th></th>
<th>I-a</th>
<th>I-b</th>
<th>I-c</th>
<th>I-d</th>
<th>I-e</th>
<th>I-f</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>Coef.</td>
<td>Robust S.E</td>
<td>Coef.</td>
<td>Robust S.E</td>
<td>Coef.</td>
<td>Robust S.E</td>
</tr>
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<td>Constant</td>
<td>4.840 ***</td>
<td>0.239</td>
<td>4.858 ***</td>
<td>0.241</td>
<td>3.889 ***</td>
<td>0.300</td>
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<tr>
<td>Male</td>
<td>0.394 ***</td>
<td>0.070</td>
<td>0.368 ***</td>
<td>0.070</td>
<td>0.366 ***</td>
<td>0.065</td>
</tr>
<tr>
<td>Age</td>
<td>0.023 ***</td>
<td>0.008</td>
<td>0.023 ***</td>
<td>0.006</td>
<td>0.017 †</td>
<td>0.009</td>
</tr>
<tr>
<td>Age squared</td>
<td>-0.001 *</td>
<td>0.001</td>
<td>-0.003 ***</td>
<td>0.001</td>
<td>-0.002 †</td>
<td>0.001</td>
</tr>
<tr>
<td>Education (Reference: four year college)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two year college</td>
<td>-0.244 *</td>
<td>0.114</td>
<td>-0.220 †</td>
<td>0.115</td>
<td>-0.072</td>
<td>0.120</td>
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<tr>
<td>Graduate school</td>
<td>-0.122</td>
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<td>-0.107</td>
<td>0.075</td>
<td>-0.020</td>
<td>0.081</td>
</tr>
<tr>
<td>Working hours per week</td>
<td>0.013 ***</td>
<td>0.004</td>
<td>0.012 †</td>
<td>0.004</td>
<td>0.015 ***</td>
<td>0.003</td>
</tr>
<tr>
<td>Firm size (Reference: 30-299)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-29</td>
<td>-0.251 ***</td>
<td>0.078</td>
<td>-0.258 ***</td>
<td>0.078</td>
<td>-0.226 †</td>
<td>0.078</td>
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<tr>
<td>Over 300</td>
<td>0.413 ***</td>
<td>0.084</td>
<td>0.404 ***</td>
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<td>0.269 **</td>
<td>0.083</td>
</tr>
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<td>Father's years of education</td>
<td>0.025</td>
<td>0.012</td>
<td>0.021 †</td>
<td>0.012</td>
<td>0.018</td>
<td>0.013</td>
</tr>
<tr>
<td>Year since migration</td>
<td>-0.020 *</td>
<td>0.009</td>
<td>-0.034 ***</td>
<td>0.010</td>
<td>-0.002</td>
<td>0.010</td>
</tr>
<tr>
<td>Year since migration squared</td>
<td>0.006 ***</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japanese writing skill</td>
<td>0.182 ***</td>
<td>0.046</td>
<td>0.174 ***</td>
<td>0.045</td>
<td>0.092 *</td>
<td>0.036</td>
</tr>
<tr>
<td>Educational credentials (Reference: abroad)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in Japan</td>
<td>-0.299 ***</td>
<td>0.081</td>
<td>-0.234 **</td>
<td>0.087</td>
<td>-0.153 *</td>
<td>0.070</td>
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<tr>
<td>English writing skill</td>
<td>0.178 ***</td>
<td>0.049</td>
<td>0.171 ***</td>
<td>0.048</td>
<td>0.050</td>
<td>0.035</td>
</tr>
<tr>
<td>Origin (Ref: Asian)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westener</td>
<td>0.154 †</td>
<td>0.083</td>
<td>0.153 †</td>
<td>0.080</td>
<td>-0.004</td>
<td>0.111</td>
</tr>
<tr>
<td>Wage at the time of entry (logarismic transformation)</td>
<td>0.520 ***</td>
<td>0.037</td>
<td>0.515 ***</td>
<td>0.037</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.359</td>
<td>0.383</td>
<td>0.436</td>
<td>0.445</td>
<td>0.664</td>
<td>0.665</td>
</tr>
<tr>
<td>N</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
</tbody>
</table>

(Note) *** p < 0.001, ** p < 0.01, * p < 0.05, † p < 0.1

(Source) Authors’ calculation based on survey data
## Table 3: Model II - Regression Analyses of Immigrant Earnings by Region of Origin

<table>
<thead>
<tr>
<th></th>
<th>II-a (Asian)</th>
<th>II-b (Asian)</th>
<th>II-c (Westerner)</th>
<th>II-d (Westerner)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>Robust S.E</td>
<td>Coef.</td>
<td>Robust S.E</td>
</tr>
<tr>
<td>Constant</td>
<td>4.527</td>
<td>0.377</td>
<td>4.342</td>
<td>0.357</td>
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<tr>
<td>Male</td>
<td>0.349</td>
<td>0.081</td>
<td>0.315</td>
<td>0.074</td>
</tr>
<tr>
<td>Age</td>
<td>0.024</td>
<td>0.009</td>
<td>0.010</td>
<td>0.011</td>
</tr>
<tr>
<td>Age squared</td>
<td>-0.004</td>
<td>0.001</td>
<td>-0.003</td>
<td>0.001</td>
</tr>
<tr>
<td>Education (Reference: four year college)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two year college</td>
<td>-0.178</td>
<td>0.121</td>
<td>-0.034</td>
<td>0.114</td>
</tr>
<tr>
<td>Graduate school</td>
<td>-0.031</td>
<td>0.086</td>
<td>0.073</td>
<td>0.095</td>
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<tr>
<td>Working hours per week</td>
<td>0.014</td>
<td>** 0.004</td>
<td>0.015</td>
<td>** 0.004</td>
</tr>
<tr>
<td>Firm size (Reference: 30-299)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-29</td>
<td>-0.257</td>
<td>† 0.088</td>
<td>-0.203</td>
<td>* 0.088</td>
</tr>
<tr>
<td>Over 300</td>
<td>0.430</td>
<td>*** 0.096</td>
<td>0.353</td>
<td>*** 0.096</td>
</tr>
<tr>
<td>Father's years of education</td>
<td>0.010</td>
<td>0.011</td>
<td>0.004</td>
<td>0.011</td>
</tr>
<tr>
<td>Year since migration</td>
<td>-0.021</td>
<td>† 0.011</td>
<td>0.018</td>
<td>0.015</td>
</tr>
<tr>
<td>Year since migration squared</td>
<td>0.004</td>
<td>* 0.002</td>
<td>0.000</td>
<td>0.002</td>
</tr>
<tr>
<td>Japanese writing skill</td>
<td>0.123</td>
<td>† 0.067</td>
<td>0.097</td>
<td>0.065</td>
</tr>
<tr>
<td>Educational credentials (Reference: abroad)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in Japan</td>
<td>-0.350</td>
<td>** 0.104</td>
<td>-0.357</td>
<td>* 0.175</td>
</tr>
<tr>
<td>English writing skill</td>
<td>0.192</td>
<td>*** 0.051</td>
<td>0.659</td>
<td>* 0.302</td>
</tr>
<tr>
<td>R²</td>
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<td>0.579</td>
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<tr>
<td>N</td>
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<td></td>
<td>109</td>
<td></td>
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</tbody>
</table>

*** p < 0.001, ** p < 0.01, * p < 0.05, † p < 0.1

(Note) *** p < 0.001, ** p < 0.01, * p < 0.05, † p < 0.1

(Source) Authors’ calculation based on survey data
Table 4: Correlation between Japanese degree holders and their family and demographic characteristics

<table>
<thead>
<tr>
<th></th>
<th>Corr. Coef</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>-0.133 **</td>
</tr>
<tr>
<td>Age</td>
<td>-0.096 †</td>
</tr>
<tr>
<td>Father’s years of education</td>
<td>-0.088 †</td>
</tr>
<tr>
<td>Manager at work is foreigner</td>
<td>-0.072</td>
</tr>
</tbody>
</table>

(Note) *** p < 0.001, ** p < 0.01, * p < 0.05, † p < 0.1
(Source) Authors’ calculation based on survey data
Figure 1: Occupational status by location in which the highest degree was earned

(Note) PTM represents professional, technical, and managerial types of occupations. Non-PTM represents clerical and manual type of occupations. (Source) Authors’ calculation based on survey data