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## **Occupational Credentials and Migrants' Return Aspiration: Evidence from the Foreign Elderly Care Workers in Japan**

Nobuyuki Nakamura\* and Aya Suzuki†

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### **Abstract**

While temporary migrants, especially in labor-intensive industries, are expected to contribute to economic growth and to the labor market in their host and home countries, the motives for their return to their home countries are ambiguous. Above all, we need to investigate the effects of occupational credentials as proof of skills on migrant behavior. This study quantitatively explores whether occupational credentials that migrant workers hold in their home and host countries, as signals of skills, influence their return aspirations using unique data from foreign elderly care workers in Japan. We found that migrant workers who held occupational credentials in their home countries tended to expect to return much earlier than those who did not. Our findings imply that the occupational credentials in each country have functioned as one of the crucial factors for their returns, corresponding with the signaling effects in labor market research.

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**Keywords:** Return, Migrants, Occupational Credentials, Elderly Care, Japan

**JEL code:** J24: Human Capital • Skills • Occupational Choice • Labor Productivity, J44: Professional Labor Markets • Occupational Licensing, J61: Geographic Labor Mobility • Immigrant Workers, O15: Human Resources • Human Development • Income Distribution • Migration, O53: Asia including Middle East

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## 1. Introduction

The recent surge in international labor migration has significant implications for the global economy (World Bank Group 2023). More than half of the world's migrants are temporary migrants who depart from their host countries within five years of entry to either return to their home countries or relocate to other countries (Dustmann and Görlach 2016). Return migrants are expected to contribute to their home countries' economic growth through different channels such as earning income, building skills, or importing social norms from host countries (Wahba 2014). Such returnees are expected to transfer their newly improved skills and knowledge from the destination in what is termed a “brain gain” (Dos Santos and Postel-Vinay 2003; Appleton, Morgan, and Sives 2006; Dustmann, Fadlon, and Weiss 2011). However, the return of these migrants leads to a loss of human resources in labor-intensive industries in host countries facing chronic labor shortages owing to demographic changes. While such impacts of their return are known to be large, going beyond temporary migrants' personal career development, the factors affecting their decisions to return need to be explored in more depth.

Migrants' skills and the rate of return on these skills in each country are considered to affect migrants' decisions to leave or stay (Borjas and Bratsberg 1996; Rooth and Saarela 2007). These findings use educational attainment as a proxy for worker skills. However, at the same time, one-dimensional skill measures may not provide comprehensive results on economic behavior among migrants. For example, Gould and Moav (2016) found that not only general skills, which are generally evaluated by educational attainment, but also country-specific skills, such as language skills or occupational credentials, are likely to affect emigration decisions. Educational attainment alone is insufficient to capture promising performance in the labor market in host and home economies, as it is fixed before entry into the labor market and does not reflect any learning effects that occur after the completion of education. Patt et al. (2021) provided the first evidence of the importance of occupational skills in international emigrant selection using the case of migration from Mexico to the United States. They suggest that manual occupational skills, such as physical strength or the capacity to use machines, are more positively selected among movers from Mexico rather than cognitive occupational skills, such as problem solving or creativity; further, occupational skills are more critical for emigration decisions than traditional skill measures, including educational attainment. If occupational skills are crucial in the decision to emigrate, it may be reasonable to expect that they are also relevant in deciding whether to return. Moreover, while occupational credentials have received attention as a signaling effect in the labor market (Spence 1973; Kleiner and Krueger 2010; 2013), research on the effects of occupational credentials as proof of skill on migrant behavior is limited.

This study quantitatively explores whether the occupational credentials held by migrant workers in their home and host countries as signaling of skills influence their return aspirations. We examined the case of a foreign elderly care worker in Japan. While the global debate on “the

Global Care Chains” is booming (Sabio, Pandey, and Parreñas 2022; Walton-Roberts 2020; King-Dejardin 2019) in the context of a dramatically changing economic and demographic structure, the care industries in developed countries, which are labor-intensive (Razavi and Staab 2010), depend on the labor force from developing countries. In Japan, where foreign elderly care workers are in high demand, the government recently introduced policy measures to open borders for foreign care workers (FCWs)<sup>1</sup>. The decision of FCWs to return to their home countries depends on occupational credentials that would allow them to apply for permanent stay status or renew their visas based on their career plans. Even if migrant workers enter Japan on a temporary visa that do not require occupational credentials, they can transfer to a permanent visa when they obtain such credentials in Japan.

In this study, we conducted an original online survey of FCWs in Japan with the cooperation of care facilities. The questionnaire in our survey included questions on socioeconomic status, such as income, proficiency in the Japanese language, self-evaluation of job performance, household economy in the home country, and social network. We also asked about respondents’ return intentions in the survey and regressed their return plans on specific variables.

Our estimation results suggest that if respondents have care- or nursing-related occupational credentials from their home countries, they plan to return to their home countries earlier than those who do not. Migrant workers who only have occupational credentials in their home countries tend to expect to leave much earlier. By contrast, migrant workers with national occupational certification in Japan tend to stay longer in Japan, although this result becomes insignificant after controlling for socioeconomic covariates. A robustness check using propensity scores yielded consistent results. Our findings imply that, while other skill factors such as educational attainment or language skills do not significantly affect the return decision, the occupational credentials in each country have functioned as crucial motives to return or continue to stay. This corresponds with the recent discussion on signaling effects in the labor market, which finds a stronger effect among minorities or workers who do not have weak ties in the labor market (e.g., Blair and Chung 2021; 2022).

This study contributes to research on migration and labor markets. First, it adds to the discussion on the motives behind temporary labor migrant returns. Economic factors, including the situation in the host and home economies; economic decisions, such as human capital investment or remittances; and individual heterogeneity are known to influence economic behavior and return decisions (Dustmann and Weiss 2007; Dustmann and Görlach 2016). Gibson and McKenzie (2011); Bijwaard, Schluter, and Wahba (2014); Dustmann and Okatenko (2014); de Haas,

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<sup>1</sup> As King-Dejardin (2019) mentions, while the definition and concepts of the term “care” is broad, the term “care” in this paper generally refers to the elderly care service, which aims to fulfill the special needs and requirements that are unique to senior citizens.

Fokkema, and Fihri (2015); and Crescenzi, Holman, and Orru' (2017) are among the numerous scholars who have studied why labor migrants return to their home countries. However, the connection between migrants' intentions to return and their occupational skills, particularly qualifications, remains underexplored. Most studies analyzing return behavior among migrant workers have focused on Western countries, even when over 40% of these individuals originate from Asian countries. Although the discussion on the global care market has expanded in response to the increasing demand for care (King et al. 2021; King-Dejardin 2019), few studies have quantitatively investigated the economic behavior of FCWs. This study provides new perspectives on return decisions by examining the unique geographical and industrial contexts.

Second, this study closely examines signaling effects in the labor market, an area of economics debated since Spence's (1973) seminal work. While educational attainment has traditionally been viewed as the primary signaling mechanism in the job market, occupational credentials have recently garnered attention as an alternative signal because of their more direct reflection of potential occupational skills (Blair and Chung 2021; 2022). Regarding labor movement, existing evidence shows the relationship between inter-state movements and occupational licensing in the United States (Deyo and Plemmons 2022; Johnson and Kleiner 2020; Mulholland and Young 2016). Furthermore, Cassidy and Dacass (2021) explains that occupational licensing has a larger effect on wage premiums among immigrants than among natives. However, to the best of our knowledge, no study has explained the relationship between cross-border return behavior and occupational credentials in host and home countries. Our study offers new evidence on the importance of occupational credentials by examining the signaling effects of international labor markets from the perspective of temporary migration.

The remainder of this paper is organized as follows: Section II describes the context of this study. Section III reports the data and section IV discusses the estimation strategies employed. Section V presents the estimation results and section VI concludes the paper.

## **2. Contexts**

### ***Occupational credentials related to care in host and home countries***

While the demand for elderly care has increased globally owing to changes in economic and demographic structures (King et al. 2021), Japan has faced the most rapid aging of any country in the world. According to Japanese government projections, the proportion of the elderly (aged 65 years and older) will increase from 28.6% in 2020 to 38.7% in 2070 (National Institute of Population and Social Security Research 2023). The rapidly aging Japanese population has led to remarkable developments in the care industry. In 2000, Japan introduced a long-term care insurance system to support older adults and the aging society. According to the Ministry of Health, Labour, and Welfare in Japan (MHLW), although the number of users of elderly care services was 1.49 million in 2000, that number increased by 4.87 million in 2019, a growth of

about 3.3 times in just 20 years (MHLW, 2016; 2019). Both the quantity and quality of workers are required to maintain good management in the elderly care industry. One of the systems to ensure high-quality care workers is the national qualification for care workers, the Certified Care Worker (CCW). This qualification is not a license such as that of a medical doctor, which creates a regulatory barrier to entry into licensed professions, but accreditation by the government for those who have achieved a certain level of skill and knowledge. It is thus proof of having acquired highly specialized knowledge and skills in the care industry. In fact, as with the certification of low-social closure occupations in the healthcare industry in the United States (Dill et al. 2022), benefits in terms of salaries or opportunities for promotions are better for those who qualify as certified caregivers in most care facilities in Japan. To qualify as CCW, candidates must have graduated from a government-approved vocational school. Alternatively, candidates must have more than three years of work experience in the care industry, completed practical training, and passed a written exam (and a practical exam in case), which is conducted once a year. The passing rate is approximately 70%. Although the exam is conducted in Japanese, foreign examinees can take the exam with reading aids, including an extend time limit of 1.5 times the regular time limit as exceptional assistance.

However, professional qualifications related to elderly care are relatively immature in developing countries in Asia, from where most migrant workers in Japan come. The demographic structure of developing Asian countries differs from that of Japan; therefore, the market size of the elderly care industry is small and limited. Additionally, the traditional social norm that families or relatives, especially female members, should take care of the elderly is an obstacle to expanding the care market. However, as the economic structure has gradually changed and the female labor force participation rate has increased, the demand for care in these countries is gradually increasing. Additionally, some migrant workers in the elderly care industry have qualifications as nurses in their home country. In this study, we review a summary of professional qualifications related to care and nursing in Indonesia, Vietnam, and the Philippines, the leading source countries for FCWs in Japan, following a report by Japan International Cooperation Agency and Quinie (2023).

In Indonesia, although there is no unified national certification for elderly care, vocational high schools under the Ministry of Education and Culture and other institutions offer training courses for caregiver candidates and issue certificates for those who complete the training. Some Indonesian workers in elderly care facilities in Japan qualify as professional or vocational nurses in their home country. Professional nurses have broader discretion in conducting medical treatment than vocational nurses; however, they must renew their licenses every five years. Similar to Indonesia, the Vietnamese government does not provide a national certification system for elderly care, but the qualification system for nurses is well established. The national qualification of a nurse is divided into three types according to the period of education:

intermediate nurse (studying at an intermediate medical school for two years), tertiary nurse (studying at a junior medical college for three years), or bachelor's nurse (studying at a nursing college for four years). Most migrant workers from Vietnam qualify as tertiary or bachelor nurses because these qualifications require adequate job requirements. Unlike the two previous countries, the Philippines has operated a national qualification system for care work, defining a “caregiver” as a nationally certified worker as per the Philippine Qualification Framework. This qualification is proof of acquiring competencies not specific to the care of the elderly, but also for people with special needs, including infants and children. This qualification was developed in 2000 to certify overseas workers from the Philippines, and a governmental agency called the Technical Education and Skills Development Authority in the Philippines supervised and managed training courses offered by educational institutions nationwide. As a minimum requirement of the authority, the training course must be offered for more than 756 hours, and institutions often provide courses, including theoretical, practical, and on-the-job training. In addition, nurses in the Philippines move to Japan as FCWs. Nurses in the Philippines must pass a national examination after graduation with a bachelor's degree in nursing. They must renew their license every three years, which can be done through online courses.

In summary, each country has organized a certification system to maintain the quality of its care and nursing systems. The certifications of the holders in each country function as proof of their skills related to care or nursing, and are appreciated in terms of salary or their appointed position in the workplace. However, each qualification is effective in the labor market only in the country where it was issued.

## 2.1 FCWs in Japan

Although the Japanese government projects that the necessary number of care workers will increase by 2.43 million by 2025 (Kakizoe 2023), the labor supply from Japanese natives falls short of demand. The government recently allowed working visas for FCWs to address the shortage of workers in the care industry<sup>2</sup>. Initially, in 2008, the government decided to issue visas to CCW candidates and concluded economic partnership agreements (EPAs) with partner countries, namely, Vietnam (accepted since 2008), the Philippines (accepted since 2009), and Indonesia (accepted since 2014). EPA visa holders must have graduated from nursing schools or obtained certified nursing or care qualifications in their home country. In Japan, holders must take an exam for CCW during their stay and return to their home countries after four years if they fail the exam. In 2017, the government started to issue a professional visa called “Nursing Care” (NC). The holders of this NC visa must obtain CCW qualifications at the time of entry. Most NC visa holders had studied in Japan and completed professional school degrees to obtain their qualifications. These visa holders can permanently reside in Japan with their family members (partners and children) after obtaining qualifications from the CCWs.

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<sup>2</sup> The summary of the characteristics of each visa is represented in the Appendix.

However, the government has also opened the door for FCWs without care-related qualifications from the host country. Since 1993, the Japanese government has operated the “Technical Intern Trainee Program” (TITP) to transfer skills and knowledge cultivated in Japan to developing countries. In this program, a trainee concludes a working contract of no more than five years with an employer in an industry such as agriculture, manufacturing, or tourism. In 2017, the government added elderly care as a job category to this extensive training program (OECD 2016). Another kind of visa, termed “Specified Skilled Worker” (SS), began in 2019 to satisfy the chronic shortage of skilled labor in the labor force for various job categories across the country. The government expects visa holders to possess considerable knowledge and experience in specific industrial fields, including elderly care. Unlike the two previous visa policies that focused on professional workers, TITP and SS visa holders in Japan do not need CCW qualifications. Instead, they are permitted to stay for a maximum of five years from their entry into Japan, but they are not allowed to accompany family members on their visas.

An interesting feature of these visa schemes is that FCWs can transfer for another visa based on their career path and migration plans. If temporary visa holders (TITP or SS) pass the CCW exam during their stay, they can permanently change their visas to NC visas and stay in Japan. If foreign interns under the TITP are willing to stay in Japan for more than five years, they can shift to an SS visa; thus, foreign trainee interns can extend their stay for a maximum of ten years to work in Japan with two visas. These unique characteristics of the visa scheme allowed us to compare FCWs’ intended duration of stay in host countries.

## 2.2 Concepts

Some studies suggest that occupational skills affect cross-border labor movements (e.g., Patt et al., 2021). We consider that occupational credentials, as signals of occupational skills, also influence their return decisions, functioning as pull or push factors for their migration profiles. Hypothetically, the costs and benefits of obtaining occupational credentials for temporary migrants may be relatively high. Blair and Chung (2021) theoretically explain that credentials function as informative signals in the labor market when the cost of obtaining occupational credentials is high and that demographic minorities are the most beneficial cohorts for enjoying license premiums. Redbird (2017) and Kim (2020) suggest that occupational licensure reduces the barrier to entry into labor markets for workers who do not have weak ties or informal networks in the labor market. Although Kleiner and Krueger (2013) suggest that the effects of government certification on wages are smaller than those of licensure, Dill et al. (2022) mention that the costs of obtaining government certifications in the care or nursing sectors are relatively high. In our case, if migrants can obtain any occupational credentials recognized in the host countries (i.e., the CCWs in Japan), they are likely to stay in the host country because of the costs and benefits of obtaining the credentials, not just because of the visa scheme. On the one hand, the credentials

related to care or nursing in home countries may work as an incentive to return because the potential returnees with credentials in home countries, who had spent a high credential cost before migration and would become minorities in the labor market after returning, expect to see benefits (i.e., the wage premium among the returnees [c.f., Reinhold and Thom 2013] and the certification premium) when they newly enter or reenter the labor market in their home countries.

As another view for their return among workers who have occupational credentials in their home countries, the underestimation of skilled workers is likely to be a push factor for certified migrant workers in their home countries. As King-Dejardin (2019) has noted, care industries in most host countries do not recognize their qualifications as care workers or nurses in their home countries, and workers with specific skills are treated as auxiliary workers; that is, there is an over-qualification phenomenon (Shutes and Chiatti 2012). Although Yin and Kawata (2014) explain that the certification premium is significant in the Japanese care sector, qualifications recognized in other countries are not usually regarded as proof of mature occupational skills. Workers in the care industry often face wage penalties in most countries, including Japan (Lightman 2017; Budig and Misra 2010; Razavi and Staab 2010; England, Budig, and Folbre 2002). Thus, foreign workers with potentially high skills, who are regarded as auxiliary workers, may not intend to remain in the labor market in the host countries.

### **3. Data**

We conducted a unique online survey between August and September 2021 to gather comprehensive data on the economic behavior of FCWs. We recruited the respondents via a postal announcement to the elderly care facilities throughout Japan that FCWs are expected to engage in (sampling methods are detailed in the Appendix). Foreign care workers in these facilities accessed our online survey, which was introduced in the invitation letter in the postal announcement. We implemented this original survey using a beginner-level Japanese questionnaire because all FCWs were required to master their Japanese level at the application for all visa types. The survey was revised under the supervision of an expert in Japanese education. We also added complicated terms translated into several languages to the questionnaire, which native speakers supervised. We then encouraged the respondents to answer the questions with the help of fluent Japanese speakers when they found it difficult. More than 76% of the respondents felt that it was easy or relatively easy to answer the questionnaire.

We asked respondents about socioeconomic characteristics such as the type of visas, entry dates into Japan, age, income, gender, education, work experience in their home countries, and loan experiences for migration. We also asked about household information in their home countries. One concern with online surveys is that respondents may not be as diligent as the researchers expect when answering questions. To secure the validity of the survey, we adopted a methodological tool called the instructional manipulation check (IMC) in the questionnaire

(Oppenheimer, Meyvis, and Davidenko 2009). Three IMC questions were included in the middle of the questionnaire. Given the random errors caused by incorrect answers, we regarded them as valid samples if they correctly answered more than two IMCs. Although we collected data from 218 samples in the online survey, only 200 respondents met our IMC criteria; thus, we used these 200 samples in the research.

Table 1 and Figures 1 and 2 present the summary statistics for the sample<sup>3</sup>. In the sample, 84% were women, with an average age of 28. On average, they have an educational degree equivalent to completing upper high school in their home countries. While 30% of the respondents had obtained CCW qualifications in Japan, approximately 70% also had credentials related to care or nursing in their home countries. Of those with qualifications, 45 had qualifications in both the host and home countries. Sixty percent stayed and worked in metropolitan cities in Japan, such as Tokyo. Seven percent of the respondents were accompanied by family members to Japan. Further, more than 82% of the sample were from three countries that signed an economic partnership agreement with Japan, namely, Vietnam (48%), Indonesia (17%), and the Philippines (19%). Other workers were from Asia, including Myanmar and China. In the samples, 108 workers held an EPA and NC visa; thus, the ratio of permanent-type visas to temporary visas is almost proportional. As the incomes of the respondents and households<sup>4</sup> were reported in different currencies, we converted them into U.S. dollars using the purchasing power parity-adjusted price.<sup>5</sup> The income of respondents was higher than the average household income in their home countries.

#### 4. Estimation strategy

We explored foreign migrant workers' return expectations but not their actual return behaviors. According to Dustmann and Görlach (2016), the intended duration of migration is vital for measuring the relationship between migration duration and economic behavior rather than the completed duration because migrants always reoptimize their migration plans over their life cycle, conditioning the present-day choice on future expectations. We primarily investigated the impact

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<sup>3</sup> Although there are no available micro-level data from the national survey on migrant workers in Japan, Mitsubishi UFJ Research and Consulting Co. implemented large-scale national surveys for FCWs and published its reports, which were supported and funded by the MHLW. We confirm that the characteristics of the sample in this research are almost similar to those of the large-scale samples. The results are available upon a request.

<sup>4</sup> Regarding the income of the households left behind, we observed some missing values because the respondents did not know the exact value. We substituted the average value of each country in each period into a missing value. We then calculated the average price from other samples in the dataset for the respondents from Vietnam, Indonesia, Philippines, Myanmar, and China. As for the respondents from Nepal, Sri Lanka, Korea, and Kyrgyz, where the number of the respondents was fewer, we substituted the average price with data produced by CEIC (<https://www.ceicdata.com/en/indicator/annual-household-income-per-capita>). Respondents from other countries had no missing values.

<sup>5</sup> We adopted the purchasing power parity conversion factor, private consumption (LCU per international US\$) from the databank by the World Bank (<https://data.worldbank.org/indicator/PA.NUS.PRVT.PP>), for the calculation of each income value.

of the current status of their occupational skills, including occupational credentials in the host and home countries, on their return strategies; therefore, their present intentions are essential for exploring their migration profiles. We estimated the following model using unique cross-sectional data comprising 200 samples:

$$Return_i = \alpha + OS_i\beta + X_i\delta + C_j + \mu, \quad (1)$$

where  $Return_i$  is the return intention of the  $i^{\text{th}}$  migrant, and is the outcome of the model. In our survey, we asked the respondents the question “*When will you plan to leave for your home country?*” regardless of the current visa expiration; the respondents selected and answered their target year to leave Japan from the current year (2021) to 2032, or if they intended to stay permanently. Based on this question, we constructed three variables for estimation. First, we set “the return index” from 0 (Stay by the year 2021) to 11 (Stay by the year 2031) and 12 (Intend to stay permanently), which shows the degree of intention of the permanent stay. Note that it is not a cardinal index. Second, we created a variable called expected stay duration. We computed their staying duration at the day level from July 1, 2021, to December 31 of each year, assuming that they would stay in Japan by the end of each year they answered. For descriptive purposes, we set December 31, 2031, as the maximum date for this variable, regardless of the aspiration to stay permanently. Finally, we included a dummy variable that represents their intention to stay permanently (=1 if they intend to stay permanently). We estimate this model using a binary outcome and a linear probability model.

$OS_i$  is the vector of the variables related to the occupational skills of respondent  $i$ , including the status of occupational credentials in the host and home countries. In the questionnaire, we asked whether the respondents had credentials related to care or nursing in their home countries and created a dummy variable for their status of job credentials in their home countries. For the qualification information of the CCW in Japan, based on the eligibility requirements for the visa, the NC visa holders were considered qualified (= 1), while the visa holders of TITP and specified skills were not (= 0). EPA visa holders were asked separately about their qualifications using a survey form. In addition to their occupational credentials, the respondents indicated their job performance on tasks in care work. Elderly care work includes basic tasks, such as cleaning, washing clothes, bedmaking, and some medical-related tasks, including tubal feeding and sputum suctioning. We asked the respondents about their performance on 15 care-related tasks, and they self-reported their level from 0 (“I have never done the task”) to 1 (“I cannot do the task”) to 4 (“I do the task well”) for each task using a Likert scale. We summarize the scores of all tasks and standardize them into one index called the job-perceived score, which has a maximum of 100 points<sup>6</sup>.

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<sup>6</sup> See the notes in the Table 1 for the detailed information on the job-perceived score.

Host language skills are crucial for the working performance of migrants because the service industry, including elderly care, requires communication skills. We added the results of the Japanese Language Performance Test (JLPT) for each respondent as a proxy for their language skills. The JLPT is a standardized test used to evaluate the Japanese language proficiency of nonnative speakers. It evaluates language knowledge and reading and listening abilities. The JLPT consists of five-level tests, from N5 (the most basic level) to N1 (the most advanced level); to pass each level, the test taker must receive a score higher than the threshold score. We asked the respondents about their level of proficiency based on the last-taken JLPT. For respondents who could not recollect their proficiency level, we substituted it with the level at entry into Japan or the minimum required level for each visa type (EPA: N3, NC: N2, TITP: N4, SS: N5). We assigned numbers in order of the test's easiness (e.g., 1 if N5 passed; or 5 if N1). In addition to these occupational skills, we included general human capital proxied by educational attainment in the **HC** vectors.

$\mathbf{X}_i$  is the vector of individual socioeconomic characteristics of  $i$ , including their staying duration (Days: from entry date to July 1, 2021), age, gender (1=female), visa type (1=temporary type, i.e., TITP or SS), marriage status (1=married), the number of children left at home, the location of the workplace (1= Metropolis<sup>7</sup>), loan experience at coming to Japan (1=yes), log-transformed monthly average income of respondent  $i$ , and of  $i^{\text{th}}$  household left in the home country. As the social network of family or friends surrounding migrants is a crucial indicator of their economic behavior (Dustmann and Görlach 2016), we included some variables related to social networks, such as a dummy variable for whether the family and friends of the respondents were in the host country at the point of entry, a dummy for currently accompanying family members in Japan, and the number of monthly contacts with family members at home.  $C_j$  is the home-country  $j$ 's specific fixed effect and  $\mu$  is the error term.

We regressed this model using ordinary least squares (OLS) as a benchmark analysis. However, obtaining occupational qualifications is relatively self-selected and the model may suffer from the endogeneity problem of causal inference. We employed the inverse probability weighted regression adjustment estimator (IPWRA) as a robustness check to reduce potential self-selection bias based on observable characteristics. This estimator is known as a “doubly robust” estimator because it is a consistent estimate if the treatment or outcome model is correctly specified. In this method, the inverse of the propensity score is used as a weight to run regressions of the outcome variable (Wooldridge 2007). As we estimated the average treatment effects on the treated (ATT), we employed a weight equal to **1** for treated observations and  $ps(x)/(1-ps(x))$  for control observations, where  $ps$  refers to the propensity score. We estimated the treatment effects by

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<sup>7</sup> We assigned the prefectures in three metropolitan areas around Tokyo (Tokyo, Saitama, Chiba, Kanagawa), Osaka (Osaka Hyogo), and Nagoya (Aichi) as the “metropolis.”

comparing the averages of the two groups (Hirano, Imbens, and Ridder 2003). The IPWRA estimator can yield causal estimates of the ATT under the assumption that only a selection of observables exists.

## 5. Results

Table 2 presents the results of OLS estimations<sup>8</sup>. Columns 1–3 show the regression results for the return index, that is, the degree of individuals' intention to stay permanently. Foreign workers with certified care- or nursing-related occupational qualifications from the home country expressed a desire to return to their home country early. These results were consistent when the model was controlled for other covariates. Workers who were credentialed in their host countries (CCWs in Japan) were likely to stay in the host country longer (column 1); however, the results were insignificant after controlling for other covariates. Columns 4–6 show the results of the models for expected duration of stay. These results are similar to those for the return index models. Home-country occupational certifications are associated with the tendency of the respondents to leave for their home countries more than one year earlier than others. However, the qualifications of CCWs helped them extend their expectation to stay in the host country for approximately two years in a limited variable model. Regarding the linear probability models evaluating respondents' intention to stay permanently (columns 7–9), the qualifications of CCWs contribute to longer stay in Japan, but only in the model with human capital vectors. As for the other covariates, we found no significance for the variables related to human capital, including educational attainment; that is, the proof of occupational skills was a more crucial indicator of respondents' economic behavior than other traditional measures of skills. Moreover, the expected duration at entry timing was positively associated with their current expectations; that is, holding constant these differences in the expected duration at arrival still yielded a significant role of occupation credentials on migrants' expected duration of stay.

To estimate the qualification effects in more detail, we decomposed the qualification status of the respondents into three types: (i) occupational qualification in both host and home countries, (ii) occupational qualification only in home countries, and (iii) occupational qualification only in the host country. Table 3 shows the estimation results. Respondents with care- or nursing-related occupational credentials only in their home countries intended to leave early, and this was statistically significant at the 5% or 10% levels. Workers who were certified CCW but did not have qualifications in their home countries were likely to remain in Japan, as per the simple model (columns 1, 4, and 6). The effects of occupational credentials in both the host and home countries were insignificant, as this variable merged the effects of credentials in different directions. Evidently, the respondents were willing to move to countries where they could take advantage of

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<sup>8</sup> As there are some outliers on the educational attainment variable, we excluded the sample of respondents who reported they enrolled in the school for fewer than nine years, and estimated the same model. The results are still informative and available upon request.

their qualifications, suggesting that the signaling effect in the labor market may be in play.

While the above estimations based on the OLS estimation yield some suggestive implications, we cannot deny self-selection bias in the acquisition of qualifications in each host and home country. To address this issue, we conducted a robustness check using the IPWRA. We calculated the propensity score to obtain each qualification using the covariates employed in the estimation, and then estimated the ATT of the qualification effects. The results are summarized in Table 4. Although we do not observe any significant effects of certification in the host country, workers with qualifications from their home countries expected to leave for their home countries earlier in their migration episodes. In summary, occupational credentials in the home country were found to be one of the return motives of migrant workers.

## **6. Conclusion**

Based on unique data collected from FCWs in Japan, we investigated the motives of return intention among migrant workers from the perspective of occupational credentials as proof of their skills. Our quantitative analysis suggests that occupational credentials recognized in the home country motivate migrant workers to return early, while job credentials from host countries prompt migrants to stay longer. Most importantly, respondents with occupational credentials only from their home country intended to leave early.

Multiple regression analysis further suggested higher significance of occupational credentials than other human capital components such as educational attainment or language skills. Our robustness check using the IPWRA estimator indicated that home-country care- and nursing-related credentials are crucial determinants of remigration among FCWs. These results complement discussions on signaling effects functioning as proof of potential skills in the labor market.

Our analysis stimulates discussion of research and policy implications related to migration. First, occupational skills, including credentials, are non-negligible determinants of economic behavior among temporary migrants. An ongoing debate is whether the decision to migrate or remigrate depends on educational attainment, with individual skills and skill premiums in countries acting as proxies. However, in our study, educational attainment did not reveal significant results. Instead, occupational skill, represented by the certification function, was a motive for determining return intentions. According to Dustmann and Görlach (2016), the return decision also interacts with other economic behaviors, such as remittances or human capital investment, in one's migration history. To scrutinize the economic behavior of temporary migrants, we need to carefully consider the effects of their occupational skills and credentials.

Second, our findings cast light on new discussions on the function of occupational credentials as

a signaling effect to reduce information asymmetries for labor demand. Potential returnees with credentials in the care or nursing sectors are likely to see benefits when they enter or reenter the labor market in their home countries. Although we need to consider the differences in target industry and migration regimes with the literature, occupational credentials from the home countries could be a pull factor in the return of temporary migrants because of their high credential costs. Moreover, the underestimation of potential skills among home-qualified workers could be a reason for early returns. While the care industry is still immature in developing countries in Asia, where most of these workers come from, and Japan is still difficult to retain such workers despite high demand (Kameyama et al. 2022). Kameyama et al. explored the determinants of the intention of FCWs to continue working in Japan from the perspective of environmental health, and suggested that workers' feelings that their abilities are being utilized among potentially qualified workers are a crucial indicator of retention in the host country. Although we cannot identify the reasons behind the credential effects on the return decision due to data limitations in this research, support for potential high-skilled workers will lead to a solution to the labor shortage. In Japan, the government has considered reforming the TITP and its visa scheme (The Japan News, 2023), and the advisory panel under the Japanese government has proposed the introduction of mutual recognition of the qualification for the visualization of skills among immigrants (Immigration Services Agency of Japan, 2023). Similar to the APEC Engineer Registration System, the international certification system in the care sector might ease skill conflicts caused by overqualification.

Our study is not without limitations. First, because our data were cross-sectional, it was difficult to establish a clear causal relationship. Although we employ IPWRA to correct for the potential endogeneity of the qualification variables, these methods fall short of controlling for unobserved differences.

Second, the migration regime in Japan's care sector is still under development. Since foreign trainees under the TITP in the elderly care field or workers under the SS first arrived in Japan in 2018 or 2020 and were required to have at least three years of work experience, they were not able to take the exam for CCWs until 2022, one year after data collection in this research<sup>9</sup>. We thus need to study the determinants of taking or passing exams on CCWs and their effects on economic behavior using large-scale and panel-based datasets.

Despite these limitations, our research provides important insights into migration policies at a time of accelerating global demand for migrant workers based on unique data.

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<sup>9</sup> For instance, a Sri Lankan holder of the specified skill visa working at Okinawa and an Indonesian technical intern trainee working at Nagano prefecture passed the exams for the CCWs in 2022.

## Reference

- Appleton, Simon, W John Morgan, and Amanda Sives. 2006. "Should Teachers Stay at Home? The Impact of International Teacher Mobility." *Journal of International Development* 18 (6): 771–86. <https://doi.org/https://doi.org/10.1002/jid.1313>.
- Bijwaard, Govert E, Christian Schluter, and Jackline Wahba. 2014. "THE IMPACT OF LABOR MARKET DYNAMICS ON THE RETURN MIGRATION OF IMMIGRANTS." *The Review of Economics and Statistics* 96 (3): 483–94. [https://doi.org/10.1162/REST\\_a\\_00389](https://doi.org/10.1162/REST_a_00389).
- Blair, Peter Q., and Bobby W. Chung. 2021. "A Model of Occupational Licensing and Statistical Discrimination." *AEA Papers and Proceedings* 111 (May): 201–5. <https://doi.org/10.1257/pandp.20211112>.
- Blair, Peter Q, and Bobby W Chung. 2022. "Job Market Signaling through Occupational Licensing." *The Review of Economics and Statistics*, November, 1–45. [https://doi.org/10.1162/rest\\_a\\_01265](https://doi.org/10.1162/rest_a_01265).
- Borjas, George J, and Bernt Bratsberg. 1996. "Who Leaves? The Outmigration of the Foreign-Born." *Review of Economics and Statistics* 78 (1): 165–76.
- BUDIG, Michelle J, and Joya MISRA. 2010. "How Care-Work Employment Shapes Earnings in Cross-National Perspective." *International Labour Review* 149 (4): 441–60. <https://doi.org/https://doi.org/10.1111/j.1564-913X.2010.00097.x>.
- Crescenzi, Riccardo, Nancy Holman, and Enrico Orru'. 2017. "Why Do They Return? Beyond the Economic Drivers of Graduate Return Migration." *Annals of Regional Science* 59 (3): 603–27. <https://doi.org/10.1007/s00168-016-0762-9>.
- Deyo, Darwynn, and Alicia Plemmons. 2022. "Have License, Will Travel: Measuring the Effects of Universal Licensing Recognition on Mobility." *Economics Letters* 219 (October): 110800. <https://doi.org/10.1016/J.ECONLET.2022.110800>.
- Dill, Janette, Jennifer Craft Morgan, Jane Van Heuvelen, and Meredith Gingold. 2022. "Professional Certification and Earnings of Health Care Workers in Low Social Closure Occupations." *Social Science and Medicine* 303 (June). <https://doi.org/10.1016/j.socscimed.2022.115000>.
- Dustmann, Christian, Itzhak Fadlon, and Yoram Weiss. 2011. "Return Migration, Human Capital Accumulation and the Brain Drain." *Journal of Development Economics* 95 (1): 58–67. <https://doi.org/10.1016/j.jdeveco.2010.04.006>.
- Dustmann, Christian, and Joseph Simon Görlach. 2016. "The Economics of Temporary Migrations." *Journal of Economic Literature* 54 (1): 98–136. <https://doi.org/10.1257/jel.54.1.98>.
- Dustmann, Christian, and Anna Okatenko. 2014. "Out-Migration, Wealth Constraints, and the Quality of Local Amenities." *Journal of Development Economics* 110 (September): 52–63. <https://doi.org/10.1016/j.jdeveco.2014.05.008>.
- Dustmann, Christian, and Yoram Weiss. 2007. "Return Migration: Theory and Empirical Evidence from the UK." *British Journal of Industrial Relations* 45 (2): 236–56. <https://doi.org/10.1111/j.1467-8543.2007.00613.x>.
- England, Paula, Michelle Budig, and Nancy Folbre. 2002. "Wages of Virtue: The Relative Pay of Care Work." *Social Problems* 49 (4): 455–73. <https://doi.org/10.1525/sp.2002.49.4.455>.
- Gibson, John, and David McKenzie. 2011. "The Microeconomic Determinants of Emigration and Return Migration of the Best and Brightest: Evidence from the Pacific." *Journal of Development Economics* 95 (1): 18–29. <https://doi.org/10.1016/j.jdeveco.2009.11.002>.

- Gould, Eric D, and Omer Moav. 2016. "DOES HIGH INEQUALITY ATTRACT HIGH SKILLED IMMIGRANTS?" *The Economic Journal* 126 (593): 1055–91.
- Haas, Hein de, Tineke Fokkema, and Mohamed Fassi Fihri. 2015. "Return Migration as Failure or Success?: The Determinants of Return Migration Intentions Among Moroccan Migrants in Europe." *Journal of International Migration and Integration* 16 (2): 415–29. <https://doi.org/10.1007/s12134-014-0344-6>.
- Hirano, Keisuke, Guido W. Imbens, and Geert Ridder. 2003. "Efficient Estimation of Average Treatment Effects Using the Estimated Propensity Score." *Econometrica* 71 (4): 1161–89. <https://doi.org/10.1111/1468-0262.00442>.
- Immigration Services Agency of Japan. 2024. "Advisory Panel of Experts on Ideal Form of Technical Intern Training Program and Specified Skilled Worker System Final Report". Tokyo: Immigration Services Agency of Japan.
- Japan International Cooperation Agency, and QUNIE. 2023. "Data Collection Survey on Acceptance of Foreign Workers for Long-term Care (KAIGO) Final Report". Tokyo: JICA
- The Japan News. 2023. "Japan Weighs Future of Contentious Foreign Trainee Program" *The Japan Times*. October 14. <https://japannews.yomiuri.co.jp/society/general-news/20231014-142807/> (accessed at Nov 29, 2023).
- Kakizoe, Tadao. 2023. "Long-term Care Insurance Increasingly Insecure." *The Japan Times*. August 11. <https://japannews.yomiuri.co.jp/editorial/insights-world/20230811-128935/> (accessed on Nov 29, 2023).
- Kameyama, Junko, Yumi Hashizume, Yuko Takamura, Shoko Nomura, Tomoki Gomi, and Hisako Yanagi. 2022. "Work Engagement, Well-Being, and Intent to Continue Working Based on Educational Support among Foreign Care Workers in Japan." *Environmental Health and Preventive Medicine* 27 (1). <https://doi.org/10.1265/ehpm.21-00248>.
- Kim, Jeounghee. 2020. "Occupational Credentials and Job Qualities of Direct Care Workers: Implications for Labor Shortages." *Journal of Labor Research* 41 (4): 403–20. <https://doi.org/10.1007/s12122-020-09312-5>.
- King, Elizabeth M., Hannah L. Randolph, Maria S. Floro, and Jooyeoun Suh. 2021. "Demographic, Health, and Economic Transitions and the Future Care Burden." *World Development* 140 (April): 105371. <https://doi.org/10.1016/J.WORLDDEV.2020.105371>.
- King-Dejardin, Amelita. 2019. *The Social Construction of Migrant Work: At the Intersection of Care, Migration and Gender*. International Labour Organization Report. [www.ilo.org/publns](http://www.ilo.org/publns).
- Kleiner, Morris M, and A B Krueger. 2010. "The Prevalence and Effects of Occupational Licensing Occupational Licensing." *British Journal of Industrial Relations* 48 (4): 676–87. <https://doi.org/10.1111/j.1467-8543.2010.00807.x>.
- Kleiner, Morris M, and Alan B Krueger. 2013. "Analyzing the Extent and Influence of Occupational Licensing on the Labor Market." *Journal of Labor Economics* 31 (S1): S173–202. <https://doi.org/10.1086/669060>.
- LIGHTMAN, Naomi. 2017. "Discounted Labour? Disaggregating Care Work in Comparative Perspective." *International Labour Review* 156 (2): 243–67. <https://doi.org/https://doi.org/10.1111/ilr.12001>.
- Ministry of Health, Labour and Welfare, Japan. 2016. "Long-Term Care Insurance System of Japan." [https://www.mhlw.go.jp/english/policy/care-welfare/care-welfare-elderly/dl/ltcisj\\_e.pdf](https://www.mhlw.go.jp/english/policy/care-welfare/care-welfare-elderly/dl/ltcisj_e.pdf).

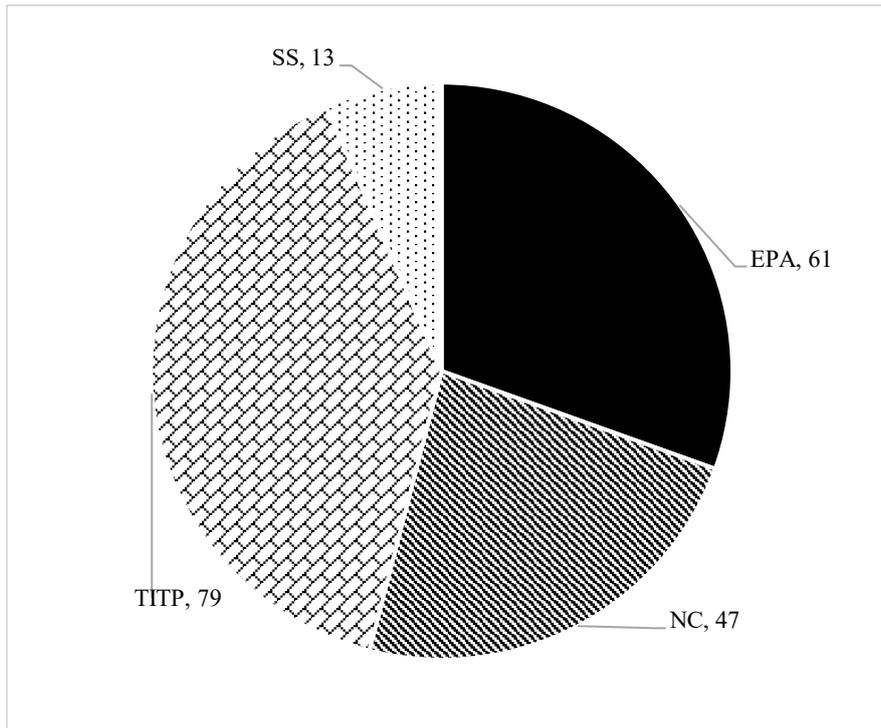
- Ministry of Health, Labour and Welfare, Japan. 2019a. “Kaigo-bunya wo Meguru Joukyou Nitsuite” [Current Situation in Elderly-Care Field].  
<https://www.mhlw.go.jp/content/12300000/000608284.pdf>.
- National Institute of Population and Social Security Research. 2023. “Population Projections for Japan (2023 Revision): 2021 to 2070,” 2023.
- OECD. 2016. *International Migration Outlook 2016*, Paris: OECD Publishing.
- Oppenheimer, Daniel M., Tom Meyvis, and Nicolas Davidenko. 2009. “Instructional Manipulation Checks: Detecting Satisficing to Increase Statistical Power.” *Journal of Experimental Social Psychology* 45 (4): 867–72.  
<https://doi.org/10.1016/J.JESP.2009.03.009>.
- Patt, Alexander, Jens Ruhose, Simon Wiederhold, and Miguel Flores. 2021. “International Emigrant Selection on Occupational Skills.” *Journal of the European Economic Association* 19 (2): 1249–98. <https://doi.org/10.1093/jeea/jvaa032>.
- Razavi, Shahra, and Silke Staab. 2010. “Underpaid and Overworked: A Cross-National Perspective on Care Workers.” *International Labour Review* 149 (4): 407–22.  
<https://doi.org/10.1111/j.1564-913X.2010.00095.x>.
- Redbird, Beth. 2017. “The New Closed Shop? The Economic and Structural Effects of Occupational Licensure.” *American Sociological Review* 82 (3): 600–624.  
<https://doi.org/10.1177/0003122417706463>.
- Sabio, Gianne Sheena, Kritika Pandey, and Rhacel Salazar Parreñas. 2022. *Global Care Chains*. Routledge Handbook of Immigration and Refugee Studies, Second Edition.  
<https://doi.org/10.4324/9781003194316-21>.
- Santos, Manon Domingues Dos, and Fabien Postel-Vinay. 2003. “Migration as a Source of Growth: The Perspective of a Developing Country.” *Journal of Population Economics* 16 (1): 161–75.
- Shutes, Isabel, and Carlos Chiatti. 2012. “Migrant Labour and the Marketisation of Care for Older People: The Employment of Migrant Care Workers by Families and Service Providers.” *Journal of European Social Policy* 22 (4): 392–405.  
<https://doi.org/10.1177/0958928712449773>.
- Spence, Michael. 1973. “Job Market Signaling\*.” *The Quarterly Journal of Economics* 87 (3): 355–74. <https://doi.org/10.2307/1882010>.
- Wahba, Jackline. 2014. “Return Migration and Economic Development.” In *International Handbook on Migration and Economic Development*, edited by Robert E.B. Lucas, 327–49. Massachusetts: Edward Elgar Publishing.
- Walton-Roberts, Margaret. 2020. “Occupational (Im)Mobility in the Global Care Economy: The Case of Foreign-Trained Nurses in the Canadian Context.” *Journal of Ethnic and Migration Studies* 46 (16): 3441–56. <https://doi.org/10.1080/1369183X.2019.1592397>.
- Wooldridge, Jeffrey M. 2007. “Inverse Probability Weighted Estimation for General Missing Data Problems.” *Journal of Econometrics* 141 (2): 1281–1301.  
<https://doi.org/https://doi.org/10.1016/j.jeconom.2007.02.002>.
- World Bank Group. 2023. *World Development Report 2023: Migrants, Refugees, and Societies*. World Development Report 2023: Migrants, Refugees, and Societies. World Bank Publications. <https://doi.org/10.1596/978-1-4648-1964-3>.
- Yin, Ting;, and Keisuke Kawata. 2014. “Wage Structure of Japanese Care Worker: College Premium and Qualification Premium.” 14-J-033. RIETI Discussion Paper Series. RIETI Discussion Papers. Tokyo.

**Table 1 : Descriptive statistics**

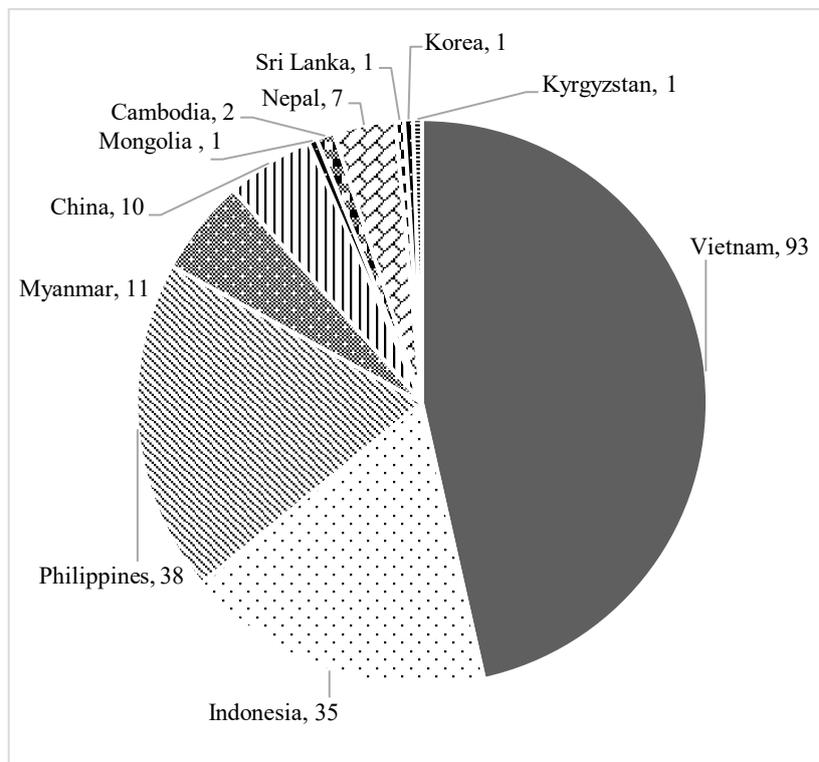
Variable	Obs	Mean	Std. Dev.
Return index (0~11:Return X years after, 12: Permanent)	200	5.945	4.319
Expected staying duration (Days: From July 1st, 2021 to Dec 31 2032(Max))	200	2263.045	1452.070
Intend to stay permanently (=1 if Yes)	200	0.25	0.434
Has a qualification in home country (=1 if Yes)	200	0.68	0.468
Has a qualification in host country (=1 if Yes)	200	0.33	0.471
Has a qualification in both countries (=1 if Yes)	200	0.225	0.419
Has a qualification only in home country (=1 if Yes)	200	0.455	0.499
Has a qualification only in host country (=1 if Yes)	200	0.105	0.307
Perceived job skill score (Max: 100 points) <sup>a</sup>	200	72.3399	16.899
Language level in 2021 (Min:1 (N5) to Max: 5 (N1)) <sup>b</sup>	200	3.315	0.877
Education years	200	13.32	2.832
Staying period from entry to Japan (Days: From entry date to July 1, 2021)	200	956.8	737.693
Gender (=1 if Female)	200	0.84	0.368
Age	200	27.715	4.433
Temporary visa holder (=1 if Yes)	200	0.46	0.500
Marriage status (=1 if Married)	200	0.175	0.381
# of children in the household	200	0.225	0.766
Works in Metropolis (=1 if Yes) <sup>c</sup>	200	0.59	0.493
Loan when coming to Japan (=1 if Yes)	200	0.44	0.498
Log-converted income in 2021	200	7.14413	0.448
Log-converted home household income in 2021	200	6.458129	1.864
Expected return at arrival(# Years later)	200	5.82911	3.047
Existed social network with home at arrival (=1 if Yes)	200	0.605	0.490
Together with the family members in Japan (=1 if Yes)	200	0.075	0.264
Monthly contacts with home in 2021 (# of days monthly (Max: 28 days))	200	10.82	10.393

*Note :*

- Regarding their perception of job skills, the respondents score their daily self-performance from 0 (“I have never done the task”) to 1 (“I cannot do the task”), 2 (“I cannot relatively do the task”), 3 (“I can relatively do the task”) to 4 (“I do the task well”) on the fifteen care-related tasks by the Likert scale. It includes cleaning, washing clothes, bedmaking, supporting for bathing, changing position for pressure area care, putting compresses, measuring body temperature, putting in eyedrops, supporting for eating and drinking, applying ointments, cutting nails, nursing the elderly with dementia, helping terminal care, helping tubal feeding and suctioning sputum. We convert to the standardized score, which is 100 points at maximum.
- We use the results of the Japanese-Language Proficiency Test (JLPT), which is a standardized test to evaluate Japanese proficiency for non-native speakers, as their language skills. It evaluates language knowledge, reading ability, and listening ability. JLPT consists of five-level tests from N5 (the most basic level) to N1 (the most advanced Level), and each level is passed if a taker gets a higher score than the threshold. In this research, we assign N5 as 1, N4 as 2, N3 as 3, N2 as 4 and N1 as 5.
- Regarding the working place, we assign the prefectures in three metropolitan areas around Tokyo (Tokyo, Saitama, Chiba, Kanagawa), Osaka (Osaka Hyogo), and Nagoya (Aichi), as "the metropolis" in this research.



**Figure 1 :** Distribution of visa types



**Figure 2 :** Distribution of countries of origin

**Table 2 : Estimation Results**

	Return index			Expected staying duration			Intend to stay permanently		
	(0~11:Return X years after, 12: Permanent)			(Days: From July 1st, 2021)			(=1 if Yes)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Has a qualification in home country	-1.775*	-1.279*	-1.189+	-602.192*	-426.851*	-398.048+	-0.126	-0.11	-0.099
	(0.717)	(0.633)	(0.629)	(238.673)	(210.890)	(209.106)	(0.077)	(0.071)	(0.071)
Has a qualification in host country	1.997**	0.222	0.138	666.278**	80.918	54.701	0.173*	0	-0.012
	(0.685)	(0.869)	(0.865)	(229.708)	(294.385)	(293.118)	(0.071)	(0.086)	(0.086)
Perceived job skill score	0.027	-0.004	-0.003	9.727	-0.825	-0.533	0.001	-0.001	-0.001
	(0.018)	(0.017)	(0.017)	(6.164)	(5.638)	(5.673)	(0.002)	(0.002)	(0.002)
Language level in 2021	0.048	-0.171	-0.215	9.467	-62.068	-76.222	0.022	-0.001	-0.007
	(0.381)	(0.362)	(0.362)	(128.069)	(118.781)	(118.517)	(0.040)	(0.043)	(0.044)
Education years	0.02	-0.021	-0.005	12.204	-1.262	4.393	-0.013	-0.018	-0.017
	(0.126)	(0.096)	(0.096)	(41.546)	(31.790)	(31.991)	(0.013)	(0.011)	(0.011)
Expected return at arrival		0.621***	0.629***		216.081***	218.637***		0.030*	0.030**
		(0.092)	(0.094)		(30.560)	(31.232)		(0.011)	(0.012)
Constant	3.107	7.203	8.101+	1225.006+	2737.516+	3013.188+	0.254	0.209	0.352
	(2.090)	(4.512)	(4.782)	(703.080)	(1545.629)	(1637.283)	(0.211)	(0.482)	(0.506)
R-squared	0.157	0.406	0.407	0.155	0.413	0.413	0.142	0.278	0.281
Controlled by Socio-economic characteristics	N	Y	Y	N	Y	Y	N	Y	Y
Controlled by Social network characteristics	N	N	Y	N	N	Y	N	N	Y
# of Obs	200	200	200	200	200	200	200	200	200

Note : + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Robust-standard error in parenthesis. Columns (1)-(6) are estimated by Ordinary Least Squares and (7)-(9) are by Linear Probability Model. Columns (2), (5) and (8) estimations are controlled by their staying duration, age, gender, visa type, marriage status, the number of children left at home, the location of the workplace, loan experience at coming to Japan, log-transformed monthly average income of the respondent and household left in the home country. In addition, columns (3), (6), and (9) include the dummy variable for whether family and friends of the respondents were in the host country at the point of entry, the dummy to currently accompany the family members in Japan and the times of monthly contacts with family members at home. All estimations are fixed by the home-country specific fixed effect. For brevity, we only show the related and significant variables.

**Table 3 : Estimation Results**

	Return index (0~11:Return X years after, 12: Permanent)			Expected staying duration (Days: From July 1 <sup>st</sup> , 2021)			Intend to stay permanently (=1 if Yes)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Has a qualification in both countries	0.221 (1.000)	-1.041 (1.057)	-1.043 (1.035)	63.811 (335.188)	-340.717 (356.913)	-340.363 (349.956)	0.046 (0.102)	-0.108 (0.106)	-0.111 (0.104)
Has a qualification only in home country	-1.609* (0.810)	-1.216+ (0.670)	-1.157+ (0.664)	-550.652* (270.531)	-406.999+ (224.200)	-386.433+ (221.569)	-0.101 (0.081)	-0.102 (0.070)	-0.1 (0.071)
Has a qualification only in host country	2.373* (1.108)	0.378 (1.177)	0.218 (1.180)	783.130* (365.088)	130.703 (396.989)	84.616 (395.735)	0.230+ (0.138)	0.021 (0.136)	-0.013 (0.143)
Perceived job skill score	0.027 (0.018)	-0.004 (0.017)	-0.003 (0.017)	9.57 (6.225)	-0.899 (5.707)	-0.577 (5.743)	0 (0.002)	-0.001 (0.002)	-0.001 (0.002)
Language level in 2021	0.051 (0.383)	-0.166 (0.365)	-0.213 (0.364)	10.637 (128.510)	-60.62 (119.656)	-75.257 (119.236)	0.022 (0.040)	0 (0.044)	-0.007 (0.044)
Education years	0.021 (0.126)	-0.02 (0.095)	-0.004 (0.096)	12.62 (41.669)	-0.947 (31.770)	4.609 (32.136)	-0.013 (0.014)	-0.018 (0.011)	-0.017 (0.011)
Expected return at arrival		0.621*** (0.092)	0.628*** (0.094)		215.845*** (30.619)	218.490*** (31.234)		0.030* (0.011)	0.030* (0.012)
Constant	3 (2.099)	7.216 (4.537)	8.102+ (4.797)	1191.782+ (704.814)	2741.677+ (1553.939)	3013.580+ (1642.098)	0.238 (0.213)	0.211 (0.485)	0.352 (0.508)
R-squared	0.157	0.406	0.407	0.155	0.413	0.413	0.142	0.278	0.281
Controlled by Socio-economic characteristics	N	Y	Y	N	Y	Y	N	Y	Y
Controlled by Social network-related characteristics	N	N	Y	N	N	Y	N	N	Y
# of Obs	200	200	200	200	200	200	200	200	200

Note : + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Robust-standard error in parenthesis. Columns (1)-(6) are estimated by Ordinary Least Squares and (7)-(9) are by Linear Probability Model. Columns (2), (5) and (8) estimations are controlled by their staying duration, age, gender, visa type, marriage status, the number of children left at home, the location of the workplace, loan experience at coming to Japan, log-transformed monthly average income of the respondent and household left in the home country. In addition, columns (3), (6), and (9) include the dummy variable for whether family and friends of the respondents were in the host country at the point of entry, the dummy to currently accompany the family members in Japan and the times of monthly contacts with family members at home. All estimations are fixed by the home-country specific fixed effect. For brevity, we only show the related and significant variables.

**Table 4 : Results (Robustness check using IPWRA)**

	Return index	Exp. Staying duration	Return index	Exp. Staying duration
	(1)	(2)	(3)	(4)
Has a qualification in home country	-1.793*** (0.517)	-594.558*** (172.376)		
Has a qualification in host country			0.209 (0.803)	109.436 (264.725)
R-squared	0.423	0.426	0.523	0.522
N	200	200	200	200

+ p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

*Note* : + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Robust-standard error in parenthesis. All columns are estimated by IPWRA estimators. The control variables of the outcome model and the treatment model include their staying duration, age, gender, visa type, marriage status, the number of children left at home, the location of the workplace, loan experience upon coming to Japan, log-transformed monthly average income of the respondent, log-transformed monthly average income of household left in the home country, the dummy variable for whether family and friends of the respondents were in the host country at the point of entry, the dummy to currently accompany the family members in Japan and the times of monthly contacts with family members at home. All estimations are fixed by the home-country specific fixed effect. For brevity, we only show the related variables.

**Appendix A : Classification of the visa categories**

	<b>EPA</b>	<b>Nursing care</b>	<b>Technical Intern Trainee</b>	<b>Specified Skilled</b>
Classification	Permanent migrants (High-skilled immigrant workers)		Temporary migrants (Low-skilled immigrant workers)	
Purpose of System	Acceptance to acquire national qualification of certified care workers (enhance international cooperation)	Acceptance of foreign workers in specialist/technical areas	Transfer of skills from Japan to another country (international contribution)	Acceptance of foreign nationals with specific expertise/skills to address labor shortage
Year of start	2008	2017	2017	2019
# of visa holders	3,820 (in Dec 2020)	1,714 (in Dec 2020)	12,068 (in Mar 2021)	3,947 (in Sep 2021)
Need a qualification of national certified care workers (CCWs)	No need but they aim to pass an exam	Need	No need	No need
Duration to stay	Permanent after passing the exam (4 years if fail exam)	Permanent	Max. 5 years (Able to renew to Specified")	Max. 5 years
Min. JLPT level	N3	N2	N4	N5
Accompanying with family	No (Permitted after the pass)	Yes	No	No

*Note* : Edited by the authors. Source from MHLW (2019b) for the description of each visa. Source from Immigration Services Agency of Japan (EPA, NC & SS) and Organization for Technical Intern Trainee (TITP) for the numbers of each visa holder. The Japanese-Language Proficiency Test (JLPT) is a standardized test to evaluate Japanese proficiency for non-native speakers. It evaluates language knowledge, reading ability, and listening ability. JLPT consists of five-level tests from N5 (the most basic level) to N1 (the most advanced Level), and each level is passed if a taker gets a higher score than the threshold.

## **Appendix B : Sampling technique**

Since we could not locate personal information for every FCW in the nation, we recruited the respondents through the elderly care facilities where FCWs worked and were likely to work. Using the open list of elderly care facilities' names and addresses by the MHLW, we selected the facilities to request their participation in the study by several methods. First, we used lists of successful examinees of the CCW, which were released between FY2012 and FY2020. The MHLW publishes the facility names for each passed applicant in these lists. From those lists, we selected 436 elderly care facilities. Secondly, we looked for news reports and websites about foreign care workers. In addition to the facilities selected using the first method, we discovered 168 other facilities that employed FCWs. Third, we used the MHLW open data of the elderly care facilities at random. We obtained lists of facilities in the top ten prefectures for the number of Nursing Care visa-holders according to the recent statistics offered by the Immigration Services Agency of Japan. We randomly chose an additional 3,936 facilities on the received list. Consequently, in August and September of 2021, we contacted 4,540 facilities in total in Japan via postal mail using these three methods. In the postal mail, we distribute the flyers about the survey designed for FCWs. The respondents could access the online survey using the URL or QR code on the flyer. As a reward for the survey, we offered a mobile coupon worth JPY500 (about US\$5), given that the minimum hourly pay in Japan is roughly JPY1,000 and that we anticipated respondents would complete each survey in about half an hour.

## Abstract in Japanese

### 要 約

労働集約型産業などに従事する一時的移住者（出稼ぎなどを目的とする外国人労働者）は、受入国や母国の経済成長や労働市場への貢献が期待される一方で、彼らの母国への帰国動機は曖昧である。多くの決定要因が検討される中で、とりわけ、スキルの証明としての職務資格が移住行動にもたらす効果について調査する必要がある。本研究では、日本で介護分野に従事する外国人労働者から収集した一次データを用いて、外国人労働者が母国や受入国で保有し、技能のシグナルとしての機能を果たす職務資格が、帰国意向にどのような影響を与えるか定量的に分析した。その結果、母国における職務資格を有する外国人労働者は、そうではない外国人労働者と比べて、より早く帰国を検討している傾向があることがわかった。この結果は、労働市場の研究におけるシグナリング効果に関する議論と一致するものであり、職務資格は一時的移住者の帰国行動における重要な要因の一つとして機能していることを示唆している。

キーワード：帰国，移民，職務資格，高齢者介護，日本

JEL コード：J24, J44, J61, O15, O53