Can Japanese Firms Get Along with Highly Skilled Foreign Workers? : Intentions among Former International Students to Settle and Work in Japan

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ABSTRACT

On the grounds that there are deficits in the work force, the Japanese government has proposed policies to facilitate the hiring of highly skilled foreign workers and to encourage Japanese firms to create conducive work environments for such workers. However, it remains unclear whether highly skilled foreign workers at Japanese firms intend to settle and work in Japan and whether firms' implementation of human resources management (HRM) has been effective. This paper addresses these questions based on data obtained in a survey of former international students; international students have recently drawn attention as a source of highly skilled workers. We conducted an empirical analysis and offer the following suggestions. First, regarding settling and working in Japan, HRM policies that address former international students' career development and position as foreigners must be implemented; doing so can reduce feelings of deprivation among them and mitigate their intention to leave Japan. Second, it was empirically determined that former international students have the intention of becoming target earners. Thus, in place of a policy that merely considers facilitating the entry of former international students into the Japanese labor market, it is better to provide systems that can encourage the circulation of migration. Third, it was shown that for former international students, the experience of studying in Japan may hamper their global transition; thus, it is necessary that Japanese educational institutions provide an environment where skills performable globally can be cultivated.

INTRODUCTION

Partly because of its aging society and low birth rate, Japan now faces a workforce shortage. According to the OECD statistics, the population of people aged 15–64 years old reached a peak in 1995 and has since continually decreased; this population is forecasted to decline by 42.7% from 1995 levels by 2050. Problems related to workforce shortages have been on the upsurge in other developed countries but appear to be more urgent in Japan. To ameliorate workforce deficits, researchers in relevant fields and economic organizations have discussed and advocated ways to hire people from abroad (e.g. Asato ed., 2011; Ishikawa ed., 2015; Japan Business Federation, 2015).

Japan receives highly skilled foreign workers from two sources: foreigners with specific skills, whom firms can put to work immediately, and international students who have studied in Japan. The entry of international students into the labor market in receiving countries has drawn attention in recent studies on international migration (Tramblay, 2002; Ziguras and Law, 2006; Chaloff and Lemaitre, 2009). Iredale (2001) recognized that international students were characterized by their ability "to integrate speedily into the labour market." From a similar point of view, for Japanese firms that intend to hire foreigners to work in their domestic offices, foreigners who have graduated from higher educational institutions in Japan (hereafter, former international students) may compare favorably to foreigners who have immigrated to Japan to work. First, Japanese firms do not have to consider linguistic problems in regard to hiring former international students. Unlike in other developed countries, fluency in the local language is more or less required for people working in Japan. Foreign workers with the skills required by Japanese businesses must take additional language lessons. By contrast, former international students may be expected to have already attained Japanese fluency in studying in Japan.

Second, in hiring international students, Japanese firms need not be anxious about incompatibilities between workers from abroad and the traditional Japanese employment system. The Japanese employment system reflects Japan's traditional culture; workers from abroad may be unable to get accustomed to the employment system and unable to integrate with their Japanese coworkers. However, as with linguistic problems, former international students may be expected to have overcome such cultural problems, having had the opportunity to experience Japanese culture while in school. In addition, under the framework of the simultaneous recruiting of new graduates, which is the main characteristic of the Japanese employment system, Japanese firms can easily hire international students. Thus, the Japanese government and Japanese firms can expect the labor of international students in Japan to be equal to that of Japanese college students.

To encourage international students to work in Japan, the Japanese government

has loosened regulations regarding residential permits and has supported Japanese firms in designating human resource management (HRM) policies in order to utilize their abilities effectively. However, though the view from the demand side has been elucidated, the motivations of former international students who work in Japan are not fully understood and the question whether HRM policies that have been implemented in regard to former international students have been effective remains unclear. What types of HRM policy actually exert an influence and how do implemented policies affect former international students' decision to settle and work in Japan? In this paper, drawing on previous studies on and theories pertaining to return migration, we examine these issues by analyzing quantitative data obtained in a survey of former international students who work in Japan at large-sized firms. The intention to settle and work in Japan is the primary issue pertaining to whether migrants leave their receiving countries; thus, we reviewed theories on return migration in previous empirical studies. This study's analysis of the intention to settle and work in Japan also had implications related to current policy in regard to migrants.

BACKGROUND

Policy regarding foreign workers in Japan

In the latter half of the 1980s, reflecting both economic globalization and the work force shortage, particularly in regard to small- and medium-sized firms, discussions were initiated regarding how workers could be introduced from abroad. The Ministry of Labour published the "Sixth Basic Employment Plan" (*Dairokuji Koyoutaisaku Kihonkeikaku*) in 1988; in the plan, the Japanese government formally indicated that while the entry of as many highly skilled foreign workers would be facilitated as possible, low skilled workers would not be formally accepted. Subsequently, the amendment of the Immigration Reform Act of 1990 eased the obtaining of resident status for people seeking to work in Japan.

Since 1990, the Japanese government has adopted two main policies to facilitate the hiring of workers with specific skills from abroad. First, in the first half of the 2000s, the Japanese government inaugurated policies to attract IT engineers; this was the first effort to attract workers with certain skills from abroad. In "e-Japan Strategy" (*e-Japan Juuten Keikaku*), published in 2001, the Japanese government declared its intention to facilitate the immigration of about 30,000 workers from abroad by 2005 via various efforts, such as through introducing a standard certification system for IT skills in Asian countries. Second, through the 2010s, the Japanese government has promoted a policy to attract global talent from abroad. In 2012, the "Points-based System for Highly Skilled Foreign Professionals" (*Koudo Jinzai Point Sei*) was introduced; under the system, people engaged in (1) advanced academic research, (2) advanced specialized/technical activities, or (3) advanced business management

activities are given preferential immigration treatment. By February 2015, 2,799 foreigners had been given this certification (Prime Minister of Japan and His Cabinet, 2015) and were provided resident status in April 2015.

In addition to these two policies, policies regarding international students as potential highly skilled foreign workers have also been discussed. In 2008, the Japanese government published "A Plan for 300,000 Exchange Students" (*Ryuugakusei Sanjuumannin Keikaku*); the plan aims to increase the number of international students in Japan to 300,000 by 2020. The plan evidences the Japanese government's clear concerns in regard to graduating international students. To encourage international students to work in Japan after graduation, the Japanese government has formulated systems to support their job searches and has passed reforms in regard to resident status.

International students as foreign workers

Japanese immigration policy has considered various types of highly skilled foreign worker; what differences exist between these types warrants examination. In the following, we discuss the actual conditions of former international students working in Japan and contrast them with those of foreigners who have immigrated to work. Unfortunately, because of data limitations, our discussion of these two groups is restricted to inflow conditions into the Japanese labor market.

Figure 1 shows the number of international students who have found jobs in Japan and the number of new arrivals from abroad who have been granted resident status through either "Specialist in Humanities/International Services" and "Engineer" visas, the two main visas for workers from abroad. As shown in Figure 1, until 2008, the number of new arrivals from abroad was much larger than that of newly hired international students. However, from 2008–2009, during the world economic crisis, the number of new arrivals decreased against the number of newly hired international students. Since 2009, the numbers of new arrivals and newly hired international students have been almost equal.

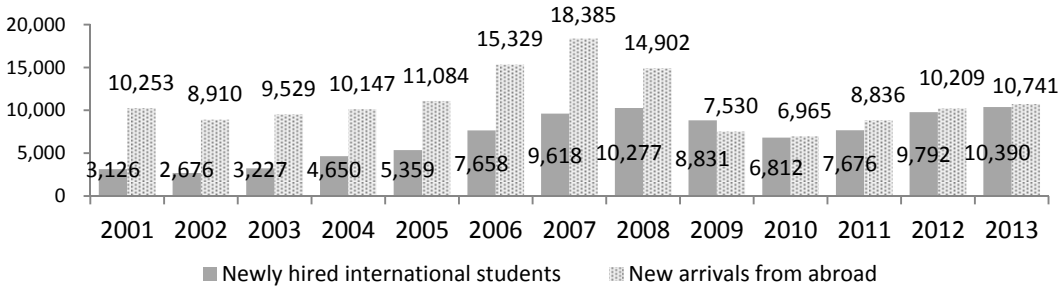

Figure 1: Numbers of newly hired international students and new arrivals from abroad ("Specialist in Humanities/International Services" and "Engineer")

Source: Ministry of Justice

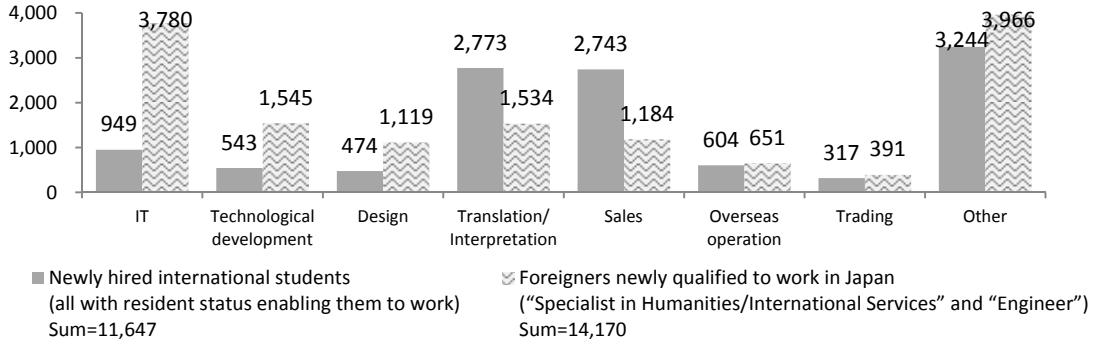

Figure 2: Numbers of newly hired international students (all with resident status enabling them to work) and foreigners newly qualified to work in Japan (with the "Specialist in Humanities/International Services" and "Engineer" visas) with their respective their occupation in 2013

Source: Ministry of Justice

However, though equivalent in number, new arrivals from abroad and newly hired international students engage in the Japanese labor market in different roles. Figure 2 shows the numbers of newly hired international students (all of whom are permitted to work in Japan based on their resident status) and of foreigners newly qualified to work in Japan (with the "Specialist in Humanities/International Services" and "Engineer" visas), as well as their respective occupations, in 2013. Exact comparisons cannot be made because of differences in resident status; however, the characteristics of these two groups can be roughly understood. As shown in Figure 2, newly hired international students tend to obtain jobs related to translation/interpretation and sales. Foreigners newly qualified to work in Japan tend to obtain jobs related to IT, technological development, and design. In other words, in contrast to highly skilled workers who have newly arrived from abroad, international students obtain jobs that require linguistic abilities and/or an understanding of Japanese business culture. Our findings are not restricted in terms of migrants' nationality; however, the trends we discovered were confirmed in Liu's (2009) qualitative study of former international students from China working in Japan. Liu concluded that because of the transnational economy, former international students from China are able to utilize the linguistic, cultural, and social skills they accumulated during school at the Japanese firms they work at.[1]

[1] International students in Japan have played a definite role in the Japanese labor market (Liu, 2009). In the latter half of the 1980s, the increasing number of illegal overstayers was problematic (Morita and Sassen, 1994); a certain number of these overstayers were student visa holders. Although the number of illegal overstayers has generally decreased since the mid-1990s, it is still a concern in regard to immigration control policy in Japan. In addition, many international students in Japan work as unskilled labor in the service industry while in school. According to a survey of privately financed

In sum, although former international students and foreigners who have directly immigrated are almost equal in number, obvious differences exist in regard to the jobs they engage in.

Japanese employment system and highly skilled foreign workers

The Japanese government has engaged in efforts to attract highly skilled foreign workers; however, such workers still account for a limited share of the Japanese labor market. Previous studies have suggested that the uniqueness of the Japanese employment and management system is an obstacle (e.g. Kajita, 1995; Kamibayashi, 2006; Tsukazaki, 2008; Oishi, 2012). The traditional Japanese HRM system emerged from an internal labor market in which both employers and employees expect long-term employment relations. "Late selection" (Koike, 1996) has been considered crucial in retaining highly skilled foreign workers. Under the "late selection" system, employees are promoted simultaneously and are treated similarly for 10 or more years after being hired en masse after graduation. This promotion system enables employees to compete for an extended period of time without experiencing disappointment and to maintain their motivation in regard to skills development (Sato, 1997). However, this delayed promotion system might also be a negative for highly skilled foreign workers. Oishi (2012) investigated why highly skilled migrants find Japan unattractive. Through in-depth interviews with workers living in the Tokyo metropolitan area, she found that highly skilled migrants viewed the Japanese employment system as an obstacle to continuing to work in Japan: such migrants saw the Japanese employment system as being unable to present clear paths for promotion or career development. In addition, such migrants did not feel integrated in their workplaces and felt stereotyped as foreigners; women, in particular, were dissatisfied with their long working hours and with sexual discrimination.

The Japanese government has recognized these problems and has recommended that firms improve working environments. For example, in 2011, the Ministry of Health, Labour and Welfare released "Guidelines for Employers to Adequately Deal with in Regard to Improving Management for Employed Foreign Workers" (*Gaikokujin Roudoushano Koyoukanrino Kaizentounikanshite Jigyounushiga*

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international students conducted by the Japan Student Services Organization (JASSO) in 2014, 75.3% of respondents had part-time jobs; 48.7% and 24.7% of those who had part-time jobs worked in the food industry and in retail (for example, at convenience stores), respectively (JASSO, 2014). Though international students working as unskilled labor is not a problem in and of itself, according to Ministry of Health, Labour and Welfare data, 102,534 international students had part-time jobs in 2014. This number is almost as large as the number of technical intern trainees (136,608), who are often denounced as unskilled migrant laborers.

Tekisetsuni Taishosurutameno Shishin). More specific to highly skilled foreign workers, the "Practical Manual for Utilizing Highly Skilled Foreign Workers" (*Koudogaikokujinzai Katsuyounotameno Jissen Manyuaru*) was compiled in 2014 by the Ministry of Health, Labour and Welfare (Fujitsu Soken, 2014). This manual summarizes the differences in perception between Japanese firms and highly skilled foreign workers in the following aspects; Utilization and assignments, Assessment, Career development, and Work environments, in regard to HRM activities (examples are shown in Table 1).

Table 1: Assumed conflicts between Japanese firms and highly skilled foreign workers from the HRM perspective.

		Perceptions	
		Firms	Highly skilled foreign workers
HRM	Utilization and assignments	Same as Japanese	Utilization of foreigners' characteristics and linguistic abilities
	Assessment	Introduction of an evaluation system emphasizing performance and results	Unclear basis for evaluation
	Career development	Long-term perspectives premised on long-term employment	Enablement of career development in the short term
	Work environments	Overtime work	Work-life balance

Source: Fujitsu Soken (2014)

The extent to which these problems have occurred in relation to former international students warrants examination. As aforementioned, the Japanese government and Japanese firms may see former international students as suitable for employment due to their adaptation with respect to linguistic and cultural aspects. A survey of Japanese private-sector companies conducted by the Japanese Institute for Labour Policy and Training (JILPT) in 2007 demonstrated that, compared with firms that have not employed international students, firms that have employed international students tend to believe that such students are loyal, cooperative, and suited to Japanese employment practices. At same time, characteristics that Oishi (2012) found in investigating highly skilled migrants also appeared in relation to former international students—compared with firms that have not employed international students, firms that have employed international students tend to believe that they are "strongly self-assertive" and have a "clear career awareness" (Gunji, 2010).

RESEARCH QUESTION

Effects of monetary rewards

In the previous chapter, the unique features of former international students were quantitatively and qualitatively described in comparison to the features of highly qualified migrants who have arrived in Japan to work; moreover, obstacles to working

in Japan arising from the characteristics of Japanese employment system were suggested. From these backgrounds, this chapter presents the research questions that were examined; these questions were based on a consideration of previous studies on return migration. We focused in particular on HRM activities engaged in by firms at which former international students work.

In regard to HRM, we first focused on monetary rewards. Monetary rewards are the basic factor mediating the relationship between employer and employee and have frequently been discussed in studies on return migration that have considered bilateral mobility from receiving countries to sending countries.[2] In previous research, there have been two controversial interpretations of the effects of monetary rewards; these interpretations have been based on neoclassical economics (NE) and the new economics of labor migration (NELM) (e.g. Cassarino, 2004). The theory of NE is premised on the utility of individuals; from a NE perspective, migrants' intention is to maximize their utility in the receiving countries to which they migrate and the return event, should it occur, is regarded as a "failure"—in other words, those who earn less in the receiving country are likely to return. By contrast, in the NELM theory formulated by Stark (1991), migrants' households in the sending country are taken up as the analytical unit. In this theory, it is assumed that migrants engage in risk-hedging behaviors on behalf of their own families; their motivation is to attain target earnings sufficient to ensure their families can live affluent lives in the sending country. In this conception, migrants seek to earn enough money for their households and the return event is regarded as a "success"; in other words, those who earn more in the receiving country are likely to return. Certain studies have expanded the framework to other factors and have subjected these theories to empirical examination.[3]

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[2] To understand the mechanisms involved in return migration, scholars have mainly investigated economic activities in the context of wage differentials between countries—typically, earning and consuming. However, among such empirical studies, the results have not been uniform. For example, Borjas (1989) analyzed the Survey of Natural and Social Scientist and Engineers and found that low wages among migrants are a factor for attrition partly caused by emigration; consequently, Borjas argued that emigration can be characterized by poor labor market outcomes (Borjas, 1989: 36). By contrast, Dustman (2003) analyzed German Socio-Economic Panel data and empirically demonstrated that the relationship between migrants' wage and duration in the receiving country takes an inverse U-shape and that the desire to stay in the receiving country (measured in years) weakens in accordance with wage increases.

[3] Empirical examinations have concluded that neither NE nor NELM is fully applicable. Constant and Massey (2002) analyzed data on German guest workers surveyed in the GSOEP and examined the effects of human capital, work effort, attachment to employment, socioeconomic achievement, attachment to Germany, and attachment to

These two theories are in opposition regarding the effects of increased monetary rewards on the motivation among migrants to stay in the receiving country; thus, they predict different settlement outcomes. NE theory indicates that monetary increases encourage migrants to stay in the receiving country because the receiving country has enabled them to realize higher levels of utility and a higher economic status. The NELM theory, on the other hand, indicates that monetary increases hinder settlement because migrants' aim is to ensure that their families can live affluent lives in their sending countries.

These two theories provide clear-cut images of "settlement" migration; however, neither of these theories can be straightforwardly applied to interpreting former international students. Previous studies that have focused on the sending of remittances, the crucial behavior in NELM theory (Stark, 1991), have found that highly skilled migrants send less in remittances compared with unskilled migrants because of their relatively higher social status in the sending country and their longer periods of residence in the receiving country (Faini, 2007; Niimi, et al., 2010). This fact may suggest that highly skilled migrants enjoy living permanently in their receiving countries because they are able to consume and save at an affluent level, in line with NE theory. However, consumption and saving are not necessarily done in the receiving country. Mahmud (2014) conducted a case study of international students from Bangladesh in Japan and found that such international students first sent money that they earned by working part-time jobs to their families in Bangladesh, and subsequently, spent money on their own future careers and consumption in Bangladesh. It could be inferred from Mahmud (2014) that former international students are a type of migrant described by NELM theory, as their consumption is done in the sending country;

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origin. According to the results of their analysis, the motivations of guest workers in German are not uniform; there are heterogeneous groups, each of whose motivations are concordant with either the NE or NELM theories. Following Constant and Massey (2002), de Haas et al. (2014) conducted an analysis of Moroccan migrants that introduced other independent variables. Using cross-sectional data on Moroccan migrants in EU countries, they found that neither the NE nor NELM theories were perfectly supported. Other empirical studies have investigated return migration and return intentions among migrants rather than attempting to confirm which theories are correct. Carling and Pettersen (2014) examined the return intentions among migrants in Norway with a particular focus on the effects of the degree of integration (attachment to the host country) and transnationalism (attachment to the country of origin). Agadjanian et al. (2014) examined return intentions among female migrants from Central Asia in Moscow with a focus on economic incorporation (e.g., monthly income), civil inclusion (e.g., resident status), and social ties (e.g., whether they had a spouse in the host country).

however, his study was restricted to international students from Bangladesh who had not yet graduated. Whether former international students, in a general sense, act in line with Mahmud's (2014) findings remains unclear. Thus, the relationship between former international students' intentions to settle and the monetary rewards they receive from Japanese firms remains an open question.

Effects of work, career, and living conditions

Second, we also investigated other HRM activities without a direct link to monetary rewards. Several studies have suggested the significance of non-pecuniary factors in relation to migration among highly skilled foreign workers. Among non-pecuniary factors, work environments warrant investigation. Chen and Yang (1998) indicated that, in addition to economic interaction, educational articulation, and differences in living conditions, opportunities for professional employment are a crucial factor in professional migration to the United States. Murakami (2009) revealed that for foreign scientists and engineers, some key incentives to continuing to work in Japan are related to the favorability of the technological environment: these foreign scientists and engineers indicated that Japan's working environment enabled them to acquire cutting-age knowledge and that generous environment, such as budget, equipment and facilities, enabled them to improve their work performance. Receiving country employers are responsible for the management of highly skilled foreign workers at work. Whether highly skilled workers are able to perform their abilities in the receiving country is dependent on receiving country employers. How employers manage highly skilled foreign workers is a critical question that must be posed in migration studies; this question can be clarified by investigating the kinds of HRM activity firms engage in.[4]

The investigation of highly skilled foreign workers in Japan, in addition to the work environment, requires a broader range of aspects, such as career development and work-life balance, to be examined (Oishi 2012). As shown in the previous chapter, firms and highly skilled foreign workers differ in their perceptions of utilization, assessment, career development, and work environments; thus, Japanese firms are encouraged to consider the introduction of HRM activities that could support highly skilled foreign workers.

It is unclear how HRM activities relate to the decision to settle and work in Japan among former international students. As mentioned in the previous chapter, there are two different views on whether there is an advantage to employing former international students: firms that have hired former international students have indicated

[4] This statement follows Scott (2013), who pointed out that the role of employers has rarely been examined in previous studies on migration. He advocated employer-based analysis. An attempt to analyze HRM activities can be interpreted as to elicit the role played by employers.

that former international students are able to accord with the Japanese traditional employment system but that they are subjectively not always compatible with it. These two characteristics raise the question of whether former international students are similar in temper to highly skilled foreign workers, who may be presumed not to accord with traditional Japanese HRM activities.

There is another question in addition to that of settlement. It may be supposed that highly skilled migrants are motivated to become "professionals" and that they will decide to stay at those firms that enable them to do so. However, this inference does not apply if becoming professional is not migrants' primary motivation. Zweig et al. (2006) conducted an empirical investigation of Chinese entrepreneurs and found that acquiring new technology for China is one factor related to return; they argued that by introducing new technology into the local Chinese market, such entrepreneurs have the opportunity to attain an advantageous local market position. Therefore, in regard to settlement, providing a conducive work environment could have one of two consequences: by satisfying the motivation to become "professional," it could encourage migrants to stay, or it could accelerate migrants' return by enabling them to acquire new knowledge through work experience.[5] In addition to work environments, it is also unclear how HRM activities in regard to, for example, career development and work-life balance, relate to the decision to settle and work in Japan.

In line with the above discussion, this paper investigates how a broad range of HRM activities, independent of monetary rewards, relates to former international students' decision to settle and work in Japan.

DATA, VARIABLES, AND METHOD

Data

The analysis draws on data from "Survey on the Employment of International Students at Japanese Firms" (*Nihon Kigyou ni Okeru Ryuugakusei no Shuurou ni Kansuru Chousa*), which was conducted by the Japan Institute for Labour Policy and Training (JILPT) in 2008 (JILPT, 2009). Both firms and former international students who graduated from Japanese educational institutes and work at firms were surveyed; hereafter, the former and latter are referred to as the "firm survey" and "international student survey." For the firm survey, a questionnaire was mailed to 10,349 firms all of which have more than 300 employees[6]; with the exception of firms in several industries.

[5] In migration, initial intentions are extremely significant. Güngör and Tansel (2014) conducted a quantitative study on Turkish scholars and professionals in four Western countries (the US, Canada, Germany, and the UK) and found that their initial intentions (at the beginning of their stay abroad) were most profoundly associated with the (current) intention to return.

[6] The number of large Japanese companies in the private sector, excluding primary

Responses were collected from 3,018 firms.

For the international student survey, questionnaires designed to collect individual-level information were enclosed with the firm survey. Each firm distributed a maximum of six questionnaires to former international students who were selected (when available) by the person responsible for personnel management. The exact size of the former international student population is unknown. However, responses were obtained from 902 individuals. Responses from former international students working at the same firm were considered a cluster; hence the clustered data were analyzed. Responses with missing information in regard to relevant variables were omitted, resulting in 513 cases for analysis.

Dependent variable: Intention to settle and work in Japan

The dependent variable, the intention to settle and work in Japan, was measured according to answers to the following question on the international student survey: "Do you want to continue working in Japan in the future?" Respondents were asked to choose one item among the following: (1) "I want to continue working in Japan at my current firm," (2) "I want to continue working in Japan but I haven't decided whether I want to continue working at my current firm," (3) "I want to go back to my home country and work there in the future," and (4) "I want to work in another country that isn't Japan or my home country." In our analysis, we adopted a binary variable: responses to the first and second items were merged into "1," "has the intention to settle and work in Japan"; answers to the remaining items were denoted by "0," "does not have the intention to settle and work in Japan."

Independent variables

Monetary rewards

To clarify the effects of monetary rewards on former international students' decision to settle and work in Japan, we analyzed monetary rewards based on yearly wage. The survey asked respondents, "How much money did you earn in the last year?"[7], and asked them to choose one item among 12, such as "between 3 and 4 million yen." In our analysis, yearly wage was treated as a continuous variable by taking mid-point values.

HRM policies

We also aimed to clarify the effects of a broad range of HRM activities on former international students' decision to settle and work in Japan. Respondents for the

industries, was 11,630 in 2009 (The Small and Medium Enterprise Agency, 2011). Thus, this survey covered nearly all large firms in Japan.

[7] Respondents that had been employed for less than a year were instructed to answer according to their estimated yearly wage.

firm survey were asked, "Which of the following kinds of HRM policy has your company adopted to facilitate the settlement and/or active participation of former international students?"[8] The nine items given are listed as follows:

(1) Improve Japanese employees' understanding of other cultures
(2) Prepare various courses enabling career building in a short time period
(3) Assignments & staff development utilizing foreigners' characteristics & language abilities
(4) Assignments & fostering utilizing expertise learned in school
(5) Clarify work allocation
(6) Build evaluation & pay systems emphasizing performance & results
(7) Provide training for foreigners
(8) Develop organization in company which can advise, including on lifestyle aspects
(9) Prepare various courses enabling work/private life balance

Roughly speaking, these nine items fall into four types: utilization and assignments, assessment, career development, and work environment. Among the nine HRM policies, (3) and (4) were classified as utilization and assignments; (5) and (6) were classified as assessment; (2) and (7) were classified as career development; and (1), (8), and (9) were classified as work environment.

The same nine items were repeated on the international student survey. Respondents were asked the following question: "In your experience, which of the following HRM policies do you think Japanese firms should implement to facilitate the settlement and active participation of international students at Japanese firms?" The question did not explicitly ask respondents whether their firms needed to implement particular HRM activities; however, respondents' answers were assumed to reflect the reality of their situation.

To use the independent variables to test the effects of HRM activities, we assumed that employees are affected by the HRM policies their firms implement. If employees indicated that their firms should implement a particular HRM policy, they felt deprived. However, if employees indicated that they did not feel that it was necessary for their firms to implement a particular HRM policy, it may be inferred that regardless of whether their firms implemented that policy, their feelings would not change. Thus, we necessarily considered the policies firms implemented and the demands of former international students in combination in order to examine the effects of HRM policies. Three categories were used to investigate HRM activities: "not fulfilled" referred to cases in which former international students indicated that their firms should implement policies that were not then being implemented. "Fulfilled"

[8] These items were translated based on Gunji (2010).

referred to cases in which former international students indicated that their firms should implement policies that were in fact already being implemented. “Irrelevant” referred to cases in which former international students indicated that policies were unnecessary, meaning that their feelings would go unchanged regardless of whether their firms implemented them.

Control variables

Demographic characteristics, former international students’ socioeconomic status, and firm characteristics were the control variables. Details pertaining to the control variables are shown in Table 2.

Table 2: Definitions for the control variables

Variable	Definition
Age	
Gender	Male, Female（ref）
Origin country	China, Korea, Taiwan, other asian region, other country(ref)
Education level	Bachelor, Master/Doctor, other(ref)
Academic major	Liberal arts(humanities, social science, education, arts), Sciecne（science, engineer, agriculture, medicine/dentistry/pharmacy. ref), Other
(Subjective) Japanese proficiency	Numeric variable indicating self-evaluation on own ability(proficiency) in Japanese. This variable ranges from "As fluent as mother tongue"= 5 to "While the literacy in Japanese are not enough, I can do usual conversation in Japanese a little"＝1
Status of residence	Status based on labor(Professor, Investor/Business Manager, Researcher, Instructor, Engineer(IT), Engineer(except for IT), Specialist in Humanities/International Services, Intracompany Transferee, Skilled Labor), other status (Spouse or Child of Japanese National, Long-Term Resident, else. ref)
Spouse	Spouse of Japanese, single/spouse of non-Japanese（ref）
Type of residence	Own house, not own house（ref）
Type of employment	Regular employee, contract employee(ref)
Managerial position	Yes, no (ref)
Experience with job change	Yes, no (ref)
Years at current firm	
Misrecognition of current firm information	This was a binary variable indicating the existence of discordance in regard to firm size between the firm's response and the former international student's response; "Yes" if any and "No" (ref) otherwise.
Overtime work	Respondents were asked regarding the frequency with which they had to work overtime and over holidays; "hardly," "sometimes," and "frequently" were denoted as "0," "1," and "2," respectively.
Satisfaction with current firm	Satisfied（satisfied, rather satisfied), dissatisfied（dissatisfied, rather dissatisfied [ref]）
Firm size [a]	More than 1,000 employees, less than 1,000 employees (ref)
First year of employment of international student	Before 2000, after 2000 (ref)
Connection with foreign firms	Numeric variable indicating the frequency with which respondents dealt with foreign firms; "no connection," "hardly," "sometimes," and "frequent" were denoted as "0," "1," "2," and "3," respectively.
Percentage of foreign workers	
Managerial position	Binary variable indicating whether the respondent had a managerial position; "Yes" if so and "No" (ref) otherwise.
Overseas expansion	Yes（local subsidiary/overseas branch, overseas transaction), No（ref）

a) Both surveys inquired regarding firm size. Firm sizes were based on results from the firm survey.

Analytical strategy and models

We used binominal regression models to analyze the relationships between former international students' intention to settle and work in Japan and HRM activities. Three models were examined. Model 1 and Model 2 added yearly wage and HRM variables, respectively, to a baseline model that included only control variables. Model 3 was a full model in which both yearly wage and HRM variables were added to the baseline model.

Our dataset comprised cluster data obtained from a survey of former international students and firms. Consequently, the data violated the standard assumptions for maximum-likelihood estimation. Instead, we adopted the generalized-estimation equation (e.g. Liang and Zeger, 1986) and the Huber-White variance estimator to evaluate the standard error of the coefficients.

Descriptive statistics

Table 3 shows descriptive statistics for all of the variables. It is noteworthy that the proportion of former international students who are motivated to move away from Japan is not small; about 35% of former international students indicated that they were motivated to work in countries that were not Japan in the future.

Regarding yearly wage, former international students in our sample earned 3,798 thousand JPY in the previous year (2007) on average. This amount seems almost same as that of Japanese nationals. The Basic Survey on Wage Structure (BSWS) conducted by the Ministry of Health, Labour and Welfare in 2008 reported that Japanese workers, on average, earned 299.1 thousand JPY per month and were expected to earn from 3,589.2 thousand JPY (299.1 times 12 months) to 4,187.4 thousand JPY (299.1 times 14 months; the two month addition reflects bonuses) per year. We conducted an auxiliary analysis in which we matched our sample to the result in the BSWS in terms of age, sex, educational level, firm size, industry, and length of service at current firm; the analysis revealed that a typical Japanese worker with the same background and work conditions as a former international student earns about 3,996 thousand JPY a year.

Regarding the HRM variables, with the exception of "Improve Japanese employees' understanding of other cultures," the category of "Irrelevant" accounted for the highest ratio for all of the remaining eight HRM variables. A substantial portion of former international students felt "not fulfilled" in regard to "Improve Japanese employees' understanding of other cultures" (53.6%) and "Provide training for foreigners" (37.8%); the percentages of those who were categorized as "not fulfilled" exceeded those who were categorized as of "fulfilled" for all types of policy except for "Assignments & staff development utilizing foreigners' characteristics & language abilities." In other words, it was relatively common for former international students to want their firms to implement HRM policies that their firms were not implementing.

Table 3: Descriptive statistics

	Mean	S.D.
Intention to stay		
Intending to stay in Japan	0.649	0.477
Not intending to stay in Japan	0.351	0.477
Age	30.869	5.758
Sex		
Male	0.581	0.494
Female	0.419	0.493
Origin country		
China	0.778	0.416
South Korea	0.096	0.294
Taiwan	0.033	0.179
Other country in Asia	0.060	0.239
Other country	0.033	0.179
Education level		
Bachelor	0.404	0.491
Master's/Doctorate	0.540	0.499
Other country	0.057	0.231
Academic major		
Liberal arts	0.569	0.496
Science	0.388	0.487
Other	0.043	0.203
Japanese proficiency	4.314	0.610
Resident status		
Status based on labor	0.865	0.342
Other status	0.135	0.342
Spouse		
Spouse of Japanese	0.068	0.252
Single/spouse of non-Japanese	0.932	0.252
Type of residence		
Home ownership	0.082	0.274
No home ownership	0.918	0.274
Type of employment		
Regular employee	0.930	0.256
Contract employee	0.070	0.256
Managerial position		
Yes	0.105	0.307
No	0.895	0.307
Experience with job change		
Yes	0.129	0.335
No	0.871	0.335
Years in current firm	2.716	2.795
Misrecognition of current firm information		
Yes	0.838	0.369
No	0.162	0.369
Overtime work	1.752	1.382
Satisfaction with current firm		
Satisfied	0.883	0.322
Dissatisfied	0.117	0.322
Firm size		
More than 1,000 employees	0.476	0.500
Less than 1,000 employees	0.524	0.500

	Mean	S.D.
First year of employment of international student		
Before 2000	0.483	0.500
After 2000	0.517	0.500
Connection with foreign firms	1.388	1.343
Managerial position		
Yes	0.460	0.499
No	0.540	0.499
Ratio of foreign worker	0.544	0.744
Overseas expansion		
Yes	0.867	0.339
No	0.133	0.339
Yearly wage (10 thousand JPY)	379.825	206.788
Improve Japanese employees' understanding of other cultures		
Not fulfilled	0.536	0.499
Fulfilled	0.119	0.324
Irrelevance	0.345	0.475
Prepare various courses enabling career building in a short time period		
Not fulfilled	0.306	0.461
Fulfilled	0.006	0.076
Irrelevance	0.688	0.463
Assignments & staff development utilizing foreigners' characteristics & language abilities		
Not fulfilled	0.294	0.456
Fulfilled	0.306	0.461
Irrelevance	0.400	0.490
Assignments & fostering utilizing expertise learned in school		
Not fulfilled	0.088	0.283
Fulfilled	0.082	0.274
Irrelevance	0.830	0.375
Clarify work allocation		
Not fulfilled	0.164	0.370
Fulfilled	0.047	0.211
Irrelevance	0.789	0.408
Build evaluation & pay systems emphasizing performance & results		
Not fulfilled	0.306	0.461
Fulfilled	0.070	0.256
Irrelevance	0.624	0.484
Provide training for foreigners		
Not fulfilled	0.378	0.485
Fulfilled	0.025	0.157
Irrelevance	0.596	0.491
Develop organization in company which can advise, including on lifestyle aspects		
Not fulfilled	0.248	0.432
Fulfilled	0.096	0.294
Irrelevance	0.657	0.475
Prepare various courses enabling work/private life balance		
Not fulfilled	0.240	0.427
Fulfilled	0.004	0.062
Irrelevance	0.756	0.429

REGRESSION RESULTS

Table 4 shows the estimation results for Models 1, 2, and 3. The estimation results for the control variables are omitted from the table for simplicity, but these are available in the Appendix.

Table 4: Binominal regression results for key variables

	Model 1			Model 2			Model 3		
Variable	Coefficient	S.E.	P-value	Coefficient	S.E.	P-value	Coefficient	S.E.	P-value
Intercept	-2.229	1.563	0.154	-1.905	1.647	0.247	-2.049	1.660	0.217
Monetary rewards									
Yearly wage (10 thousand yen)	-0.002	0.001	0.020				-0.002	0.001	0.016
HRM (ref: Irrelevance)									
Improve Japanese employees' understanding of other cultures									
Not fulfilled				0.008	0.228	0.972	0.065	0.235	0.782
Fulfilled				0.441	0.361	0.222	0.379	0.363	0.297
Prepare various courses enabling career building in a short time period									
Not fulfilled				-0.530	0.248	0.033	-0.579	0.251	0.021
Fulfilled				-1.725	1.372	0.209	-1.802	1.355	0.183
Assignments & staff development utilizing foreigners' characteristics & language abilities									
Not fulfilled				-0.413	0.266	0.120	-0.467	0.272	0.086
Fulfilled				-0.289	0.242	0.232	-0.282	0.245	0.250
Assignments & fostering utilizing expertise learned in school									
Not fulfilled				0.887	0.429	0.039	0.888	0.418	0.033
Fulfilled				0.340	0.417	0.414	0.344	0.414	0.406
Clarify work allocation									
Not fulfilled				0.397	0.282	0.159	0.386	0.282	0.170
Fulfilled				-0.221	0.604	0.715	-0.186	0.588	0.752
Build evaluation & pay systems emphasizing performance & results									
Not fulfilled				0.336	0.261	0.198	0.365	0.266	0.170
Fulfilled				0.004	0.415	0.992	0.052	0.420	0.902
Provide training for foreigners									
Not fulfilled				0.100	0.241	0.678	0.119	0.243	0.626
Fulfilled				0.381	0.480	0.428	0.470	0.495	0.342
Develop organization in company which can advise, including on lifestyle aspects									
Not fulfilled				0.235	0.256	0.359	0.166	0.265	0.531
Fulfilled				-0.440	0.386	0.254	-0.465	0.389	0.232
Prepare various courses enabling work/private life balance									
Not fulfilled				-0.217	0.253	0.392	-0.189	0.255	0.460
Fulfilled				-0.609	0.820	0.458	-0.918	0.815	0.260

The coefficient for yearly wage in Model 1 showed a negative association with the motivation to settle and work in Japan. If the yearly wage of former international students increased up to the average of Japanese worker, say, by approximately 198 thousand JPY, the odds of having the intention to settle and work in Japan decreased by 3.5%. The negative association shown in Model 1 was almost to the same degree as that observed in Model 3, in which other HRM variables were introduced.

In addition to results pertaining to yearly wage, Table 4 shows other remarkable findings concerning HRM activities. Among the nine HRM variables, Model 2 indicated that two HRM variables, "Prepare various courses enabling career

building in a short time period" and "Assignments & fostering utilizing expertise learned in school," were significantly related to former international students' intention to settle in Japan; Model 3 additionally indicated that "Assignments & staff development utilizing foreigners' characteristics & language abilities" was significantly related with this motivation. To assess the effects of HRM activities independent of yearly wage, we focused on the estimation results of Model 3.[9]

Findings were obtained based on the results of Model 3 and were presented as follows in relation to their domain, when, and how. The first group of findings relates to which domains of HRM activity are associated with former international students' intention to settle and work in Japan. As stated, HRM activities can be grouped into domains based on values: utilization and assignments, assessment, career development, or work environments. Based on this classification, the HRM variables that emerged as significant were in the domains of career development ("Prepare various courses enabling career building in a short time period")[10] and utilization and assignments ("Assignments & staff development utilizing foreigners' characteristics & language

[9] One interpretation as to why the coefficient of "Assignments & staff development utilizing foreigners' characteristics & language abilities" was significant in Model 3, which took into account both yearly wage and HRM variables, is that foreign characteristics and language are linked to wages and mediated by occupation. As an auxiliary analysis, we investigated the occupations former international students engaged in using the categorical variables of "office work," "professional work," "technical work," "clerical work," and "other," and ran an OLS regression in which the (log) yearly wage was the dependent variable and the categorical variables for occupation were the independent variables (with effect coding) in order to check wage disparities stemming from occupational differences. The OLS results showed that compared to the grand mean, only "office work" was significantly indicated as having a low wage. In addition, we cross-tabulated "Assignments & staff development utilizing foreigners' characteristics & language abilities" and the variable of occupation (details omitted) and found that firms that had adopted "Assignments & staff development utilizing foreigners' characteristics & language abilities" tended to hire former international student as office workers. Taken together, we can surmise that the reason why the coefficient of "Assignments & staff development utilizing foreigners' characteristics & language abilities" become significant in Model 3 is that firms that have introduced "Assignments & staff development utilizing foreigners' characteristics & language abilities" hire the former international student as office workers, who have low wages relative to other types of occupation. Because of this association between yearly wage and HRM implementation, we focused on the result of Model 3 to assess the effect of HRM activities independent from that of yearly wage.

[10] While "Provide training for foreigners" also fell under the category of career development, this HRM activity was not related to the motivation of former international students. We surmised that one reason for this was that the implementation of HRM activities to facilitate assimilation was not important for former international students because they had already become familiar with Japanese customs while at school.

abilities" and "Assignments & fostering utilizing expertise learned in school"). HRM variables classified in the domains of work environment and assessment were not associated with former international students' intentions.

The second group of findings pertains to when HRM activities are associated with the intention of former international students to settle and work in Japan. Regarding the aforementioned three HRM activities, the coefficients for "Fulfilled" were not found to be significant, whereas those of "Not fulfilled" were generally significant. In other words, when former international students' demands regarding the introduction of HRM activities had been satisfied, this had no effect on their intention to settle and work in Japan. However, when former international students' demands regarding the introduction of HRM activities were not satisfied, this had an effect on their intention to settle and work in Japan.

The third group of findings is related to how HRM activities are associated with the intention of former international students to settle and work in Japan. As aforementioned, dissatisfaction in regard to HRM policy among former international students can change their motivation; however, dissatisfaction can change motivation in different ways and different directions. Compared with those who did not demand, if former international students felt deprived in regard to "Prepare various courses enabling career building in a short time period" and "Assignments & staff development utilizing foreigners' characteristics & language abilities," the odds of having an intention to settle and work in Japan decrease by 44% or by 37%, respectively. Compared to those who did not demand, if former international students indicated that their firms should implement "Assignments & fostering utilizing expertise learned in school," and whose firms did not implement such policies, the odds of having an intention to settle and work in Japan adversely increase by 143%.

In sum, this analysis yielded the following the findings concerning HRM activities. Among various HRM activities, the domains of career development and utilization and assignment are important. In particular, three types of HRM activity ("Prepare various courses enabling career building in a short time period," "Assignments & staff development utilizing foreigners' characteristics & language abilities," and "Assignments & fostering utilizing expertise learned in school") had a striking relationship with whether former international students who felt deprived had the intention to settle and work in Japan. Being deprived of the former two activities contributed to former international students' intention to leave Japan, whereas being deprived of the last activity, in contrast, contributed to the intention to settle and work in Japan.

DISCUSSION AND CONCLUSIONS

Recently, the Japanese government has attempted to facilitate the employment of highly skilled foreign workers, including former international students, in Japan; it has encouraged firms to improve work environments. While the government's position in relation to the acceptance of highly skilled foreign workers is explicit, motivations among former international students working in Japan remain somewhat unclear. Can Japanese firms facilitate former international students to settle and work in Japan? Referring to previous studies on return migration, this paper aimed to understand former international students' intention to settle and work in Japan with a focus on the effects of HRM policies that have been recommended for implementation in regard to highly skilled foreign workers. We analyzed a dataset obtained from a quantitative survey conducted by the JILPT in 2008; we present the following implications.

Interpreting motivations

Pecuniary factors are key to determine motivations among migrants who leave receiving countries. In this paper, we regard monetary rewards as an important and basic incentive for employees that work at firms. Previous studies on return migration have focused on the outcomes of migrants' economic activities in receiving countries and how these outcomes affect the decision to return. Our analysis clarified that among former international students who earn lower wages, intentions to settle and work in Japan are stronger. Interpreting this through theories on return migration, it may be surmised that former international students with the intention to leave Japan see their departure as an economic "success"; their motivation may be seen as in line with the NELM—in other words, they were target earners.

However, viewing former international students as target earners without an interest in leading affluent working lives in their receiving countries is one-sided. Considering the effects of control variables (see Appendix), former international students can also be grasped within the framework of NE. The results of some control variables indicated that those who were regular employee (compared to contract employee), longer belonging in current firms, and doing overtime work frequently were significantly more likely to have the intention to settle and work in Japan. This was for the following reasons: regular employees have secure employment; by working at the same company for a longer period of time, firm-specific human capital accumulates; and doing overtime work is a measure of the degree of a worker's contribution to their current firm. We argue that among those who acquire stable employment and enough firm-specific human capital and have a propensity toward devotion, the intention to settle and work in Japan is stronger. Thus, former international students exhibit certain aspects of NE as well. Hence, it is safe to conclude that the motivations of former international students can be interpreted using a mix of NE and NELM, as Constant and

Massey (2002) and de Haas et al. (2014) have concluded.

HRM activities and the intention to settle and work in Japan

How do firms' efforts to improve work situations affect the intention of former international students to settle and work in Japan? We examined this question by analyzing responses to nine HRM policies. From the empirical results, we found that among former international students, being "not fulfilled" in regard to "Prepare various courses enabling career building in a short time period" and "Assignments & staff development utilizing foreigners' characteristics & language abilities" significantly weakened the intention to settle and work in Japan. The negative effect of deprivation on "Prepare various courses enabling career building in a short time period" indicated that permanent long-term employment, which is one of the main features of the Japanese employment system, is not necessarily favorable for former international students. Oishi (2012) found that highly skilled migrants felt Japan unattractive because of the unclear promotion system and lack of career development opportunities at Japanese firms. Our results similarly indicated that there is a problem with the traditional Japanese employment system; those who would like to build careers by themselves find long-term employment relations and firm-led career development irritating.

The negative effect of deprivation in "Assignments & staff development utilizing foreigners' characteristics & language abilities" indicates that dissatisfaction in regard to a lack of not opportunities to demonstrate their abilities as foreigners results in the intention to leave Japan. Some researchers have indicated that international students are seen as workers who are able to connect receiving countries and sending countries; this is also true in Japan. Liu (2009) found that former international students from China expected to take on a certain role as employees who can serve as bridges between Japanese firms and their counterparts in China. Our results indicate that, even when former international students are similar to Japanese workers in terms of their Japanese fluency and profound understanding of culture and customs, the opportunity to perform as foreigners at Japanese firms is still an important concern for them. Particularly at the large-sized firms the respondents worked at, these concerns may be actualized because of rigid and bureaucratic HRM systems.

Deprivation had a positive effect in regard to "Assignments & fostering utilizing expertise learned in school." It may be surmised that this interesting result was caused by the unique characteristics of the Japanese higher education system, especially in terms of language. At Japanese higher educational institutions, most instruction is carried out in Japanese. International students in Japan are mainly able to acquire Japanese fluency during their period of education. However, having Japanese fluency puts former international students in a dilemma. In their analysis of the economic achievements of foreign workers in Japan, Takenaka et al. (2015) found that those with

Japanese educational credentials (i.e., a higher degree) had decreased earnings compared to those who had acquired educational credentials from abroad. People who have obtained degrees in Japan are resigned to choose jobs that are not remunerated because they have fewer opportunities to attain well-paid professional jobs linked to "foreign skills." The question of how former international students who graduated from Japanese educational institutions react to the unattractiveness of their credentials may be raised: it may be predicted that such former international students would opt to leave Japan for a third country, but this would seem unfeasible because Japanese is not a language that is transferrable to other countries. Takenaka et al. (2015) also revealed that although Japanese educational credentials are not favorable, Japanese fluency, like English fluency, contributes to increasing wages. Therefore, while former international students are dissatisfied because they are unable to utilize their educational degrees, continuing to work in Japan and seeking to utilize their educational degrees in Japan is a more rational choice than is leaving. The compromise inherent in this decision might underlie the positive effect of deprivation observed in "Assignments & fostering utilizing expertise learned in school."

Policy implications

From the results of quantitative analysis, we discussed motivations among former international students to settle and work in Japan and whether HRM policies that firms have implemented have been effective. We present several policy implications associated with facilitating the entry of international students into the Japanese labor market.

First, in regard to the effectiveness of firm policies related to the utilization of foreign workers in Japan, our analysis shows that firms can mitigate former international students' intention to leave Japan by considering short-term career development and creating environments in which such former students can demonstrate their abilities as foreigners. Thus, it can be said that firms' efforts to introduce HRM policies conducive for former international students are not in vain.

However, although HRM policies for former international students are effective, firm efforts are fundamentally limited. Former international students have certain characteristics as "target earner": the more they earn, the more strongly they intend to leave Japan. Generally speaking, giving monetary rewards to workers who contribute to business activities is the basic way to retain them and encourage them in the office. However, this has the opposite effect on former international students working in Japan. That is, in the case of former international students, firm efforts on behalf of employees accelerate their intention to leave. In Japan, facilitating the entry of highly skilled foreign workers is one important policy issue as a countermeasure against population decline. However, policies that reflect the circumstances of the labor-demand side but ignore the interests of the labor-supply side are insufficient. Premised on the

motivations among migrants, one suggestion may be to formulate not policies that aim to settle such workers in Japan, but policies that encourage migrants to circulate. To accomplish this aim, the Japanese government needs to cooperate with sending countries, especially neighboring Asian countries.

Finally, there is a role to be played by Japanese higher educational institutions that accept international students. Our analysis indicated that the skills acquired at the Japanese educational institutions can be obstacles to those former international students moving to other countries; this circumstance hinders international students and cannot be favorable, though it reinforces their intention to settle and work in Japan. To resolve this dilemma, educational courses premised on the circulation of migration that enable international students to acquire skills useful in other countries are needed. In the context of economic globalization, internationalizing education will be beneficial for not only for international students, but also Japanese learning in Japan.

LIMITATIONS AND FUTURE TASKS

Our empirical results clarified the role of HRM activities on the settlement of former international students. However, caution is needed in interpreting our results as our estimations could have been affected by three types of bias. First, selection bias may have had an effect. Our dataset comprised cross-sectional data obtained from former international students currently residing in Japan and working at firms in a single period. Given that the intention to emigrate is associated with the possibility of emigrating, our results might suffer from selection bias since we failed to include former international students who had already left Japan in the sample. Second, simultaneity bias may have had an effect. It may be surmised that former international students with the motivation to continue to work in Japan initially select more attractive firms that provide suitable HRM activities for them. Hence, our results, where intention was treated as dependent variable and HRM activities were treated as independent variables, might suffer from simultaneity bias. Third, omitted variable bias may be present. Our analysis omitted certain variables, such as networks of kinship and remittances, which have been recognized in previous studies (e.g., Constant and Massey, 2002). If these omitted variables were correlated with HRM activities, our estimations would be biased. For more reliable conclusions, our findings must be retested with a longitudinal dataset that includes more related variables and responses pertaining not only to former international students residing in Japan, but also to those who have left Japan.

In addition, our analysis did not address the question of settlement at the behavioral level partly due to the limitations of our dataset. From the viewpoint of policy, behavior is much more important than intention. Cassarino (2004) indicated that the relationship between the intention and behavior is not straightforward in terms of return; it is mediated by how migrants mobilize their own resources. Through

theoretical and empirical examination of the relationship between intention, behavior, and resources mobilization, the conditions for settlement behavior should be clarified in the future.

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Appendix: Binominal regression results for control variables

	Model 1			Model 2			Model 3		
Variable	Coefficient	S.E.	P-value	Coefficient	S.E.	P-value	Coefficient	S.E.	P-value
Intercept	-2.229	1.563	0.154	-1.905	1.647	0.247	-2.049	1.660	0.217
Control Variables									
Age	0.031	0.031	0.307	0.009	0.033	0.786	0.016	0.033	0.634
Sex (ref: female)									
Male	-0.132	0.227	0.560	-0.212	0.240	0.377	-0.175	0.240	0.466
Origin Country (ref: other)									
China	-0.233	0.598	0.696	-0.192	0.655	0.769	-0.228	0.630	0.718
South Korea	0.084	0.528	0.874	0.181	0.550	0.742	0.087	0.507	0.863
Taiwan	0.701	0.642	0.275	0.775	0.686	0.259	0.774	0.646	0.231
Other country in Asia	-0.257	0.762	0.736	-0.325	0.820	0.692	-0.261	0.748	0.727
Education level (ref: other)									
Bachelor	0.296	0.462	0.522	0.219	0.498	0.660	0.403	0.482	0.403
Doctorate or Master's	0.468	0.490	0.339	0.293	0.509	0.565	0.562	0.503	0.264
Academic major (ref: Science)									
Liberal arts	0.287	0.255	0.261	0.324	0.265	0.222	0.235	0.268	0.382
Other	-0.094	0.550	0.865	-0.145	0.608	0.812	-0.299	0.596	0.616
Japanese Proficiency	0.124	0.182	0.495	0.170	0.185	0.359	0.239	0.193	0.215
Resident status (ref: other status)									
Status based on labor	-0.108	0.411	0.793	-0.084	0.408	0.838	-0.162	0.415	0.696
Spouse (ref. single/spouse of non-Japanese)									
Spouse of Japanese	0.386	0.449	0.390	0.480	0.433	0.268	0.410	0.426	0.336
Type of residence (ref: no home ownership)									
Own house	0.470	0.464	0.311	0.386	0.484	0.425	0.406	0.482	0.400
Type of employment (ref : contract employee)									
Regular employee	0.992	0.391	0.011	0.822	0.419	0.050	0.829	0.428	0.053
Managerial position (ref: no)									
Yes	-0.371	0.491	0.450	-0.439	0.511	0.390	-0.368	0.516	0.475
Experience with job change (ref: no)									
Yes	-0.384	0.312	0.218	-0.596	0.301	0.047	-0.405	0.325	0.212
Years at current firm	0.174	0.068	0.011	0.142	0.072	0.047	0.187	0.073	0.010
Misrecognition (ref: no)									
Yes	-0.511	0.261	0.050	-0.587	0.283	0.038	-0.615	0.291	0.034
Overtime work	0.141	0.074	0.058	0.145	0.075	0.052	0.184	0.077	0.016
Satisfaction with current firm (ref: dissatisfied)									
Satisfied	1.056	0.317	0.001	1.193	0.311	0.000	1.247	0.317	0.000
Firm size (ref: less than 1,000 employees)									
More than 1000	-0.356	0.205	0.083	-0.490	0.224	0.029	-0.457	0.227	0.044
First year of employment of international student (ref: after 2000)									
Before 2000	0.042	0.259	0.871	0.071	0.275	0.798	0.114	0.276	0.679
Connection with foreign firms	-0.079	0.078	0.312	-0.085	0.081	0.295	-0.081	0.083	0.328
Ratio of foreign workers	0.007	0.136	0.958	-0.017	0.154	0.910	0.001	0.154	0.997
Managerial position (ref: no)									
Yes	0.300	0.290	0.301	0.246	0.308	0.425	0.295	0.304	0.332
Overseas expansion (ref: no)									
Yes	-0.419	0.314	0.182	-0.495	0.340	0.145	-0.504	0.350	0.150