

Brain Drain and Japanese Demographic Challenges: A Bidirectional Relationship

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Abstract- Brain drain has steadily increased in Japan since the 1990s, when its demographic problems first arose. After rising from 2.6 in 2015 to 3.5 in 2018, the Human Flight and Brain Drain Index slightly declined to 2.9 during the COVID-19 pandemic. Attracting foreign researchers is a key component of Japan's internationalization objectives, but strategies for keeping or reintegrating Japanese talent living abroad are not as well discussed. Current research has identified brain drain as a risk factor; nevertheless, its reciprocal link with Japan's demographic issue has not been thoroughly examined. This research investigates the post-COVID ramifications of brain drain by qualitative analysis, including interviews with academics and document examination. According to this study, a reciprocal relationship exists between demographic problems and brain drain, exacerbating economic, technological, and demographic instability. The COVID-19 pandemic temporarily slowed this outflow, but insufficient policy actions may result in increased migration, especially toward rival economies such as China and South Korea. The research contributes to the current literature by highlighting the need for specific policy actions to alleviate the brain drain while preserving Japan's higher education accessibility for overseas students. Resolving this problem is essential for maintaining Japan's labor force and ensuring long-term economic stability.

Keywords: Ageing Society, Brain Drain, Demographic Challenges, Skilled Migration, Japan

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1. Introduction

Japan faces significant demographic challenges, including an aging population and a shrinking workforce. These factors have been worsened by the brain drain phenomenon, which has contributed to increasing labor shortages across several industries in Japan (Horiuchi & Oishi, 2021). Fortunately, the Japanese government has addressed the problem by improving the country's education system and increasing the availability of immigration visas for foreign workers (Hammerbauer et al., 2021). Notwithstanding these initiatives, skilled Japanese workers will continue to leave Japan for developed nations like the US and Australia in search of better career advancement and higher wages, causing a brain drain. Over 800,000 highly skilled Japanese workers have recently migrated to other countries for better employment opportunities and higher salaries (Docquier, 2014). This trend has caused severe labor market shortages in several industries in Japan and has posed a significant threat to the country's economic development.

Young, talented individuals who migrate to another country for better career opportunities are called the "brain drain." This phenomenon is common in developing countries where employment opportunities are limited and there is a low standard of living (Tavakol, 2012). As a result, many skilled young people migrate from these countries to developed countries with greater demand for their skills and talent. For example, about 700,000 skilled Indian professionals are thought to live and work in the United States right now (Docquier & Rapoport, 2012).

The Japanese economy is experiencing severe labor market shortages in several sectors, including manufacturing, construction, real estate, transportation, and healthcare. As the country's population ages, these sectors face a growing shortage of skilled workers, which is expected to have significant long-term economic implications (Akgüç et al., 2019).

A recent study by the Organization for Economic Cooperation and Development (OECD), based in Tokyo, found that over the previous 20 years, the number of skilled foreign workers in OECD economies has increased by nearly 50%. It is expected to reach 100 million by the year 2025. This significant increase in skilled foreign workers has pressured governments in many developed countries to find creative solutions to manage this growing labor shortage (Altbach, 2015).

Many economists believe that one of the most important ways to solve the persistent lack of skilled workers in some developed nations is through immigration. However, some citizens of these nations are growing increasingly anti-immigration, particularly middle-class voters who dislike the notion of immigrants replacing native-born workers in the workforce. (Akgüç et al., 2019).

Brain drain is the movement of professionals with education and training from one

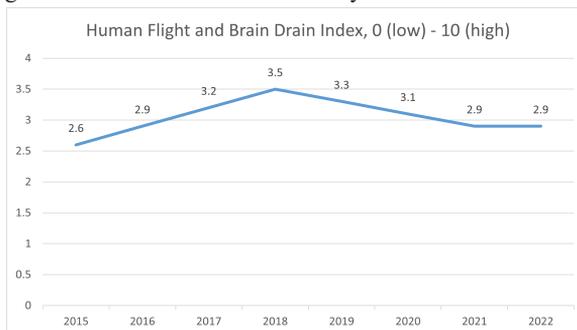
nation to another. This phenomenon occurs for several reasons, such as political reasons, economic reasons, and social reasons. Most countries impose taxes on businesses or limit them to a certain percentage of the profits made in the country (Altbach, 2015). These taxes help the local economy and discourage businesses from moving to other countries to avoid paying taxes. To encourage them to remain in the nation and support its economy rather than working abroad, many highly skilled people relocate to nations without such restrictions. Countries with high unemployment rates and low economic growth rates are also likely to suffer from a brain drain problem as professionals seek work in other countries that provide better career opportunities and a higher standard of living (Yonezawa, 2019).

A brain drain could be caused by the policies and regulations imposed by some governments, which harm the economy and result in fewer employment opportunities for the country's citizens (Roy, 2022).

1.1 Factors Contributing to Brain Drain in Japan

The current body of research highlights the importance of understanding the factors contributing to the emigration of highly skilled individuals from Japan. According to Oishi and Hamada (2019), the hazards associated with the triple tragedy of 2011 have led intellectuals to emigrate and become permanent residents in other countries. Horiuchi and Oishi (2021) endorse these factors, pointing to the possible long-term economic repercussions and the younger generation's lack of trust in the media and government as significant causes of Japan's brain drain phenomenon. Holbrow and Nagayoshi (2018) highlighted a supplementary factor that links Japan's work culture, which is notable for its excessive work demands and gender bias. These factors also contribute to a low influx of foreign intellectuals. According to Yonezawa (2019), the increasing number of older adults in society is causing the younger generation to choose to live in other countries because of concerns about their pension security and the need to care for the aging population.

Figure 1 Human Flight and Brain Drain Index over the years.



Source: Created by the author with the data collected from (Japan Human Flight and Brain Drain - Data, Chart | TheGlobalEconomy.com, 2022)

Demographic factors primarily drive the brain outflow from Japan. However, assessing the economic consequences of people's relocation is essential (Furuichi, 2011). The Flight and Brain Outflow Indicator, a statistic that assesses the effect of political or economic displacement on a nation's development, is one of the tools for doing this. As the index increases, the number of people who move also increases. With a low of 2.6 in 2015 and a high of 3.5 in 2018, Japan's data indicates an average value of 0.73 index points from 2015 to 2022. The most recent figure for 2022 is 2.9 index points, while the global average in 2022, based on data from 177 countries, is 5.21 (Japan Human Flight and Brain Drain - Data, Chart | TheGlobalEconomy.com, 2022).

Yonezawa (2019) explores the connection between brain drain and the younger generation, pointing out a significant data gap about whether Japanese youth would decide to stay in Japan after gaining skills that are competitive worldwide. The study emphasizes the need for solutions such as enhancing work environments and strengthening social security systems to encourage retention. Furthermore, it is common for mid-career engineers to seek employment with foreign companies abroad. Roy (2022) discusses Japan's workforce shortages, attributing them to demographic challenges in a country with the world's oldest population. His research aims to establish a link between the emigration of highly skilled professionals and the structural-demographic shifts affecting Japan, offering a deeper understanding of the issue (Khan & Bashar, 2016).

1.2 Problem Statement and Research Question

Since the 1990s, Japan's demographic problems have led to a brain drain. It fell to 2.9 index points despite COVID-19. Japan's internationalization plans concentrate on attracting academics but also need to consider returning them. Multiple studies have found brain drain from Japan to be a risk factor, although the effects and links to Japan's demographic issues are seldom acknowledged. This research examines the brain drain in Japan and its bidirectional effects on demographic issues.

To fill in this knowledge gap and make progress toward the aims, this research addresses the following research topics:

1. How is Brain Drain from Japan related to its demographic challenges?
2. How are immigrant and globalization policies connected with the Brain Drain from Japan?

1.3 Objectives

The aims of our research are-

1. To show a relationship between brain drain from Japan and its demographic

challenges.

2. To connect the immigrant policies and globalization policies with the Brain Drain from Japan

1.4 Significance

The research investigates the relationship between brain drain and Japan's demographic issues, emphasizing its effects on economic and social stability. Japan's aging population, declining workforce, and low birth rates contribute to the emigration of talented workers, particularly in industries such as healthcare, education, and technology. The research informs policy development by analyzing the relationship between immigration policies and brain drain, aiding the government in formulating policies that reconcile local talent retention with integrating foreign workers. It imparts significant insights for other countries experiencing similar demographic transitions and enhances comprehension of how developed economies might adjust to global migration patterns while confronting local labor issues. The study also examines forthcoming labor market issues and the social and cultural ramifications of heightened dependence on foreign talent.

2. Methods

To understand the reciprocal relationship between Japan's brain drain and its demographic challenges, particularly regarding the impact of immigration and globalization policies, it is essential to consider the perspectives of scholars specializing in Japanese demography. By examining their insights, we can better understand how they perceive and articulate the current demographic situation in Japan. It is also imperative to compare the experiences and perspectives of students at various levels in higher education institutions in Japan. Considering the issues, the current study employs a qualitative research approach. Most of the data for the current study were collected from two qualitative approaches: document analysis and in-depth semi-structured interviews with eleven students and academicians, according to **Table 1**. We asked questions to students and researchers from different universities at distinct levels of tertiary education until we got repetitive answers from them, and the point of saturation was achieved after interviewing 11 stakeholders.

Table 1: Distribution of respondents across stakeholders

Stakeholders	Number of Respondents
1. Academician	02
2. Bachelor Student	01
3. Master's Student	02
4. Doctoral Students	02
5. Research Students	04
Total	11

2.1 Study Area and Sample Selection

For data collection, along with academicians and research students, we took students from three levels of tertiary education in Japan, Bachelor, Master, and Doctorate students, to find the challenges and prospectus from different level's perspectives. According to **Table 2**, of the 11 study samples, two were from academicians who specialized in Japanese demography comprehension, four were from Japanese students in Japan, four were from international students in Japan, mainly from Bangladesh, and one was from a Japanese student who was in a Bangladesh for research purpose. Primarily, we selected fifteen students and academicians for data collection. However, as we did not get any latest information, we had to stop our interviews at 11. Thus, the final sample for this study was (n=15).

Table 2: List of Interviewers

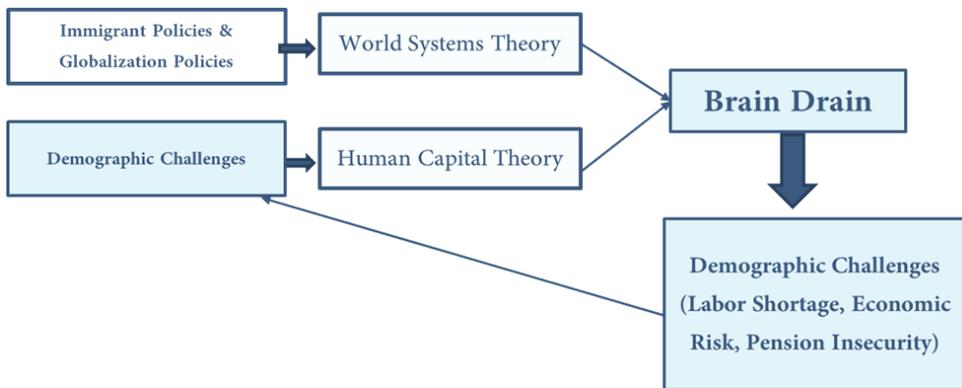
Interviewee No.	Designation	University
Interviewee A	Associate Professor	University of Dhaka
Interviewee B	Associate Professor	University of Dhaka
Interviewee C	Bachelor Student	Kyoto University of Advanced Sciences
Interviewee D	Master Student	International University of Japan
Interviewee E	Doctoral Student	Chiba University
Interviewee F	Doctoral Student	Chiba University
Interviewee G	Master Student	Nagoya University
Interviewee H	Research Student	Kobe University
Interviewee I	Research Student	Osaka University
Interviewee J	Research Student	Kobe University
Interviewee K	Research Student	Kobe University

2.2 Data Collection and Analysis

For data collection, 03 months were undertaken for interviews, from January 2023 to March 2023. These semi-structured qualitative interviews were conducted face-to-face and via Zoom by the authors. For the students, the interviews were held in English, while for academicians, the interviews were held in the local language, Bangla. Before conducting the interviews, the authors informed all participants about the research objectives. With due permission, all interviews were transcribed and translated (for Bangla) into English by the second author. Each interview lasted between 70 and 90 minutes.

Later, in the analytical process, we manually analyzed the data collected by the authors using thematic analysis. The major themes and sub-themes were identified during the document analysis and cross-checked and modified after the in-depth interviews of the different stakeholders. Furthermore, following the major themes and sub-themes, data was categorized accordingly. The authors followed a step-by-step approach to get the significant themes from the desk review. The study's findings are presented in two main sections: (a) 3.1 the interplay of brain drain and demographic challenges, and (b) perspectives on policy measures, recommendations, and brain perceptions.

Figure 2 Theoretical Research Framework



Source: Created by the author

3. Findings

This section outlines the main conclusions from the qualitative analysis of interviews with eleven experts in Japanese demography and migration. The results are classified into themes: (1) 3.1 The Interplay of Brain Drain and Demographic Challenges, and (2) Perspectives on Policy Measures, Recommendations, and Brain Drain Perceptions.

3.1 The Interplay of Brain Drain and Demographic Challenges

Participants consistently cited Japan's aging population and declining birth rate as the primary causes of brain drain. Career advancement opportunities in Japan are significantly limited due to the declining number of young professionals entering the workforce. Most respondents emphasized that many young professionals seek opportunities elsewhere because of the confluence of an aging workforce and a contracting economy. (Interviewees A, D, G, and J). Interviewee E elaborated that the demographic decrease has burdened younger generations, necessitating their help for the elderly. Consequently, some individuals go abroad, prioritizing job progression above social responsibilities.

Interviewee K observed that, while global brain drain is a considerable problem, internal brain drain inside Japan is also an increasing worry. Many youths from rural regions relocate to metropolitan centers like Tokyo for further education and employment prospects, resulting in depopulation and labor shortages in rural locales. Interviewee A said, "*Numerous Japanese individuals, including researchers, are relocating overseas.*" Nonetheless, brain drain occurs not just outside but also within. Most young individuals migrate from rural regions to metropolitan centers like Tokyo for further education and employment, often remaining post-graduation.

Moreover, economic stagnation and constrained compensation growth were often identified as primary factors driving skilled individuals to depart from Japan. Interviewees B and H said competitive remuneration and improved work-life balance overseas made relocation appealing. Interviewee F said, "*Skilled professionals in disciplines such as engineering and medical research can earn nearly double in countries like the United States and Germany compared to Japan.*"

The effects of brain drain are particularly pronounced in Japan's labor market, notably within research and development (R&D). Interviewees A and C emphasized that distinguished scientists and engineers migrated to other universities due to inadequate research funding in Japan. A significant instance highlighted was the transfer of Nobel Prize finalist Akira Fujishima's research team to Shanghai University of Science and Technology, emphasizing how financial limitations are prompting leading talent to leave the nation.

In addition to economic issues, Japan's business culture contributes to brain drain. Interviewee D said that the nation's seniority-based structure often dissuades younger professionals from seeking long-term careers inside the country. By pushing creative people into more flexible and dynamic global workplaces, the rigid work environment and limited opportunities for international cooperation exacerbate the issue.

Furthermore, Japan's diminishing workforce has resulted in a heightened dependence on foreign labor in some sectors, yet this does not adequately offset the deficit of highly trained individuals. Interviewees E and G emphasized that areas requiring high skills, such as technology and health, are especially impacted. Interviewee B said, "*Brain drain extends beyond the realm of technology.*" The medical industry, renowned for its excellence in Japan, is experiencing a brain drain as elite medical practitioners pursue superior prospects outside.

3.2 Perspectives on Policy Measures

Several respondents had ambivalent views about the gravity of Japan's brain drain issue. While some see it as a significant issue, others propose it may provide an opportunity. Interviewee J said, "*Numerous Japanese professionals aspire to acquire international experience, linguistic proficiency, and networking opportunities overseas, which can ultimately advantage Japan upon their return with enhanced knowledge and expertise.*"

From a policy standpoint, Interviewees I and K said, "*Although Japan has implemented internationalization strategies to draw in foreign talent, no attempts have been made to retain Japanese professionals and academics who leave the country.*" Interviewee J said, "*Japan's immigration policies are insufficient to address the brain drain phenomenon due to their ambiguity and the absence of thorough discourse.*" Cooperation between the public and commercial sectors is essential to tackle this issue properly.

Participants often expressed concerns over policy inefficiencies. Numerous respondents said that deficient budget allocation and ineffective public-private partnerships impede Japan's capacity to retain talent. Sure, participants proposed that Japan should prioritize cultivating an atmosphere that promotes creativity and learning from other nations rather than only attempting to mitigate the brain drain. Interviewee K said, "*The challenge extends beyond merely halting brain drain; it involves fostering and advancing innovation through the assimilation of knowledge from other nations.*"

To alleviate the brain drain, respondents said that the government should provide more scholarships and research funds to keep Japanese scientists and researchers. Interviewee D said, "*Offering scholarships to researchers would facilitate their retention in Japan.*" Furthermore, private enterprises must enhance remuneration and optimize working circumstances to elevate Japan's competitiveness in the global labor market. The interviewee said, "*Private enterprises ought to elevate salaries to foster internal innovation in Japan.*" Since Japan needs to adopt international innovations to stay competitive, internationalization policies in higher education should be strengthened rather than restricted to promote

innovation. Moreover, enhanced coordination between the public and commercial sectors is essential for implementing successful policies to keep competent workers. Measures must be implemented to motivate Japanese researchers and professionals to repatriate after acquiring overseas experience. Without suitable action, Japan faces the danger of an ongoing brain drain, potentially exacerbating its economic and technical position on the world stage.

3.3 Discussion

Our study demonstrates a clear connection between the brain drain phenomenon and Japan's demographic problems, which include an aging population and falling birth rates. Japan's population is projected to fall below one hundred million by 2049, with one-third of its citizens expected to be elderly by 2036 (Interviewee D & J, 2023; Johnson, 2009). This demographic shift places significant economic and social pressures on the younger workforce, who must support an increasingly aging population while facing uncertainty regarding pension security. Furuichi (2011) described this as a case of 'happy youth in a hopeless country,' highlighting the growing concerns among young professionals. In response, many seek globally competitive skills and employment opportunities abroad, increasing the migration of middle-aged engineers and skilled workers (Interviewee A & K, 2023). Furthermore, global corporations such as SONY and Olympus have appointed non-Japanese CEOs, signaling a transformation in Japan's labor market and reinforcing the outflow of talent (Interviewee B & H, 2023).

Japan's brain drain is further exacerbated by the migration of technical personnel, with over 1,000 experts relocating to competing Asian nations like China, South Korea, and Thailand over the past four decades. Many researchers and technicians cite inadequate funding and limited opportunities as primary reasons for leaving (Interviewee C, D & J, 2023; Khan & Bashar, 2016). This trend aligns with the world systems theory, which suggests that Japan, once a dominant core nation, now faces competition from emerging economies that offer better research funding and career prospects (Khan & Bashar, 2016; Chirot & Hall, 1982). The relocation of Akira Fujishima to China exemplifies this shift (Yoshioka, 2022). Human Capital Theory further explains this phenomenon: skilled professionals aim to maximize their educational investments by seeking higher returns abroad. However, agglomeration economies play a significant role in shaping migration patterns beyond higher wages and job stability. Highly qualified professionals do not relocate randomly; instead, they focus on knowledge centers like Silicon Valley or financial hubs like London and New York, where innovation flourishes. (Pekkala Kerr et al., 2017; Weninger, 2023). This is evident in Japan's brain drain, where scientists, engineers, and business leaders relocate to high-tech clusters that

offer innovative research facilities, venture capital funding, and global professional networks. Many who study abroad remain in their host countries due to these ecosystem advantages, further contributing to Japan's brain drain.

Demographic issues fuel migration, but the brain drain phenomenon makes Japan's demographic problems worse. This bidirectional relationship means that as skilled professionals leave, the workforce shrinks, further destabilizing economic growth and social security systems. This cycle underscores the need for policy interventions to address demographic decline and talent retention.

Also, our findings reveal that brain drain is not causally linked to immigration policy, but these policies indirectly impact the social climate and retirement age (Interviewee E & J, 2023). The intricacy of global migration dynamics is highlighted by the fact that, despite being a core nation, Japan experiences a reverse flow of human capital to even more powerful core nations. Through the lens of system theory, Japan's experience with brain drain illustrates a complex dynamic in which a core nation can still be vulnerable to human capital loss when competing against even stronger core economies (The World Bank, 2025). This phenomenon is closely linked to globalization, which increases cross-border higher education opportunities, corporate strategies, and economic interdependencies, thereby speeding up the migration of skilled individuals.

Beyond demographic factors, globalization has significantly influenced Japan's brain drain. The increasing internationalization of Japanese corporations has encouraged the migration of skilled professionals. Many companies have expanded their operations overseas, shifting manufacturing and business activities abroad and providing a direct pathway for Japanese engineers, executives, and researchers to relocate (Interviewee A & D, 2023; Khan & Bashar, 2016). Additionally, as Japanese corporations integrate into the global economy, they increasingly hire foreign executives, further reshaping employment structures (Interviewee F & H, 2023; Shakil, 2017). This shift has contributed to the growing appeal of international career opportunities for Japanese professionals.

Globalization has also impacted Japan's education policies, inadvertently fueling brain drain. The government has promoted student exchanges to enhance global competitiveness, setting goals to send 120,000 Japanese students abroad by 2020 while inviting 300,000 international students to study in Japan (Interviewee C, E & G, 2023; Kone & Özden, 2017). Despite being designed to improve international cooperation, these policies have made foreign job markets more accessible, which has caused many Japanese students to build professional networks overseas and choose to stay for an extended period in Western or Australian nations. Expanding overseas corporate branches further facilitates

migration, offering skilled professionals opportunities to work in more dynamic and globally connected environments. As these individuals secure permanent residency or dual citizenship, Japan's ability to retain its highly educated workforce diminishes. Globalization is a substantial factor in driving the brain drain from Japan, shaping the economic and educational structures that facilitate the migration of skilled individuals.

Japan must adopt a multifaceted approach encouraging skilled professionals to return to counteract the brain drain. Providing career incentives, reintegration support, and competitive research funding can make returning to Japan attractive. Additionally, our findings indicate that increasing government-funded scholarships and research grants will help retain scholars and professionals by ensuring they have sufficient opportunities for academic and career growth domestically.

Improving salaries and working conditions within the private sector is equally crucial. To remain competitive in the global job market, Japanese companies must offer higher wages, enhance work-life balance, and create more research-friendly environments. Our findings suggest that without these improvements, talented individuals will continue seeking better prospects abroad, reducing innovation within Japan.

Internationalization policies in higher education should not be restricted but further promoted to drive innovation. Japan must learn from global advancements to remain competitive. Strengthening collaboration between government institutions, universities, and private companies is another essential step. Japan can establish an innovation-driven ecosystem where professionals and researchers can contribute significantly to domestic technological advancements by cultivating stronger partnerships. Promoting international cooperation and global networking will also guarantee that Japanese professionals working overseas stay in touch with Japanese institutions, enabling ongoing technological transfer and knowledge sharing.

Furthermore, stronger collaboration between the public and private sectors is necessary to implement effective policies for retaining skilled professionals. Our results emphasize the necessity of ensuring that Japanese professionals and researchers are motivated to return to Japan after obtaining foreign experience. Incentives such as tax benefits, housing support, and streamlined re-entry processes would encourage professionals to re-establish themselves in Japan. Without appropriate intervention, Japan risks continued brain drain, which could further weaken its economic and technological standing in the global arena. By implementing these strategies, Japan can shift from experiencing brain drain to fostering brain circulation, ensuring that globalization strengthens the country's knowledge economy rather than losing its most skilled individuals.

4. Limitations of the Study

This thesis examines the interplay between brain drain and Japanese demographic challenges, highlighting their bidirectional relationship. The research aims to illustrate a reciprocal relationship between Japan's brain drain and its demographic challenges, explicitly highlighting the impact of immigration and globalization policies. This research has drawbacks, notably its emphasis on qualitative data and its failure to address the obstacles met by policymakers who oppose proper policy consequences since it is a qualitative study. The findings may be used to improve procedures in Japan.

5. Conclusion

The brain drain from Japan has been happening since the start of the Japanese demographic challenges in the 1990s, and the continued increase in numbers was expected (Akgüç et al., 2019). Japan's Human Flight and Brain Drain Index data reveal that there have been variations, reaching a zenith of 3.5 index points in 2018 before seeing a slow decline. Notwithstanding the limitations imposed by COVID-19, the index exhibited significant stability, declining to 2.9 index points. The latest data from 2024 indicates a reduction to 2.4 index points, a decrease from 2.7 in 2023. Conversely, the worldwide average is 4.98 index points, derived from data including 176 nations. From 2007 to 2024, Japan's average index value was 2.54, with a minimum recorded value of 1.8 in 2011 and a maximum in 2018. These patterns show that brain drain levels in Japan have remained stable over time; however, this stability is at a rate lower than the global average. (Japan Human Flight and Brain Drain - Data, Chart | TheGlobalEconomy.com, 2022). Internationalization policies in Japan focus on bringing scholars; however, more debate is required regarding the repatriation of scholars who establish permanent residence overseas. Multiple studies have described the brain drain from Japan as a risk factor. However, the impact of the brain drains and the relationship between the brain drain and Japan's demographic challenges are discussed less (Furuichi, 2011).

This study tries to analyze the impact of brain drains in Japan's post-COVID era and detect the bidirectional reaction of brain drains and demographic challenges through a qualitative study conducted by interviewing scholars and researchers and analyzing documents (Roy, 2022). This number of brain drains was considered a risk factor for Japanese demographics. Thousands of Japanese workers migrated to competing countries like China and South Korea. COVID-19 has positively affected this matter, but there is a risk if the government cannot implement the right policy (Horiuchi & Oishi, 2021).

The study shows that where demographic challenges cause brain drains, this brain

drain is bidirectional, causing the demographic challenges to worsen. If this happens continuously, Japan will face not only demographic challenges but also economic and technological crises shortly (Yonezawa, 2019). This study adds to existing literature and gets policymakers in Japan to think about stopping the brain drain that comes with making higher education more accessible to people from other countries. Consequently, tackling Japan's brain drain requires a holistic policy strategy that draws global talent and encourages the repatriation of Japanese academics, ensuring sustained economic and demographic stability.

Reference

- Akgüç, M., Alcidi, C., & Di Salvo, M. (2019). Brain drain in Southern Mediterranean countries: Evidence, challenges, and policies. *In Forthcoming EMNES Policy Paper*.
- Altbach, P. (2015, March 17). Brain Drain or Brain Exchange: Developing Country Implications. *International Higher Education*, 72, 2–4. <https://doi.org/10.6017/ihe.2013.72.6095>
- Chirot, D., & Hall, T. D. (1982). World-System Theory. *Annual Review of Sociology*, 8(1), 81–106. <https://doi.org/10.1146/annurev.so.08.080182.000501>
- Docquier, F. (2014). The brain drain from developing countries. *IZA World of Labor*. <https://doi.org/10.15185/izawol.31>
- Docquier, F., & Rapoport, H. (2012). Globalization, brain drain, and development. *Journal of Economic Literature*, 50(3), 681–730. <https://doi.org/10.1257/jel.50.3.681>
- Hammerbauer, M., Pavletic, P., & Vespa, M. (2021). Brain Drain in Higher Education--European Context. Final Report--ESC41. *European Students' Union (ESU)*.
- Holbrow, H. J., & Nagayoshi, K. (2016). Economic integration of skilled migrants in Japan: The role of employment practices. *International Migration Review*, 52(2), 458–486. <https://doi.org/10.1111/imre.12295>
- Horiuchi, Y., & Oishi, N. (2021). Country risks and brain drain: The emigration potential of Japanese skilled workers. *Social Science Japan Journal*, 25(1), 55–82. <https://doi.org/10.1093/ssjj/jyab037>
- Japan Human flight and brain drain - data, chart* | TheGlobalEconomy.com. (n.d.). TheGlobalEconomy.com. https://www.theglobaleconomy.com/Japan/human_flight_brain_drain_index/

- Johnson, N. (2009). Analysis and assessment of the “brain drain” phenomenon and its effects on Caribbean countries. *Florida Atlantic Comparative Studies Journal*, *11(1)*, 1-16.
- Khan, H., & Bashar, O. K. M. R. (2016). Does globalization create a ‘level playing field’ through outsourcing and brain drain in the global economy? *The Journal of Developing Areas*, *50(6)*, 191–207. <https://doi.org/10.1353/jda.2016.0143>
- Kone, Z. L., & Özden, Ç. (2017). Brain drain, gain, and circulation. In *Edward Elgar Publishing eBooks*. <https://doi.org/10.4337/9781783478651.00029>
- Oishi, N., & Hamada, I. (2018). Silent Exits: Risk and Post-3.11 Skilled Migration from Japan to Australia. *Social Science Japan Journal*, *22(1)*, 109–125. <https://doi.org/10.1093/ssjj/jyy025>
- Pekkala Kerr, S., Kerr, W., Özden, Ç., & Parsons, C. (2017). *Global talent mobility and human capital agglomeration*. CEPR Policy Portal. <https://voxeu.org/article/global-talent-mobility-and-human-capital-agglomeration>. Accessed May 13, 2023.
- Roy, J. P. (2022). Managing a Demographically Driven Labor Shortage: An Assessment of Japan’s Strategic Approach. In *Advances in Theory and Practice of Emerging Markets*, 75–125. https://doi.org/10.1007/978-3-030-87621-0_4
- Shakil, S. (2017, January 12). Stemming the Medical Brain Drain: A Personal Perspective on a Global Problem. *Einstein Journal of Biology and Medicine*, *31(1 & 2)*, 11. <https://doi.org/10.23861/ejbm201631745>
- Tavakol, M. (2012). Brain drain: Problems and solutions. *Islamic Pers*, *1(7)*, 161-171. <https://iranianstudies.org/wp-content/uploads/2012/06/Islamic-Perspective-7.1.pdf#page=165>
- The World Bank. (2025). *Migration: leveraging human capital in the East Asia and Pacific region*. <https://documents1.worldbank.org/curated/en/099020325194013546/pdf/P1808481980daa0141a79615df3bf5c97c5.pdf>
- Weninger, C. (2022). Curriculum and literacy. In *Elsevier eBooks* (pp. 308–313). <https://doi.org/10.1016/b978-0-12-818630-5.03055-4>
- Yonezawa, A. (2019). Challenges of the Japanese higher education Amidst population decline and globalization. *Globalisation Societies and Education*, *18(1)*, 43–52. <https://doi.org/10.1080/14767724.2019.1690085>
- Yoshioka, K. (2022, October 14). *Young Japanese scholars head to China for stable, independent jobs*. The Asahi Shimbun. Retrieved March 13, 2025, from <https://www.asahi.com/ajw/articles/14720169>

Annex

Questionnaire (Case Study)

Research Title: Brain Drain and Japanese Demographic Challenges: A Bidirectional Relationship

Researcher: Kazi Humayra Rashid, Nasrin Sultana

1. How are Japan's demographic challenges causing the brain drain from Japan?
2. How does brain drain cause a labor shortage in Japan?
3. How much do you think immigration policies oversee the brain drain?
4. Do you think the brain drain from Japan is only in the technological field?
5. Should internationalization policies in higher education be changed to reduce the brain drain?
6. Do you think the government of Japan is taking proper policy measures to stop the brain drain from Japan?
7. To what extent do you think this brain drain causes challenges for Japan?
8. What recommendation do you have to reduce the brain drain from Japan?