

# **Attracting International Graduates to Work in Japan**

—A Study on the International Student Graduates' Choice of Workplace

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## —A Study on the International Student Graduates' Choice of Workplace

Research Report of AGI Basic Research Project<sup>1</sup>

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**Abstract:** In recent years, both the Japanese central and local governments have made significant efforts to attract international students and retain them to work in Japan. However, the policies have not been as effective as anticipated, primarily due to the lack of understanding of international graduates' decision-making process in choosing where to work. This research report for 2022 provides a literature review and an overview of the present situation of international graduates working in Japan. Our findings indicate that the majority of international graduates retained in Japan come from Asia, particularly from China, Vietnam, Nepal, and Korea. These graduates tend to concentrate in Tokyo and Osaka Metropolitan Areas, but the numbers have been decreasing following the outbreak of COVID-19. On the other hand, regions outside the four main metropolitan areas have seen an increase in both the number and share of international graduates after the pandemic. In the research report for 2023, I will conduct empirical studies on the factors that influence their choice of workplace.

**Keywords:** international graduates, Japan, workplace

## **1. Research background**

### **1.1 Significance of promoting the employment of international graduates**

In recent decades, attracting international students has been a significant priority for the Japanese government and society. In August 2022, Prime Minister Kishida proposed expanding the number of international students even further, surpassing the previous target of at least 300,000 annually by 2020. Although the exact figure has not been confirmed, the proposed goal is undoubtedly higher than 300,000. Additionally, improving employment prospects for international graduates has become a national strategy for Japan. The reasons for this new objective and policy are as follows.

Firstly, Japan is grappling with a significant population challenge caused by declining fertility rates and an aging society. The working-age population is rapidly decreasing and will continue to fall, causing an increase in the per capita social security burden, reduced consumer demand, lower production, and ultimately a drag on the economy. The government has taken various measures to alleviate the labor force shortage, such as increasing the fertility rate and encouraging women and the elderly to enter the job market. However, it will take at least two decades for the policy of increasing the fertility rate to have an impact on the working-age population. Additionally, while

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<sup>1</sup> This research report represents the first stage of the project, "Attracting International Graduates to Work in Japan", which is scheduled to run from November 2022 to March 2023. The second stage of the project is planned for April 2023 to March 2024.

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increasing the participation of women and the elderly in the job market can help to some extent, there is a limit to the increase in domestic labor supply. Therefore, Japan urgently needs to attract foreign workers to mitigate the labor shortage and sustain its economy.

Secondly, the introduction of overseas workers has sparked various concerns in Japanese society. Similar to other developed countries, unskilled and low-skilled workers are generally unwelcome due to limited economic outputs and high integration costs. As an alternative, host countries prefer to attract highly-skilled workers as a more pragmatic way to meet labor market needs. International graduates, perceived as highly-skilled migrant workers, have received increasing interest from developed countries. However, the retention rate of international graduates in Japan remains low, despite over half expressing a desire to work there. According to JASSO, while over half (54.9% in 2019, 58.0% in 2021) of international graduates wish to work in Japan (JASSO, 2020a, 2022a), the actual retention rate is only around 30% (36.9% in 2019, 31.1% in 2020) (JASSO, 2021b, 2023b). Japan's stimulus policies appear ineffective in attracting and hiring them. With the Kishida government promoting the acceptance of international students, it is crucial to urgently formulate supportive policies to employ international graduates.

Thirdly, the distribution of international graduates within Japan is uneven, and there have been limited studies on this topic. As a preliminary hypothesis, factors such as wage levels, employment opportunities, labor market size, cultural tolerance, social networks, and previous experiences may influence their choice of workplace. However, the literature is insufficient to reach a consensus. Moreover, there is a lack of research on the distribution of international graduates following the COVID-19 pandemic, which has altered people's preferences for work and living environments.

This research project seeks to investigate two key issues: the low retention rate of international graduates in Japan and the uneven distribution of these graduates across different prefectures. The first stage of the project focus on providing an overview of the current situation of international graduates in Japan, examining the research background and reviewing existing literature on their locational choices. In the subsequent stage next year, I will analyze the factors that influence international graduates' choice of a country, as well as their choice of workplace within Japan. The results of these analyses will yield valuable insights into the formulation of effective policies.

## **1.2 Evolution of Japan's policy for attracting foreign students**

Since the 1990s, developed countries have been competing to attract outstanding international students, who are viewed as potential highly skilled workers and valuable assets by governments and economic circles.

Japan first implemented the policy of accepting international students through the "100,000 International Students Program," proposed by Prime Minister Nakasone in 1983. At the time of Japan's rapid economic growth, the program aimed to cultivate international students to contribute to the world's stability and development. Various measures were taken to increase the number of students recruited, and the goal of 100,000 students was reached in 2003. Afterward, the government shifted its focus to ensuring the quality of international students (Terakura, 2009) and placed less emphasis on increasing their numbers.

As social and economic globalization rapidly develops, major developed countries face increasingly fierce competition for talent. It has been gradually recognized that recruiting talented individuals from higher education is key to winning the international "brain competition." In response, Japan has readjusted its position on the significance of receiving international students. While international contributions were previously emphasized, the national strategy now includes

attracting more international students to obtain talent and enhance Japan's global competitiveness. In other words, national interests are taken into account. As a result, the government has determined to further expand the number of international students. In 2008, Prime Minister Fukuda introduced the "300,000 International Students" plan, aiming to achieve the goal by 2020. The plan was part of Japan's internationalization strategy, which seeks to construct a more open country and expand the flow of people, goods, money, and information between Asia and the rest of the world. Subsequently, the number of international students accepted in Japan exceeded the original plan, reaching 312,214 in 2019, which is ahead of the original plan.

Since the onset of the COVID-19 pandemic in 2020, countries have implemented stricter border control measures. As a result, the number of international students enrolled in Japan has sharply decreased, with only 242,444 in 2021. In August 2022, Prime Minister Kishida acknowledged the need to reassess the "300,000 International Students" plan and develop a new strategy to increase the number of international students. He also directed the government to consider measures to improve the working environment for international graduates in Japan and promote the internationalization of Japanese education.

### **1.3 Japan's measures to promote the employment of international graduates**

The most successful program in Japan to support employment of international graduates was the "Asian Talent Fund Conception" which ran from 2007 to 2012. The retention rate of the international graduates who participated in this program was twice that of ordinary international graduates. However, the program was canceled in 2009 due to the small number of participants and its low cost-effectiveness (Otsuki et al., 2014).

The latest supportive policies were the "Comprehensive Countermeasures for Recruiting and Integrating with Foreign Talents," approved by Japan's Cabinet in December 2018. The Cabinet agreed that the government and society need to take a wide range of measures to facilitate the employment of international graduates. These measures include loosening the restrictions of the Status of Residence, providing support in universities, improving recruitment activities, and setting up talent cultivation plans in enterprises. The Japanese government has also set a new goal in the Japan Revitalization Strategy 2016 to increase the retention rate of international graduates from 30% to 50%, which requires considerable effort.

Regarding specific policies, Japan has eased restrictions on the change of international graduates' Status of Residence by expanding the types of occupations they can work in and simplifying the recruitment documents required by small and medium-sized enterprises. Enterprises are also encouraged to lower their Japanese language ability requirements based on business needs, rather than always requiring a high level. Educational institutions such as colleges, universities, and specialized schools are urged to enhance their supportive employment measures for international graduates (Kubo, 2019). Additionally, industry-university-government collaborations have developed specific measures to provide necessary skills for international students seeking employment, including business Japanese language education, career education (such as Japanese business theory), and medium- to long-term internship systems (MEXT, 2019).

Based on these situations, promoting the employment of international graduates in Japan has received significant attention. Given the country's low fertility and aging society, local areas are facing a more severe population problem compared to metropolitan areas. As a result, it has become crucial for local municipalities to attract international graduates, making it an important research topic for improving competitiveness in these regions.

## 2. Overview of international graduates working in Japan

### 2.1 Number of international graduates working in Japan and its changes

According to a survey conducted by the Japan Student Services Organization (JASSO), out of the 68,715 international graduates in 2020, 20,582 stayed in Japan for work, accounting for 31.1% of the total (JASSO, 2022b). The retention rate, which is the proportion of international graduates who work in Japan to all international graduates, averaged 25.9% from 2004 to 2020. It increased rapidly from 19.7% in 2004 to 28.8% in 2007 and then sharply dropped to its lowest point of 16.8% in 2009. Subsequently, the retention rate increased continuously until reaching its peak of 35.6% in 2019, but decreased again after the outbreak of COVID-19, reaching 30.0% in 2021.

Excluding those who continue to study, whose jobs have not been determined, or whose information is missing, the average proportion of international graduates who work in Japan to all those who entered the job market is 73.5%. The proportions generally range from 60% to 80%, indicating that Japan is an attractive country to work in compared to one's home country or a third country. In formulating attractive policies in the next stage, Japan needs to focus on those who are unable to find employment after graduation, rather than those who choose to work in other countries.

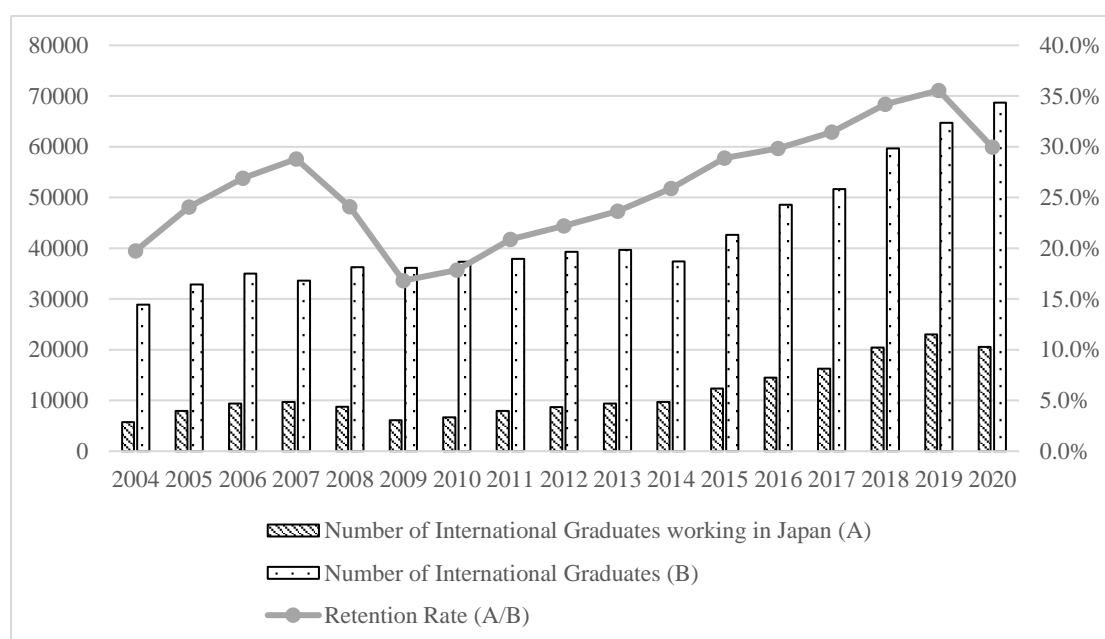


Figure 1. Change in the Number and Share of International Graduates Working in Japan in 2004-2020

Notes: Graduates from Japanese language institutes were not included. The following data in this report were handled in the same way.

Data Source: JASSO (2005-2021b)

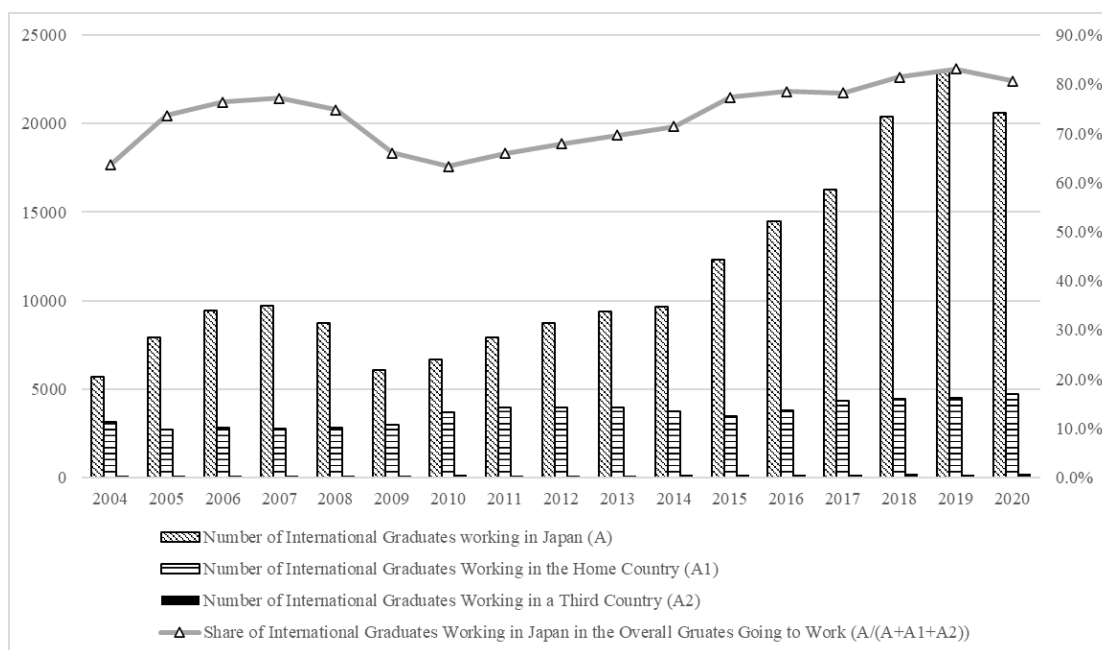


Figure 2. Change in the Share of International Graduates Working in Japan in the Overall International Graduates Going to Work in 2004-2020

Data Source: JASSO (2005-2021b)

## 2.2 The portraits of international students working in Japan

In terms of the study level, the largest number of international graduates working in Japan in 2021 were from Specialized Training Colleges (Professional Courses), with 11,289 individuals and a retention rate of 34.6%. The second-largest group were graduates from Bachelor's Programs, comprising 4,357 individuals with a retention rate of 32.4%. Master's Programs had the third-largest number of international graduates working in Japan, with 3,021 individuals and a retention rate of 25.0%. Other study levels had the following number of international graduates working in Japan and corresponding retention rates: Doctoral Programs with 992 individuals and a retention rate of 27.5%; Junior Colleges with 553 individuals and a retention rate of 56.2%; Professional Degree Programs with 302 individuals and a retention rate of 23.1%; Preparation Curriculums with 64 individuals and a retention rate of 3.1%; and Technical Colleges with 4 individuals and a retention rate of 3.1%.

Table 1. Number and the Retention Rate of International Graduates Working in Japan in 2020 (By Study Level)

Study Level	Number of International Graduates Working in Japan (A)	Number of International Graduates (B)	Retention Rate (A/B)
Doctoral Program	992	3,907	27.5%
Master's Program	3,021	13,099	25.0%
Professional Degree Program	302	1,375	23.1%
Bachelor's Program	4,357	14,150	32.4%
Junior College	553	991	56.2%
Technical College	4	127	3.1%
Specialized Training College (Professional Course)	11,289	33,016	34.6%
Preparation Curriculum	64	2,050	3.1%
Total	20,582	68,715	31.1%

Data Source: JASSO (2021b)

In terms of the academic field, international graduates working in Japan mostly graduated in the field of Social Science, with a total of 3,945 persons, accounting for 33.3% of all international graduates in this field. Engineering is the second most popular field, with 2,230 persons and a retention rate of 31.7%. The third largest source of international graduates working in Japan comes from the field of Humanities, with 1,114 persons and a retention rate of 28.3%. Other fields, in descending order, include 283 persons in Art, 232 persons in Health Care, 205 persons in Physical Science, 196 persons in Agronomy, 134 persons in Education, 6 persons in Household Management, and 824 persons in other fields (JASSO, 2022b).

Table 2. Number and the Retention Rate of International Graduates Working in Japan in 2020 (By Academic Field)

Academic Field	Number of International Graduates Working in Japan (A)	Number of International Graduates (B)	Retention Rate (A/B)
Humanities	1,114	4196	28.3%
Social Science	3,945	12679	33.3%
Physical Science	205	1122	19.1%
Engineering	2,230	7455	31.7%
Agronomy	196	1173	17.7%
Health Care	232	1096	23.0%
Household Management	66	273	24.2%
Education	134	642	22.3%
Art	283	1585	19.3%
Others	824	3428	25.6%
Total	9,229	33649	29.3%

Data Source: JASSO (2021b)



### **3. Literature review on affecting factors of international graduate's**

#### **choice of workplace**

##### **(1) Factors influencing the choice of a country**

Few studies have specifically examined international graduates' locational choices, but the decision to stay in Japan is closely related to the question of whether to return to one's home country. Therefore, the factors that influence retention choices are partially related to return migration, which is a crucial component of international graduates' movements.

There is an abundance of literature on return migration, with the neoclassical economics perspective being the most well-known. According to this viewpoint, a rational individual decides to migrate when a cost-benefit analysis indicates a positive net return. A higher expected benefit increases the probability of migration, while a higher cost decreases it (Sjaastad, 1962; Massey et al., 1993). The expected wage level and employment probability play a significant role in determining whether an individual will move or not (Massey et al., 1993). In this study, an international graduate's choice of country might be affected by the wage level and unemployment rate in their home country compared to those in Japan. Previous studies have introduced an interaction term that multiplies wages and employment probabilities, which is known as the Todaro version of the neoclassical theory (Todaro, 1980; Greenwood, 1985).

As to the cost of international migration, the most mentioned aspect is transportation cost. Generally, geographic proximity facilitates the exchange relationship. As a result, the spatial distance between countries is often used as a proxy for transportation costs in statistical models, such as in Ranis and Fei (1961). Another cost is the loss of human capital when crossing borders. Human capital acquired at home typically transfers imperfectly abroad due to differences in language and culture between the home and host countries (Chiswick, 1979; Massey et al., 1993). Similarly, in the case of international graduates choosing to stay in Japan, the human capital they acquired abroad can only transfer imperfectly back to their home country.

Another aspect to consider when adjusting the explanatory model of international graduates' locational choice is the decision-making unit. The neoclassical economics theory generally conceives of movement as an individual decision, while the new economics theory views migration as a household decision (Massey et al., 1993). Marital status and children are considered important factors that affect the decision to move, as shown in studies conducted in Norway (Sørli et al., 2012), Germany (Dolls & Mehles, 2021), and Japan (Watanabe, 1978; Ito, 2001). In general, international graduates are more likely to choose a country or city where their spouse or children reside to reunite with family members. However, the new economics theory suggests that international migration decisions may be made by households to diversify risks and overcome constraints associated with various market failures (Massey et al., 1993). This implies that households have strong incentives to engage in both migration and local activities in their country of origin. Therefore, an international graduate might choose a country where their spouse does not reside. Hypotheses derived from existing theories are contradictory and require empirical testing.

##### **(2) Factors influencing the choice of workspace within a host country**

The choice of workplace for international graduates in Japan is an extension of their international migration. In a recent empirical study, Dai (2020) examined international graduates' choice of

prefecture using data from the 2015-2018 JASSO survey. The study found that the number of international graduates working in each prefecture is positively correlated with three factors: the total population in the prefecture (indicating the scale of the labor market), the ratio of job openings to job applicants (reflecting employment opportunities), and the proportion of foreigners in the total population (indicating the degree of tolerance for diverse cultures).

Suehiro's (2013) survey of international students in Tochigi Prefecture found that respondents tended to work in Tochigi Prefecture and the nearby metropolitan area with which they were familiar. This preference for familiar regions contradicts the notion of international graduates as globally talented individuals. It indicates that, on an aggregate level, the number of universities or the reservoir of international students should be positively correlated with international graduates' choice of workplace.

The network theory offers additional factors that explain the locational choice of international graduates. Interpersonal ties with prior migrants from the same home country can constitute a form of social capital, compensating for incomplete information about the host country (i.e., a foreign country). This social capital can help migrants access employment opportunities in the host society, reducing the costs and risks of living in a foreign country. Eventually, the existence of migrant networks may increase the expected net returns. It indicates that migrants may choose where their friends or relatives live, or where the number of foreigners from the same home country is higher.

Based on the above discussions, we can see that existing research on international graduates' choice of workplace has not reached a consensus. With the outbreak of COVID-19, people's preferences for working and living environments have shifted. However, previous studies have not examined the impact of major crises like COVID-19 on people's locational choices. Have international graduates been affected? Do they behave differently compared to the pre-COVID-19 period when choosing where to work? Answers to these questions are crucial in understanding locational choice behavior in the new era. They can assist the Japanese government in formulating more effective policies to attract international talent.

## 4. The international graduates' choice of whether to stay in Japan

### (1) Origin regions of international graduates

In terms of the origin region, Asia has the largest number of international graduates working in Japan, with 19,909 persons and a retention rate of 31.4% (out of 65,714 Asian graduates). The majority of the 20,582 international graduates who stayed in Japan for work are from Asia, accounting for 96.7%. The numbers of retained students from other regions, from largest to smallest, are 317 from Europe, 112 from Africa, 67 from Central and South America, 67 from North America, 64 from the Middle and Near East, 24 from Oceania, and 3 from other regions (JASSO, 2022b).

Table 3. Number and the Retention Rate of International Graduates Working in Japan in 2020 (By Region of Home Country)

Region of the Home Country	Number of International Graduates Working in Japan (A)	Number of International Graduates (B)	Retention Rate (A/B)	Share (A/ΣA)
Asia	19,909	65714	31.4%	96.7%
Middle east	64	337	20.9%	0.3%
Africa	112	614	20.0%	0.5%
Oceania	24	98	27.6%	0.1%
North America	67	320	23.4%	0.3%
South and Central America	86	331	27.3%	0.4%
Europe	317	1298	26.0%	1.5%
Others	3	3	100%	0.0%
Total	20,582	68715	31.1%	100%

Data Source: JASSO (2021b).

### (2) Origin countries of international graduates

There are detailed data from the above-mentioned JASSO Survey. The detailed data from 2015 to 2017 are provided by the Social Science Japan Data Archive, The University of Tokyo. Table 4 provides detailed data on the top 20 countries with the highest number of international graduates working in Japan in 2017. China had the largest number of workers, with 7,538 persons, representing nearly half (46.4%) of all international graduates working in Japan in 2017. Three other countries had over 1,000 graduates working in Japan: Vietnam with 2,841 persons (17.5%), Nepal with 1,986 persons (12.2%), and Korea with 1,051 persons (6.5%).

Retention rates of international graduates working in Japan varied by origin country. Of the 51,636 international graduates in 2017, 16,242 remained in Japan for employment, resulting in an average retention rate of 31.5%. The countries with retention rates higher than the average, from highest to lowest, were Sweden, Nepal, Korea, Sri Lanka, Russia, China, India, and Myanmar.

Table 4. Number, Retention Rate and Share of International Graduates Working in Japan (By Origin Country), 2017

Country	Number of International Graduates Working in Japan (A)	Number of International Graduates (B)	Retention Rate (A/B)	Share (A/ΣA)
China	7,538	22,744	<b>33.1%</b>	46.4%
Vietnam	2,841	9,043	31.4%	17.5%
Nepal	1,986	5,211	<b>38.1%</b>	12.2%
Korea	1,051	2,862	<b>36.7%</b>	6.5%
Taiwan	583	1,995	29.2%	3.6%

Country	Number of International Graduates Working in Japan (A)	Number of International Graduates (B)	Retention Rate (A/B)	Share (A/ΣA)
Sri Lanka	323	939	<b>34.4%</b>	2.0%
Myanmar	217	682	<b>31.8%</b>	1.3%
Indonesia	213	1,204	17.7%	1.3%
Malaysia	199	851	23.4%	1.2%
Tie	194	1,029	18.9%	1.2%
Mongolia	116	477	24.3%	0.7%
Bangladesh	103	488	21.1%	0.6%
India	88	270	<b>32.6%</b>	0.5%
Hong Kong	82	315	26.0%	0.5%
Philippines	75	273	27.5%	0.5%
USA	61	241	25.3%	0.4%
Uzbekistan	38	125	30.4%	0.2%
Russia	36	108	<b>33.3%</b>	0.2%
France	32	124	25.8%	0.2%
Sweden	28	63	<b>44.4%</b>	0.2%
Others	438	2,592	16.9%	2.7%
Total	16,242	51,636	<b>31.5%</b>	100%

Data Source: Arranged by the Author based on JASSO (2018b)

Notes: The data for this secondary analysis, "Survey on International Students' Career and Academic Degrees, 2017, JASSO" was provided by the Social Science Japan Data Archive, Center for Social Research and Data Archives, Institute of Social Science, The University of Tokyo.

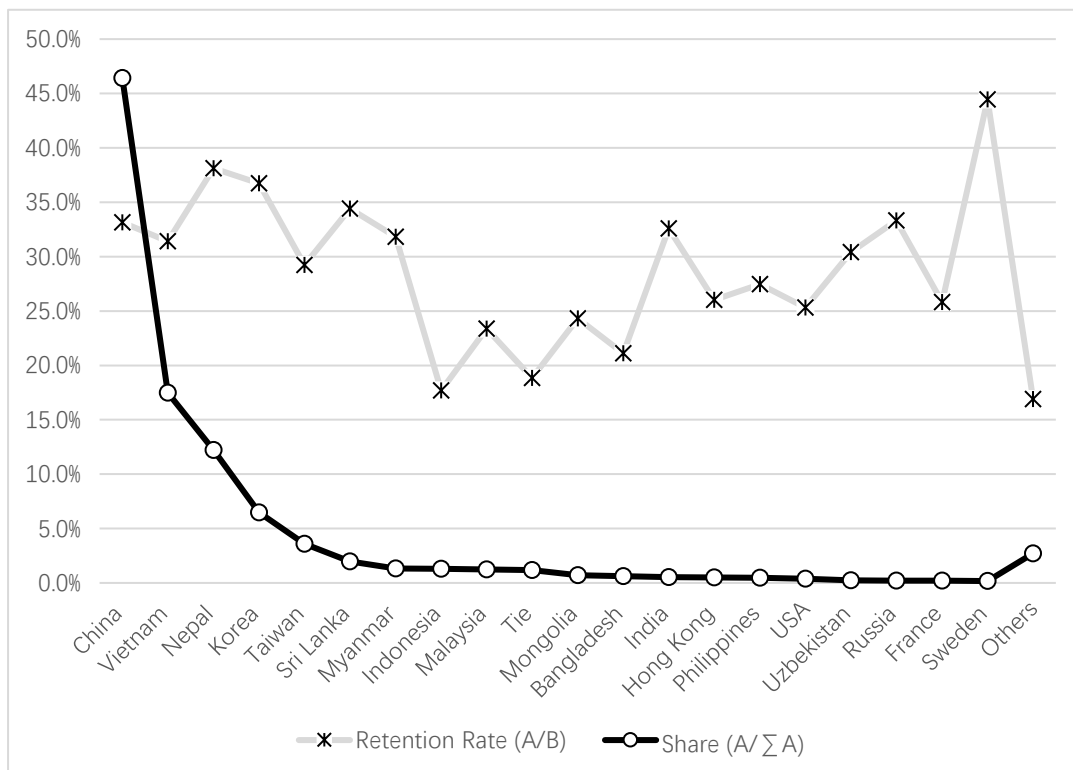


Figure 3. Retain Rate and Share of International Graduates Working in Japan (By Origin Country), 2017

Data Source: Arranged by the Author based on JASSO (2018b)

## 5. The international student's choice of workplace within Japan

### 5.1 Overall distribution characteristics

The Immigration Services Agency of Japan (ISAJ) has provided statistics on international graduates who have changed their Status of Residence. The number of international graduates in each prefecture is listed in Table 5. The top five prefectures with the largest numbers are Tokyo-to, Osaka-fu, Saitama-ken, Kanagawa-ken, and Aichi-ken.

**Table 5.** Number of International Graduates Working in Each Prefecture in 2009~2021

Prefecture	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Hokkaido	95	90	127	104	136	160	181	261	282	259	317	385	372
Aomori-ken	5	6	8	11	8	4	8	13	15	13	26	32	39
Iwate-ken	6	6	9	8	17	7	12	6	11	19	22	30	71
Miyagi-ken	76	74	54	46	96	122	113	166	135	195	200	237	264
Akita-ken	4	7	3	7	5	9	6	4	10	6	16	12	31
Yamagata-ken	4	17	12	7	9	11	12	30	46	43	52	45	56
Fukushima-ken	15	24	15	14	18	30	22	47	78	117	112	84	135
Hokkaido & Tohoku Region	205	224	228	197	289	343	354	527	577	652	745	825	968
Ibaraki-ken	111	125	133	137	162	155	181	208	335	326	452	545	603
Tochigi-ken	46	50	65	106	87	73	104	169	224	244	310	289	443
Gumma-ken	65	62	72	117	225	105	325	484	539	531	469	419	561
Saitama-ken	320	282	282	454	447	471	530	742	940	1,042	1,278	1,308	1,552
Chiba-ken	246	230	280	312	393	304	473	587	820	976	1,328	1,237	1,299
Tokyo-to	5,050	3,851	4,088	5,254	5,359	6,140	7,626	9,265	9,915	11,971	13,763	12,237	10,280
Kanagawa-ken	626	474	488	596	759	854	808	1,088	1,278	1,618	1,939	1,821	1,516
Kanto Region	6,464	5,074	5,408	6,976	7,432	8,102	10,047	12,543	14,051	16,708	19,539	17,856	16,254
Niigata-ken	38	42	42	62	61	61	51	62	62	66	98	141	176
Toyama-ken	14	21	18	43	32	38	50	56	65	70	82	103	119
Ishikawa-ken	36	37	25	41	54	39	61	63	55	69	91	114	131
Fukui-ken	15	21	12	26	27	17	20	25	36	55	83	117	109
Yamanashi-ken	51	49	71	47	47	35	63	80	123	136	172	157	165
Nagano-ken	63	37	36	72	46	63	76	74	113	127	183	189	206
Gifu-ken	45	48	67	111	76	88	96	97	259	191	217	219	309
Shizuoka-ken	97	113	165	188	190	183	204	255	349	410	616	754	701
Aichi-ken	518	371	450	667	622	665	746	949	991	1,183	1,381	1,196	1,306
Chubu Region	877	739	886	1,257	1,155	1,189	1,367	1,661	2,053	2,307	2,923	2,990	3,222
Mie-ken	68	46	57	100	98	77	63	81	96	117	251	200	304
Shiga-ken	15	21	30	40	35	45	52	52	127	142	195	133	173
Kyoto-fu	117	161	187	238	289	377	385	450	657	701	662	591	565
Osaka-fu	855	694	832	970	1,084	1,354	1,614	1,989	2,228	2,598	3,213	3,091	2,673
Hyogo-ken	215	189	211	234	245	301	343	461	561	596	659	854	1002
Nara-ken	23	30	19	33	26	30	51	65	72	86	108	127	143

Prefecture	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Wakayama-ken	10	14	19	15	15	26	30	21	28	23	66	100	175
Kinki Region	1,303	1,155	1,355	1,630	1,792	2,210	2,538	3,119	3,769	4,263	5,154	5,096	5,035
Tottori-ken	4	9	9	11	15	4	13	12	10	8	8	33	36
Shimane-ken	2	5	3	4	3	9	9	5	8	16	33	19	62
Okayama-ken	74	59	68	92	116	69	132	133	157	167	190	298	397
Hiroshima-ken	110	65	77	95	118	149	199	209	241	305	382	481	511
Yamaguchi-ken	35	29	21	22	24	16	32	42	36	45	78	116	102
Tokushima-ken	7	8	5	5	12	14	10	10	9	14	11	31	41
Kagawa-ken	19	10	19	29	29	34	34	34	46	33	61	85	114
Ehime-ken	16	4	11	19	24	31	37	37	38	30	68	59	81
Kochi-ken	1	3	0	5	9	6	6	9	9	15	19	26	31
Chugoku & Shikoku Region	268	192	213	282	350	332	472	491	554	633	850	1,148	1,375
Fukuoka-ken	279	274	293	404	402	475	525	703	892	781	929	993	1118
Saga-ken	13	13	9	9	13	11	10	21	34	34	62	63	139
Nagasaki-ken	25	20	17	38	42	51	36	47	59	49	84	89	112
Kumamoto-ken	43	34	43	44	52	54	56	62	93	83	113	138	229
Oita-ken	55	52	38	46	40	64	95	52	68	42	106	105	138
Miyazaki-ken	4	9	5	6	6	10	10	6	11	29	28	40	51
Kagoshima-ken	9	17	24	13	12	34	37	45	32	30	48	79	142
Okinawa-ken	39	28	28	46	40	62	88	135	175	233	317	255	147
Kyushu & Okinawa Region	467	447	457	606	607	761	857	1,071	1,364	1,281	1,687	1,762	2,076
Unknown	0	0	39	21	22	21	22	23	51	98	49	12	44
Total	9,584	7,831	8,586	10,969	11,647	12,958	15,657	19,435	22,419	25,942	30,947	29,689	28,974

Data Source: ISAJ (2015-2022)

#### (1) Geographic distribution by region

Looking at the regional distribution, in 2021, more than half of the international graduates working in Japan were concentrated in the Kanto Region, with a total of 16,254 graduates, accounting for 56.1% of the total. The Kinki Region had the second-highest number of graduates, with 5,035 persons employed, accounting for 17.4%. The Chubu Region was third, with 3,222 employed, accounting for 11.1%. In the Kyushu & Okinawa Region, 2,076 persons were employed, accounting for 7.2%. The remaining two regions are Chugoku & Shikoku Region and Hokkaido & Tohoku Region, with 1,375 persons (4.7%) and 968 persons (3.3%), respectively.

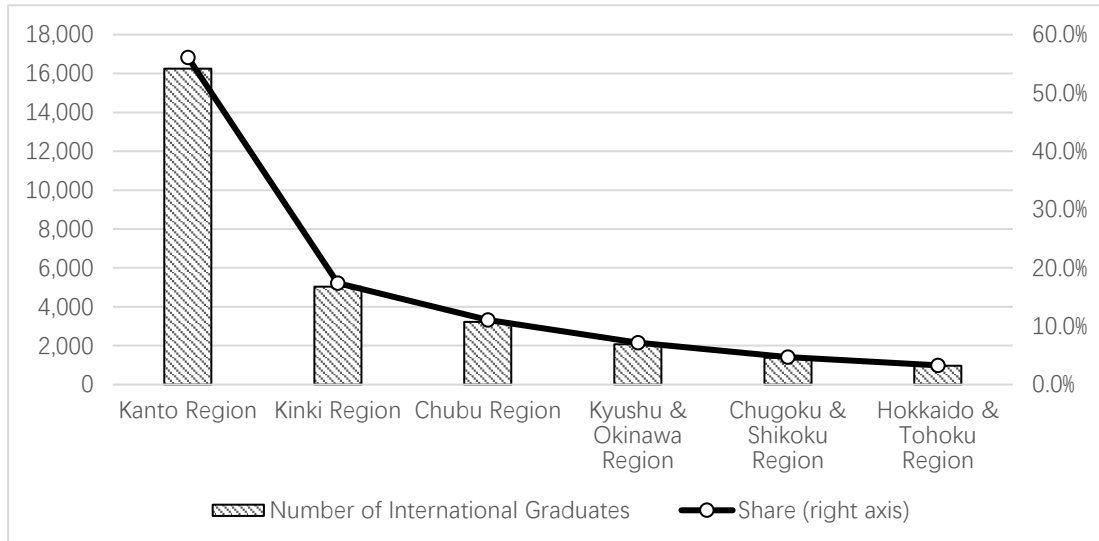


Figure 4. Number of International Graduates Working in Each Prefecture in 2021

Data Source: Arranged by the Author Based on ISAJ (2022)

(2) Geographic distribution by prefecture: top 10 prefectures

Looking at the distribution by prefecture, Tokyo-to housed the largest number of international graduates working in Japan, with 10,280 persons employed, accounting for over a third (35.5%) of all graduates working in Japan in 2021. Although significantly fewer than in Tokyo, Osaka-fu followed as the second-highest with 2,673 persons employed, with only 9.2% of the total. Saitama-ken held the third-highest number of international graduates, with 1,552 persons employed, accounting for 5.4%. The remaining top 10 prefectures with the most international graduates, in descending order, were Kanagawa-ken, Aichi-ken, Chiba-ken, Fukuoka-ken, Hyogo-ken, Shizuoka-ken, and Ibaraki-ken.

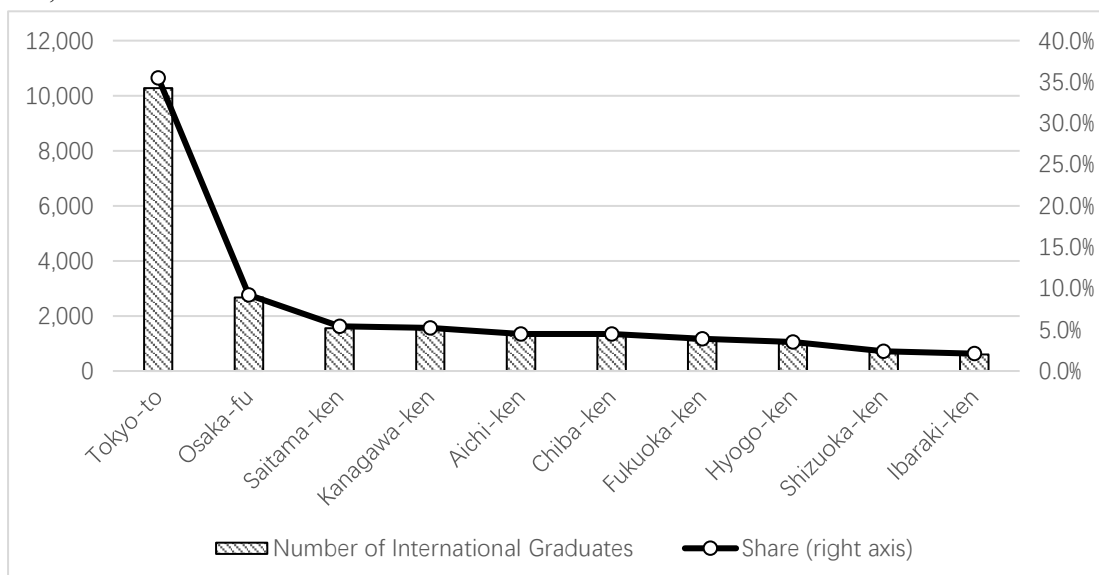


Figure 5. Number of International Graduates Working in 10 Top Prefectures in 2021

Data Source: Arranged by the Author Based on ISAJ (2022)

### (3) Geographic distribution by metropolitan area

Looking at the distribution by metropolitan area, more than three-quarters (76.3%) of all international graduates working in Japan in 2021 were concentrated in the four main metropolitan areas. The Tokyo metropolitan area had the highest number of international graduates, with 14,647 persons employed, accounting for more than half (50.6%) of the total. The second-highest number of international graduates was in the Osaka metropolitan area, with 4,383 persons employed, accounting for 15.2% of the total. The Nagoya metropolitan area had 1,919 employed graduates, accounting for 6.6%, while the Fukuoka metropolitan area had 1,118 employed graduates, accounting for 3.9% of the total.

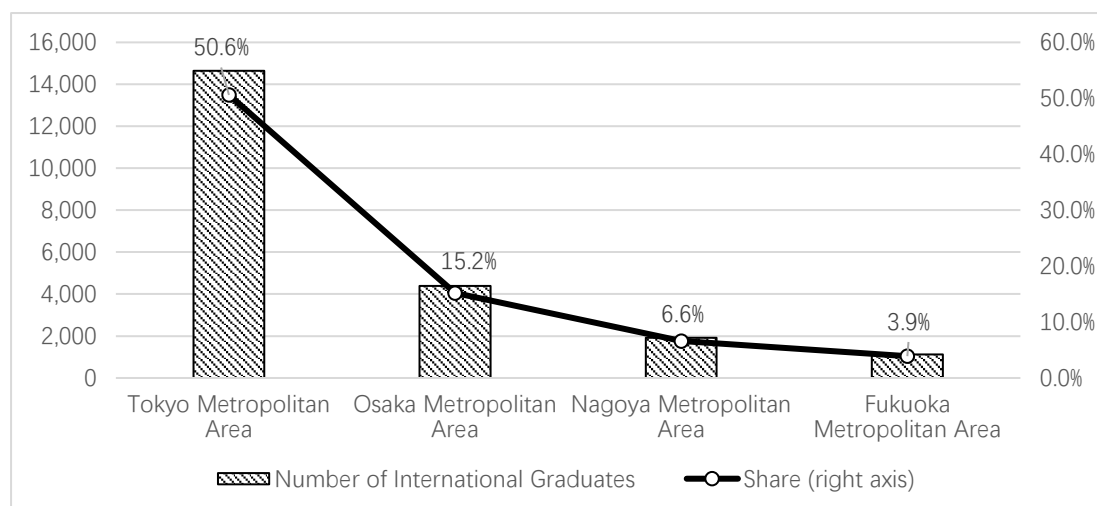


Figure 6. Number of International Graduates Working in 4 Metropolitan Areas in 2021

*Notes: The data of the Tokyo metropolitan area is a sum of that in Tokyo-to, Saitama-ken, Chiba-ken, and Kanagawa-ken. The data of the Osaka metropolitan area (aka Kinki area) is a sum of that in Kyoto-fu, Osaka-fu, Hyogo-ken, and Nara-ken. The data of the Nagoya metropolitan area (aka Chukyo area) is the sum of that in Gifu-ken, Aichi-ken, and Mie-ken. The data of the Fukuoka metropolitan area is that of Fukuoka-ken (Kitakyushu city included).*

*Data Source: Arranged by the Author Based on ISAJ (2022)*

## 5.2 Changes in the distribution

### (1) Change in distribution by region

In terms of international graduates working in Japan, the number of individuals in five of the six regions declined from 2009 to 2010 (with the exception of the Hokkaido & Tohoku Region with the least number of individuals), but then increased consistently from 2011 to 2019. However, after the COVID-19 pandemic, the two regions with the largest number of graduates (the Kanto Region and the Kinki Region) experienced a substantial drop in 2020, which continued into 2021. The Chubu Region has the third-largest number of international graduates, and after a slight decline in 2020, it quickly rebounded to an even higher level than before the pandemic in 2021. Although the last three regions (the Kyushu & Okinawa Region, the Chugoku & Shikoku Region, and the Hokkaido & Tohoku Region) only have a small number of international graduates, they maintained an upward trend even during the epidemic.

In terms of share, the Kanto Region's share of international graduates remained high at between 50% and 70%, but gradually declined from 67.4% in 2009 to 56.1% in 2021. On the other hand, the



Kinki Region, with the second-largest share, increased from 13.6% in 2009 to 17.4% in 2021, but it had already peaked at 17.1% in 2014. From 2014 onwards, its share fluctuated slightly and did not rebound to above 17.1% until 2020. The aggregate percentage of the remaining four regions was 19.0% in 2009, and it only slightly increased to 20% before the pandemic. However, after the COVID-19 outbreak, their share rapidly grew to 22.7% in 2021 and 26.4% in 2022.

These findings suggest that while the Kanto Region’s share of international graduates has been declining, other regions have been experiencing an increase. This trend could be influenced by factors such as the rising number of international students in Japan and people’s preference for less densely populated areas due to the risk of coronavirus infection. It’s important to note that this shift in distribution could have significant implications for the economy and innovation in regions outside the Kanto Region. Therefore, it’s crucial to consider the broader context of the pandemic and the various factors that may be driving the movement of talent within Japan.

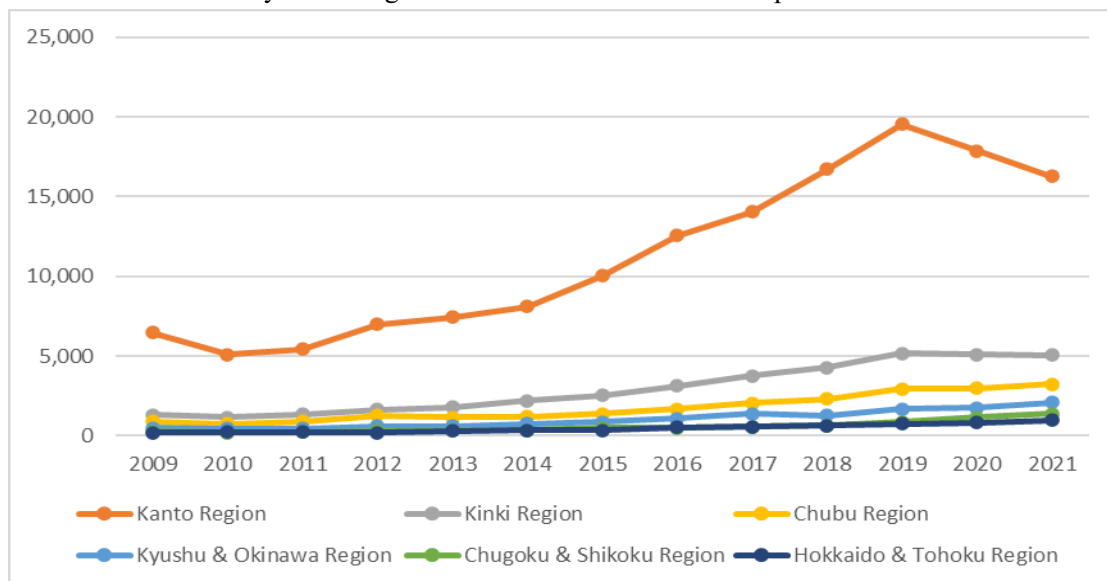


Figure 7. Change in the Number of International Graduates Working in Each Region  
Data Source: ISAJ (2015-2022)

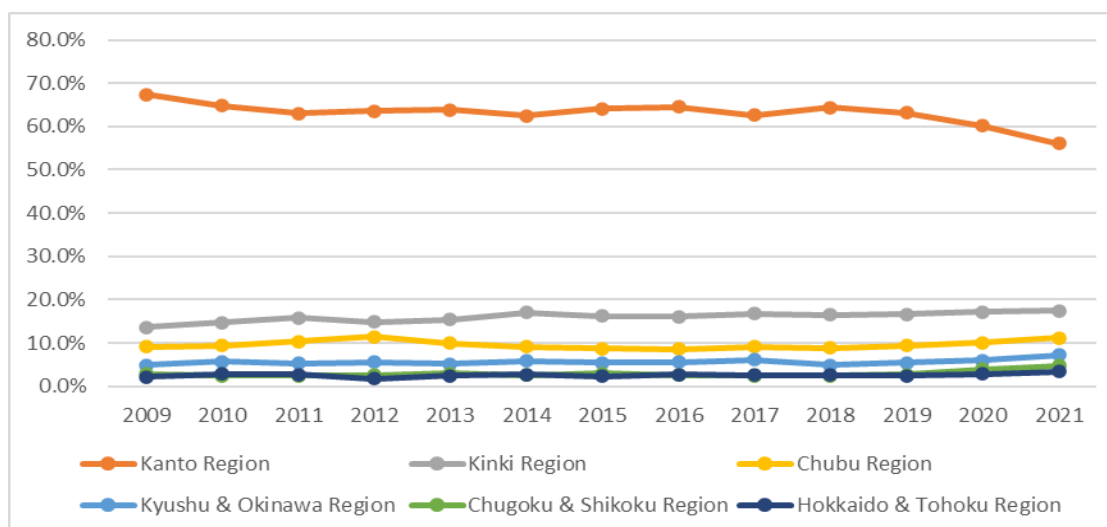


Figure 8. Change in the Share of International Graduates Working in Each Region  
Data Source: ISAJ (2015-2022)

(2) Change in distribution by prefecture: top 10 prefectures

Regarding the distribution of international graduates by prefecture, Tokyo-to and Osaka-fu were always the top destinations for international graduates from 2009 to 2021.

It is interesting to note that some prefectures, such as Hyogo-ken and Ibaraki-ken, dropped in rank between 2009 and 2021 but recently regained their previous rank.

Conversely, Saitama-ken, Aichi-ken, Chiba-ken, and Shizuoka-ken saw an increase in their rank in 2021 compared to 2009.

However, Kanagawa-ken and Fukuoka-ken have experienced a drop in rank, which implies these prefectures' problem with attracting and retaining international talent.

Furthermore, some prefectures, such as Kyoto-fu and Gumma-ken, were ranked in the top 10 in the past but dropped out in 2021, suggesting a shift in the preferences of international graduates towards certain regions of Japan over time.

Table 6. The Ranks of Top 10 Prefectures in 2021 and Their Ranks in 2009~2021

Prefecture	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Tokyo-to	1	1	1	1	1	1	1	1	1	1	1	1	1
Osaka-fu	2	2	2	2	2	2	2	2	2	2	2	2	2
Saitama-ken	5	5	6	5	5	6	5	5	5	5	6	4	3
Kanagawa-ken	3	3	3	4	3	3	3	3	3	3	3	3	4
Aichi-ken	4	4	4	3	4	4	4	4	4	4	4	6	5
Chiba-ken	7	7	7	7	7	8	7	7	7	6	5	5	6
Fukuoka-ken	6	6	5	6	6	5	6	6	6	7	7	7	7
Hyogo-ken	8	8	8	9	9	9	9	9	9	9	9	8	8
Shizuoka-ken	12	11	10	10	11	10	11	12	11	11	10	9	9
Ibaraki-ken	10	10	11	11	12	12	14	14	12	12	12	11	10

Data Source: Arranged by the Author Based on ISAJ (2015-2022)

(3) Geographic distribution by metropolitan area

Regarding the distribution of international graduates in metropolitan areas, the number of graduates working in the Tokyo metropolitan area decreased slightly after 2009, but then increased every year from 2010 to 2019. However, in 2020, the number sharply declined due to the COVID-19 pandemic. Similarly, the number of international graduates working in the Osaka metropolitan area also declined, but to a relatively lesser extent than in Tokyo.

Conversely, the trends in the Nagoya and Fukuoka metropolitan areas were different. In the Nagoya metropolitan area, the number of graduates declined in 2010 but then increased from 2011 to 2012, fell in 2013, and then kept rising until 2019. When the COVID-19 outbreak occurred, the number of graduates declined in 2020, but it recovered earlier than in Tokyo and Osaka. In contrast, the number of international graduates in the Fukuoka metropolitan area increased gradually from 2009 to 2017, experienced a slight decline in 2018, but rebounded in 2019 and has been rising ever since. Notably, the pandemic did not seem to affect the number of graduate workers coming to the Fukuoka metropolitan area.

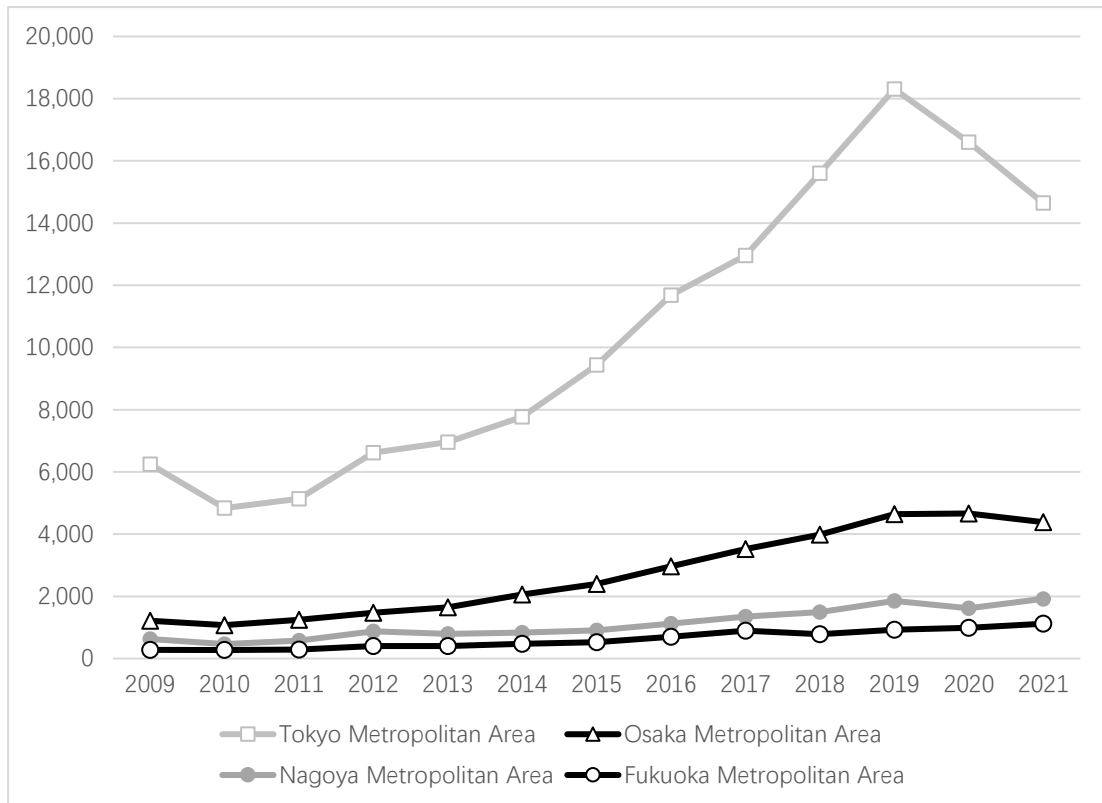


Figure 9. Change in the Number of International Graduates Working in 4 Metropolitan Areas  
*Data Source: ISAJ (2015-2022)*

In terms of changes in share, the number of international graduates employed in the Tokyo metropolitan area remains the largest, but its share has gradually declined over time. Meanwhile, the shares in the Osaka, Nagoya, and Fukuoka metropolitan areas have fluctuated but have generally remained stable.

However, it is interesting to note that more and more international graduates are now being attracted to areas outside of the four main metropolitan areas. The number of international graduates in these areas has been increasing since 2010, and their proportion has been consistently rising since 2018. This trend could be attributed to the COVID-19 pandemic, as people are now seeking areas with lower population densities and more natural and green spaces. Additionally, with the increase in the number of international students studying in Japan, they are becoming more familiar with Japanese cities and are now looking beyond the main metropolitan areas, particularly the Tokyo metropolitan area, for employment opportunities. Consequently, the distribution of international graduates in Japan is becoming more dispersed throughout the country.

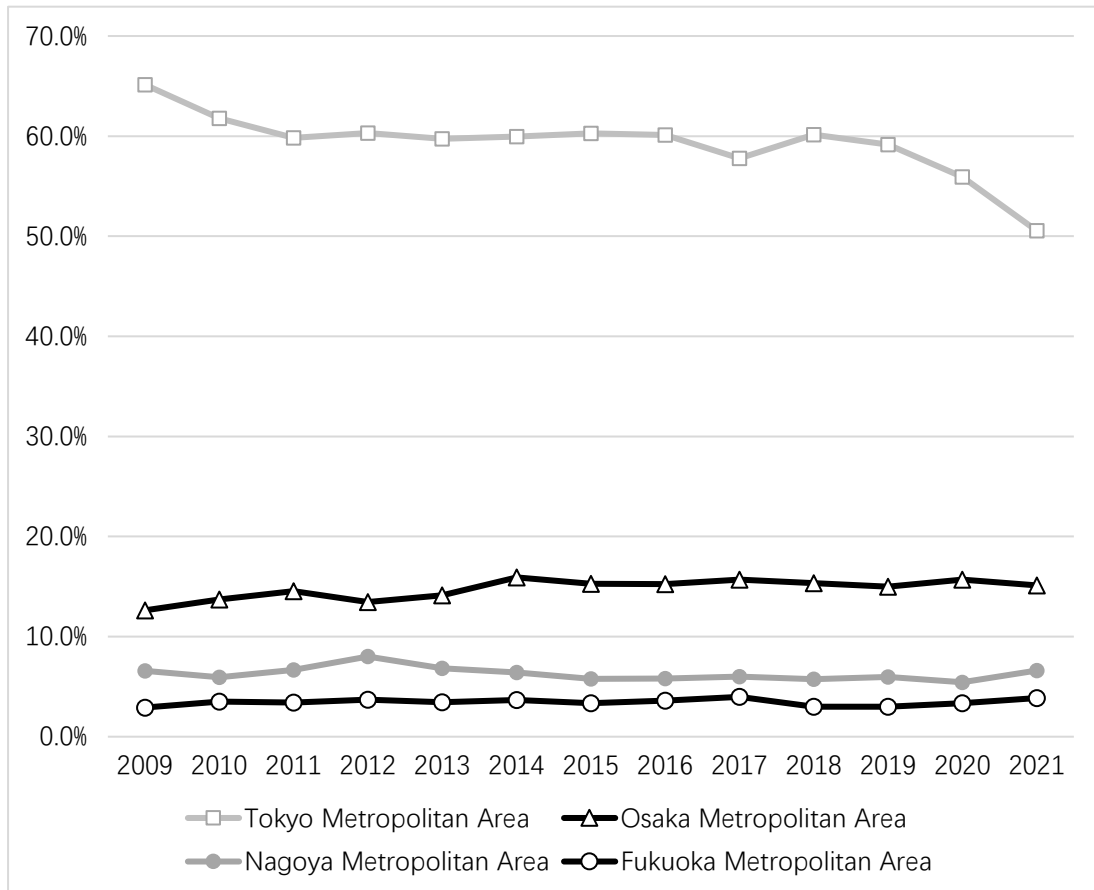


Figure 10. Change in the Share of International Graduates Working in 4 Metropolitan Areas  
Data Source: ISAJ (2015-2022)

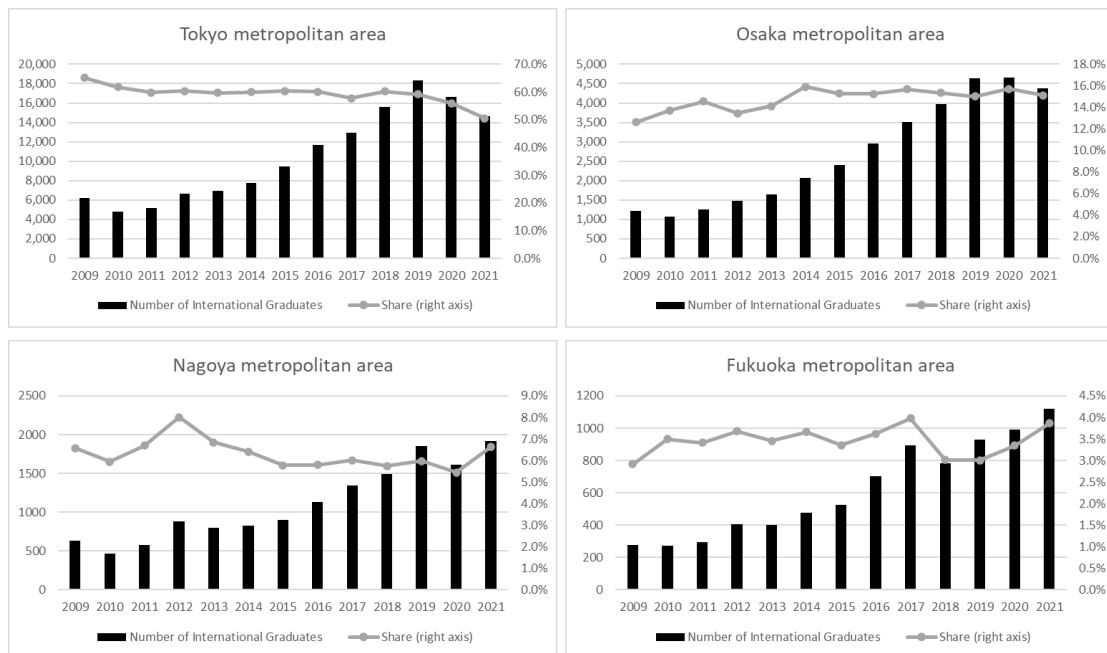


Figure 11. Change in the Number and Share of International Graduates Working in Each Metropolitan Areas  
Data Source: ISAJ (2015-2022)

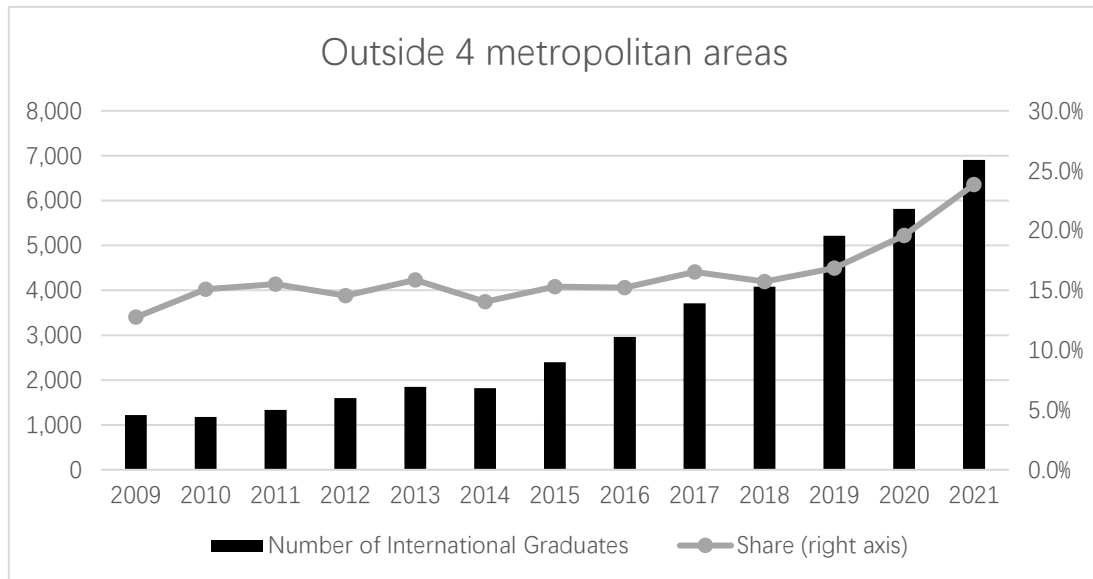


Figure 12. Change in the Number and Share of International Graduates Working Outside 4 Main Metropolitan Areas

Data Source: ISAJ (2015-2022)

## 6. Concluding remarks

In recent decades, global competition for international talent has intensified, and international students are viewed as a critical source of such talent, attracting attention from policymakers and scholars worldwide. Since the 1980s, the Japanese government has implemented a national strategy to attract international students, resulting in a significant increase in their numbers, which exceeded 300,000 by 2019. Japan set a new goal in 2022 to further expand the number of international students.

The key purpose of the international students' strategy is to attract those graduates to work in Japan, to address the challenges of an aging population and labor shortage. However, the retention rate of international graduates in Japan remains low. Despite more than half of international graduates being interested in working in Japan, only about 30% actually find employment in the country. In terms of longitudinal change, although the number of international graduates working in Japan steadily increased from 2010 to 2019, it declined for two consecutive years following the COVID-19 outbreak in 2020 and 2021.

Attracting international graduates is particularly crucial for local governments that are facing severe population issues. In terms of distribution within Japan, the majority of international graduates are drawn to metropolitan areas, particularly the Tokyo metropolitan area. Since 2010, the number of international graduates has been increasing in all four main metropolitan areas as well as in the outside areas, along with the growing number of international students in Japan. However, following the COVID-19 epidemic, the number of graduates decreased in the top two metropolitan areas while increasing in outside areas. This indicates that international graduates are increasingly finding jobs in more dispersed areas.

Previous studies suggest that factors such as wage levels, job opportunities, spatial distances, household status, and personal experiences may influence international graduates' locational choice, but existing research has not reached a consensus. Furthermore, people's preference for place is believed to have shifted significantly after the COVID-19 pandemic. More empirical research is needed to understand the factors influencing international graduates' choice of workplace, especially in the post-COVID-19 era. The 2023 report, to be completed the following year, will focus on empirical studies, aiming to answer two key questions: (1) What factors influence international graduates' decision to work in Japan? (2) What factors influence their choice of workplace within Japan? The report will pay particular attention to how the pandemic has altered people's choice of workplace. Answers to these questions can assist the Japanese government in formulating more effective policies to attract and retain international graduates.

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## Attracting International Graduates to Work in Japan

### ——A Study on the International Student Graduates' Choice of Workplace

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