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Mobility of Highly Skilled Retirees from Japan to the Republic of Korea and Taiwan

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Abstract: *Attracting highly skilled workers is a major element in the economic development of many countries, especially developing ones. However, workers generally move from developing countries to developed ones. Historical evidence indicates that Korean and Taiwanese firms scout for highly skilled (retired or soon-to-retire) Japanese workers to accrue, and catch up on, knowledge. Therefore, this paper investigates how these firms scout for highly skilled Japanese workers. Aiming to produce evidence rather than testing hypotheses, this paper gives practical information on firms in developing countries in attracting highly skilled workers to drive future growth. In addition, this paper provides insights into the international mobility of highly skilled workers from a developed country to developing countries, which has not been examined in the previous literature.*

Keywords: Highly skilled, Mobility, Japan, Republic of Korea, Taiwan
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1. Introduction

In the era of global competition for talent, the international mobility of highly skilled workers has become widespread (OECD, 2002; OECD, 2008). Due to its significance, not only for firms but also for governments, the international mobility of highly skilled workers has attracted considerable attention from scholars and policymakers. Prior studies indicate that the mobility of highly skilled workers offers many advantages (Arrow, 1962; Von Hippel, 1994; Szulanski 1996; Almeida and Kogut, 1999; Song et al., 2001; Song et al., 2003; Oettl and Agrawal, 2008), of which one of the most important is knowledge flow. One way for knowledge to flow is through those who possess knowledge passing it on to those who do not possess such knowledge. Previous studies have identified the possessors of such knowledge as one of three major mediums associated with embodied knowledge: trade, foreign direct investment and labour.

The Republic of Korea (henceforth Korea) and Taiwan are often seen as the countries that have achieved tremendous technological progress and economic growth in a relatively short period. Scholars have partly attributed Korea's and Taiwan's tremendous technological progress and economic growth in technological knowledge as originating from Japan (Hu and Jaffe, 2003; Nabeshima et al., 2016). For these countries, the mobility of highly skilled workers has been the most important factor out of these three mediums of knowledge flow (Kang, 2016). Historical evidence shows that highly skilled Japanese workers have been recruited by firms in Korea and Taiwan since the 1980s, and that such recruitment has helped these firms to accrue technological knowledge and higher levels of competence (Kim, 1997; Fukagawa, 2012; Tabata, 2012).

However, two aspects in particular have not been examined in any of the earlier studies. First, previous studies do not focus on the mobility of highly skilled workers from developed countries to developing ones. Instead, they only focus on two directions: (i) flows from developing countries to developed ones; and (ii) flows between developed countries. This paper argues that the mobility of highly skilled workers from developed countries to developing countries is not insignificant. Second, prior studies do not discuss how the mobility of highly skilled workers occurs. Hence, this paper tries to answer the following two questions: (i) how are highly skilled workers in Japan scouted by firms in Korea and Taiwan? (ii) how do these firms approach and make offers to highly skilled Japanese workers? In addition, this paper asks if the findings of previous studies are applicable to the present case regarding the mobility of highly skilled workers moving from Japan (a developed country) to Korea and Taiwan (developing countries).[1]

The contribution of this paper is twofold. First, it investigates the mobility of highly skilled workers, a subject that has not been previously discussed in detail. Aiming at producing evidence rather than testing hypotheses and finding causalities, this paper reveals the detailed processes behind how highly skilled Japanese workers are hired by firms in Korea and Taiwan. The arguments in this paper help to develop further discussions regarding the international mobility of highly skilled workers. Second, this paper discloses the detailed processes behind how highly skilled professionals are hired by firms in developing countries. The analyses provide detailed and practical information for practitioners and offer insights into how firms in

[1] Some may argue if Korea and Taiwan should be classified as developing countries. This paper selected cases in which companies in Korea and Taiwan were looking for highly skilled workers from abroad to catch up and compete in the global market.

developing countries might best attract highly skilled workers. This could be helpful looking forward, as a similar mobility process is likely to occur from China, Japan, Korea and Taiwan to countries of the Association of Southeast Asian Nations (ASEAN) in the near future.

The remainder of this paper is organised as follows: Section 2 reviews the theories from prior studies on which this study is based; Section 3 describes how the data were collected and analysed; Section 4 presents and discusses the findings; and, finally, Section 5 concludes the paper by listing the policy and strategy implications for governments and firms in developing countries.

2. Theoretical Development

Due to its significance, not only for firms but also for governments, scholars are paying increasing attention to the international mobility of highly skilled workers. The existing literature varies in nature and can be roughly divided into three categories: (i) the definition of highly skilled workers; (ii) the trend and determinants regarding the international mobility of highly skilled workers; and (iii) the results of the international mobility of highly skilled workers. After a brief review of the bodies of literature, this paper discusses the challenges faced by developing countries in attracting highly skilled workers.

2.1.Definition of highly skilled workers

One reason the definition of highly skilled workers remains important is that the measurement of highly skilled workers differs according to the definition used. It is generally considered that highly skilled professionals are those with

abilities/capabilities that cannot be easily obtained/replaced and are simultaneously expected to bring significant benefits to the hiring entities, as compared with local employees. However, there is no agreed concept or definition of what constitutes a highly skilled professional. Governments and international organisations apply different proxies to define highly skilled workers for statistical purposes (OECD, 2002), while some countries do not define any proxies and judge workers on a case-by-case basis. Proxy examples include educational attainment, special talents, special knowledge, annual salary and previous work experience. By using such proxies, workers with higher education and experience are generally regarded as having highly deemed positions, while those with a high level of responsibility are considered to be highly skilled.

There has been an attempt to define an internationally agreed conceptual framework (OECD, 2002). For example, the Organisation for Economic Co-operation and Development (OECD) and Eurostat have defined highly skilled workers as workers who fulfil one of two conditions: (i) workers who have successfully completed tertiary education in a scientific or technological field of study; and (ii) workers who are employed in a scientific or technological occupation where the qualifications in (i) are also normally required.

2.2.Trend and determinants of the international mobility of highly skilled workers

If we divide countries into developed and developing categories, there are four possible directions in which international mobility of labour may flow (Gould, 1988): (i) flows between developed countries; (ii) flows from developing to developed countries; (iii) flows from developed countries to developing ones; and (iv) flows

between developing countries. However, the majority of such labour mobility occurs towards and between developed countries. The same mobility trend is found in cases regarding the mobility of highly skilled workers (OECD, 2002; OECD, 2008).

Numerous studies have investigated the determinants of international mobility of workers. However, to date no study has tested the determinants of such international mobility using all countries. Although the following studies provide partial insights into international mobility by focusing on selected samples (e.g. specific countries and regions, specific industries, specific jobs and specific conditions), evidence from these studies indicates that these factors are the determinants of the international mobility of workers.

The mobility trend of workers is driven by several factors, which can be classified into two types: pull factors and push factors. First, pull factors (e.g. higher incomes) are those that attract workers to inflow into a country (Freeman, 2006). *Ceteris paribus*, higher wages can be expected in higher GDP per capita countries, explaining why general mobility occurs from a lower GDP per capita country into a higher GDP per capita country. Evidence has been found in other studies as well (Rotte and Vogler, 1998; Nerdrum and Sarpebakken, 2006). Employment opportunities are also a pull factor. Saxenian (2006) observes that highly skilled workers from China and India did not return, whereas those from Taiwan did return, the reason being that there were greater employment opportunities in Taiwan. In addition, a higher living standard also attracts workers. For example, a significant number of foreign workers in Norway responded that the quality of life in Norway, such as relative equality between genders and well-managed work-life balance, played a key role in attracting them to come and remain in the country (Nerdrum and Sarpebakken, 2006). When all of the ‘hard’ pull

factors are in play, a country may further gain ‘soft’ pull factors, such as through a positive reputation, which can increase inflow still further (Harvey and Groutsis, 2015).

Second, push factors (e.g. an unstable political climate in a country) are those that encourage worker outflow from a country. In general, having fewer pull factors works as push factors, e.g. lower wages, underemployment of workers, low living standards and negative reputations. Political instability can also encourage people to leave (Rotte and Vogler, 1998). Furthermore, the difference in social environment can also be a push factor. For example, culture and lifestyle, family considerations and individual social networks were key factors in the decisions of highly skilled, British-born and Indian-born scientists working in Boston to return to their home countries (Harvey, 2009). Additional studies have shown that, when firms were choosing who to dispatch to overseas offices, these push factors caused some employees to avoid reallocation, especially to developing countries (Lanier, 1979, Torbiörn, 1982).

Overall, no countries have only push factors or pull factors. All countries have a mixture of both factors, with each country offering a different number of each. Hence, which factors are dominant can determine whether a country exports or imports workers. Of course, the larger the gap between push factors and pull factors, the greater the mobility.

2.3. Impact of the international mobility of highly skilled workers

Previous studies have shown that the mobility of highly skilled workers offers many advantages (Arrow, 1962; Von Hippel, 1994; Szulanski 1996; Almeida and Kogut, 1999; Song et al., 2001; Song et al., 2003; Oettl and Agrawal, 2008), of which one of the most important is knowledge flow. Knowledge possessed by highly skilled workers

flows in three levels: (i) the firm/organisation level; (ii) the local/region level; and (iii) the community level (OECD, 2008). Regarding the first level, when a worker with a specific type of knowledge moves into a new workplace, he/she brings his/her knowledge into the new workplace. Through interactions, the knowledge flows from the original possessor to colleagues and is either simply absorbed as it is or reinterpreted and applied in new ways. This type of learning effect by a firm is often referred to as 'learning-by-hiring' (Song et al., 2003; Palomeras and Melero, 2010). Learning-by-hiring is most effective when the hiring firm is less path dependent and when the hired employee possesses knowledge relatively distant from that of the hiring firm. In other words, learning-by-hiring is most effective when a firm initiates a new plan or strategy.

The second level is the local/region level, which is based on the concept that knowledge tends to geographically localise. Jaffe et al., (1993) examined the origins of universities' and selected firms' patents in the United States, and found that patent citations are localised more than one would imagine. This implies that knowledge flows within the same city and region. In addition, this implies that knowledge will create different trajectories when knowledge creators are in different locations, even if the knowledge is in the same technological field (Verspagen, 2007; Fontana et al., 2009). Thus, when a worker with a specific type of knowledge moves to a new location, he/she has opportunities to encounter new people with different knowledge. Spatial proximity also increases the possibilities of meeting local people and exchanging knowledge. This is supported by the fact that highly skilled scientists and engineers tend to be concentrated by area (Zucker and Darby, 2014). If this type of knowledge flow is achieved nationwide, then the human capital of a country can be enhanced. Furthermore,

since the general accumulation of capital and human capital is a key driver for economic growth, this aspect is important for developing countries.

Finally, the third level is the community level. Communities of practice are defined as groups of workers informally bound together by their shared experience, expertise and commitment to a joint enterprise (Gertler, 2003). Communities of practice include a single firm, suppliers, customers, etc. If a worker from a community of practice becomes part of another or new community of practice, then the knowledge from one community can be diffused into the other community through the mobility of workers. In this regard, Sorenson et al. (2006) measured the level of social proximity on the basis of collaborations between patent inventors and indicated that patent citations increase between collaborating inventors.

2.4. Challenges faced by developing countries in attracting highly skilled workers

Attracting highly skilled workers is a major element in the economic development of many countries, especially developing countries (Salt, 1997). However, attracting highly skilled workers from developed countries poses a significant challenge for developing countries. In general, the international mobility of workers tends to be from developing countries to developed countries, since they tend to have more push factors and fewer pull factors. In order to reverse the general flow direction, developing countries need to address the following issues:

- Search: How to find and approach appropriate highly skilled workers.
- Goal: What to achieve by hiring highly skilled workers and how to achieve certain goals.
- Incentives: How to design pull factors, e.g. higher wages, working opportunities, improved work environments, etc.
- Problems: How to minimise push factors, e.g. lower living standards, etc.

In this regard, this paper examines how firms in Korea and Taiwan can successfully attract highly skilled workers from Japan, as a successful case in which developing countries attract highly skilled workers from a developed country.

3. Data and Research Methodology

3.1. Sample: interviewees

The interviewees for this paper were selected in the following three ways. First, an Internet search was conducted for Japanese workers who had worked at Korean or Taiwanese companies after working for a Japanese company. Their contact information was obtained from their personal web pages or from previous/current companies. Second, since some Japanese workers have published books about their work experiences in Korea and Taiwan, their contact information (following the authors' approvals) was obtained from their respective publishing companies. Third, information regarding Japanese workers currently working in Korea and Taiwan was obtained (again, after the workers' approvals) through Japan's diplomatic offices, which maintain such information.

Three issues prevented the interviewing of all the candidates. First, some candidates were not qualified, as they failed to match the focus of this paper. For example, as stated in the aforementioned literature review, working in a scientific or technological field is a requisite for a worker to be classified as 'highly skilled'. In this case, some candidates did not work in this field of study or research. Second, some of the qualified candidates failed to reply to the interview request. Third, some of the

qualified candidates, despite their initial agreement, subsequently failed to respond to emails/phone calls in the planning stage.

Interviews were conducted with 10 candidates in Japan, Korea, and Taiwan. Eight Japanese engineers were used for data collection, while two others were used to ensure the validity of the interviews. Interviewing multiple sources with different perspectives of evidence was used to minimise any biases caused by subjectivity. Details are as follows:

The eight Japanese engineers worked as research and development (R&D) or sales engineers in chemical, electrical, electronic and mechanical engineering. Four worked for firms in Korea, while four worked for firms in Taiwan. As of 2016, their work experience in Japan (before receiving offers from firms in Korea and Taiwan) ranged from 13 to 44 years, while their work experience in Korea and Taiwan ranged from 3 to 21 years. They ranged in age from 53 to 79 years (mean: 66, median: 65) and were evenly distributed across the 50–59, 60–69 and 70–79 age groups. As of the time when they were interviewed, some were still living and working in Korea and Taiwan, while the others were living and working in Japan, or retired and remaining in the country.

In addition to the eight Japanese engineers, interviews were also conducted with the other two; one retired vice president of the human resources department in the largest conglomerate in Korea, and one retired recruitment agent whose business was to introduce highly skilled workers in Japan to Taiwanese firms. In a qualitative analysis, the validity of the interviews must be ensured (Yin, 2009). The retired vice president helped to confirm the interview results and offered supplementary explanations regarding the details of Korean cases (if necessary). In fact, he recognised some of the interviewees when presented with the list. For example, he explained the performance,

impacts and results of the interviewees, as well as the CEOs and company expectations of them. He also reviewed to what extent the interviewees were actually involved in top management and had experience leading projects. The retired recruitment agent also reviewed and confirmed the interview results of the Taiwanese cases. She explained the efforts and expectations of Taiwanese firms that were looking for and attempting to hire highly skilled workers in Japan.

3.2. Data collection and analytical methodology

This paper employs a set of required questions and follow-up probes. This methodology invited the interviewees to 'walk through' their experiences, according to the following questions. One set of questions focused on background information (age and education) and circumstances before receiving offers from firms in Korea and Taiwan. For example, 'What was your last position in Japan?'; 'What was your technological field?'; 'How many subordinates did you lead?'; 'Can you describe your career path before receiving offers from firms in Korea/Taiwan?' The second set of questions focused on the factors that led highly skilled workers to sign contracts with firms in Korea/Taiwan. Such questions included: 'What made you want to leave your last job in Japan?'; 'Did you know the firm in Korea/Taiwan before?'; 'Can you describe the procedure of how the firm approached you, with dates as far as you remember?'; 'What was expected of you by the firm in Korea/Taiwan?' Finally, the third set of questions focused on actual work experience for firms in Korea and Taiwan, including: 'What was your role/position in Korea/Taiwan?'; 'How did the firm support you to maximise your work performance?'; 'Can you list the satisfactory and unsatisfactory points (pros and cons) of working for a firm in Korea/Taiwan?' Finally,

the relevant texts, as well as the interview results, were sent to each interviewee. After their final confirmation, conducted to double check the facts (if necessary) and deal with any follow-up questions, the interview results were compiled.

In this paper, the author acted as the interviewer. All interviews were face-to-face and carried out by the author several times in Japan, Korea, and Taiwan between June 2015 and December 2015. Each interview lasted about 2 hours. The interviews were not digitally recorded since interviewees tended to be uncomfortable with recording. Instead, detailed notes were taken during the interviews, with the approval of interviewees. As mentioned earlier, contact with the interviewees was maintained after the interviews in order to double check any points (if necessary). After the interview, the interview results were sent to each interviewee for their confirmation and additional information was requested (if necessary).

This paper employed an embedded, single-case study design (Baxter and Jack, 2008; Yin, 2009). Based on the amount of case studies and analyses, a case study includes four types. Single- and multiple-case studies reflect the differences in the amount of case studies. Since interviews with various information sources were conducted, this paper may appear to be similar to a multiple-case study. However, the data were pooled for the analysis. As a result, the interviews became part of a larger, main unit of analysis. Meanwhile, holistic and embedded designs reflect unitary or multiple units of analysis. The embedded design is advantageous for combining various information sources. Therefore, this paper employs embedded design to discuss the multiple aspects regarding the international mobility of highly skilled workers from Japan to Korea and Taiwan.

4. Findings and Discussions

4.1. What motivated retired or soon-to-retire highly skilled workers in Japan to look for opportunities overseas?

As shown in the earlier literature review, labour migrates to a location in a similar way to gravitation. In this regard, firms in Japan attract significant attention since they include human resources policies that differ in the following ways from those in Western firms. First, firms in Japan provide lifetime employment and a seniority wage system (Ornatowski, 1998). Under this system, the salary principally increases with the employee's age and duration of employment, as well as job responsibilities. The amount of increase varies with educational attainment, tenure, firm size, etc., but the variation difference is minimal. Second, firms in Japan impose mandatory retirement on their employees (Clark and Ogawa, 1996; Clark and Ogawa, 1997). This is a policy whereby employees must retire at a certain age. More than 90 percent of all Japanese firms used to have mandatory retirement policies. Although more Japanese firms are facing significant pressure to change such policies today, due to labour force shortages resulting from Japan's rapidly ageing demographic structure and despite Western-style human resource management practices, the basic structure of the human resources system has not changed. In fact, many companies in Japan still believe that the system is an important one to preserve (Pudelko, 2006).

Accordingly, under such a system, employees in Japan enjoy stability and hence they have little motivation to leave their current jobs and take on new challenges and risks overseas. However, when they reach a certain age, they lose their financial stability, regardless of their health, experience, capability and drive. Moreover, the average life

expectancy in Japan is 83.7 years (the world's highest) (WHO, 2016), and if the mandatory retirement age is set at, for example, 60, then a worker will on average live another 23.7 years and only rely on his/her pension, which is far less than the remuneration he/she received before retirement. Since Japan's ageing society appears to be increasing in number, the average life expectancy will further increase. In this context, it is natural for the retired and soon-to-retire to look for work opportunities to secure their financial stability. Except for a handful of fortunate individuals who find domestic jobs after their mandatory retirement, many employees are offered enticements to work abroad.

In sum, job opportunities and expected incomes after the mandatory retirement policy in Japan have motivated retired or soon-to-retire employees to search for overseas work opportunities. This is similar to the phenomenon in Australia where older workers remain in the labour market, even after they resign or retire from their previous jobs (Perera et al., 2015). The difference in Japan is that the labour market for older individuals is almost totally closed.

4.2.How do firms in Korea and Taiwan find the appropriate highly skilled workers?

Another question concerns how firms in Korea and Taiwan found a highly skilled pool of workers and attracted the most appropriate ones to join their teams. In this regard, finding the appropriate highly skilled workers differs between large firms and small- and medium-sized firms. Based on their business portfolios, large firms in Korea and Taiwan develop a database of global talent in each technology and industry field. Such talent includes young innovators with high potential to senior workers with

superior knowledge and insight obtained from decades of work experience. One way to collect information about highly experienced workers is to use publicly available information, which includes papers and patents. Since this information is related to the performance of workers, such information is useful for finding a list of highly skilled workers. For example, if they conduct R&D, workers often publish papers and file patents, after which such achievements can be easily traced online. In this case, the better one performs, the more his/her papers and patents are published. Another way to find highly skilled workers is to meet them at seminars, conferences and exhibitions since such workers have opportunities to represent their companies at these types of events. Similar to the case of papers and patents, the better one performs, the more often he/she appears at external events. Using the available methods, large firms in Korea and Taiwan consistently monitor and update this global list of 'star' workers.

Meanwhile, small- and medium-sized firms in Korea and Taiwan must rely on recruitment agencies, since such firms do not have enough resources to maintain and periodically update a global database of highly skilled workers. Since there is almost no possibility of finding a job after mandatory retirement in Japan, many retired or soon-to-retire workers apply for work opportunities in firms in developing countries. Recruitment agencies develop a database of highly skilled workers based on these applications, after which they provide information to their clients in Korea and Taiwan. However, successful recruitment occurs on a case-by-case basis. Although the recruitment agencies screen the qualifications of the applicants, it is impossible to determine if the applicants are suitable for firms in Korea and Taiwan until they start working for the firms. In fact, there are cases in which highly skilled workers

immediately resign after starting work in Korea and Taiwan, causing a significant loss for small- and medium-sized firms in the two countries.

Third, sometimes information concerning highly skilled workers in Japan comes from casual conversations in meetings between firms in Korea and Taiwan and their clients in Japan. In this regard, by working with clients in Japan, firms in Korea and Taiwan collect information (e.g. reputations, work records and personal situations) beyond the statistics and facts that recruitment agencies provide. For example, firms in Korea and Taiwan hire highly skilled workers in Japan after they retire. Since the retired employees of their clients have specific knowledge, such as the quality required to procure products, future direction of markets, etc., they can provide useful advice to hiring firms in Korea and Taiwan. Moreover, their clients in Japan also trust the products procured by their suppliers in Korea and Taiwan, since their ex-employees control the quality without any additional costs or communication.

In sum, firms find appropriate highly skilled workers in two ways. First, large firms in Korea and Taiwan maintain a highly skilled worker database on their own and approach such workers when necessary. Second, small- and medium-sized firms in Korea and Taiwan find highly skilled workers through recruitment agencies and their clients. The information from their clients is more reliable than information from recruitment agencies, as the former reduce the risk of mismatches.

4.3. What types of highly skilled workers were actually hired?

This section focuses on which types of highly skilled workers in Japan were hired by firms in Korea and Taiwan, which is relevant to the contributions to their respective firms. First, highly skilled workers with significant R&D experience, such as senior

engineers, were hired by firms in Korea and Taiwan, since they could contribute to upgrading the current technological capability of the firms in which they were employed. In the market, firms in Korea and Taiwan produce products and provide services similar to those of firms in Japan. However, since the quality of the products is considered inferior to that of Japan, hiring key workers from Japan (as technological advisers and business/project leaders) can help Korean and Taiwanese firms to upgrade their capabilities. We should note, however, that 'upgrading' does not necessarily mean copying products. In most cases, the technological knowledge of the Japanese workers was not directly applicable to the Korean and Taiwanese products, since the product and technological trajectories, as well as certain conditions, such as cost and design, still greatly differed. Nevertheless, the knowledge and insights obtained from the Japanese workers' decades of work experience were still helpful in reinterpreting technological principles and resolving technological issues which, in turn, helped to improve the overall quality of the products and services.

Second, highly skilled workers with management experience were hired, after which they became business leaders and managers in firms in Korea and Taiwan. In some instances, highly skilled workers from Japan were assigned to lead new businesses. One reason that these workers left their firms in Japan was that they had lost the opportunity to realise their technological strategies. Mismatches in such strategies often occur between employers and employees for various reasons, including shifts in technological focus, the restructuring of business portfolios, mergers and acquisitions, etc. However, since highly skilled workers are confident in their skills, they tend to look for suitable opportunities overseas. In this regard, firms from Korea and Taiwan could offer these workers the opportunity to realise their ideas, including

providing financial support, research members and research equipment with up-to-date facilities. As a result, the hiring firms obtain new technological capabilities and launch new businesses.

Third, highly skilled workers with sales experience were hired, after which they helped to construct new supply and distribution channels, as well as build trust in the products. In other words, they helped the hiring firms participate in the global production networks. A sales engineer is a hybrid position of sales and engineering that exists in industrial and commercial markets. This differs from other engineers, since they do not conduct R&D on their own. However, this does not mean that they lack technological knowledge. In fact, it is important that they possess such knowledge since they sell technologies and systems, and have to understand the customers' needs in the market. While these highly skilled workers provide advice regarding technological improvements to firms in Korea and Taiwan, they also work as liaison officers for external companies. In some cases, other firms place orders from the hiring firms, based on the condition that highly skilled workers manage quality control of the products. As a result, the hiring firms obtain more trust and better reputations in the market, after which they obtain new suppliers and clients.

In sum, three types of highly skilled workers from Japan were generally hired by firms in Korea and Taiwan: (i) senior engineers with significant R&D experience; (ii) engineers with management experience; and (iii) sales engineers. The first two types contributed by nurturing and upgrading the technological capabilities of the hiring firms. These two types are cases in which the knowledge flow occurred at the firm (organisation) and local (region) levels. The third type contributed by constructing new

supply chains and building trust among clients. This type is the knowledge flow between the communities of practice (Gertler, 2003).

4.4. Contracts to overcome obstacles

As shown in the literature review, obstacles can make an employee in a developed country avoid working in developing countries. Thus, one remaining issue is to determine what measures were taken by firms in Korea and Taiwan to mitigate such obstacles and discuss what types of contracts were provided by Korean and Taiwanese firms for highly skills workers in Japan.

The first is high salaries and work opportunities. According to the interviewees, the minimum salary increase was 30 percent higher than their earnings in Japan before retirement, while the maximum salary was an increase of several times the earnings in Japan (with stock options). Such salary increases were based on various aspects such as experience, specialty, position in the hiring firm and management size. This finding is also supported by another study that revealed that the wage offered by Taiwanese firms to highly skilled workers from Japan was much higher than the wages they had received in Japan (Tabata, 2012). Needless to say, the salary amounts correspond to expected performance and the roles of highly skilled workers in the hiring firms. Such expectations include leading projects, launching new businesses, managing subsidiaries, and advising technology strategies to top managers (such as CEOs and owners' families).

The second is the work environment. Firms in Korea and Taiwan sometimes offer customised layouts of offices and language support as incentives for the highly skilled workers. In regard to the latter, there is always a language issue when hiring foreign

employees who cannot speak the local language. Firms in Korea and Taiwan deal with this problem in two ways. First, they hire Japanese-speaking secretaries and interpreters. At the executive level, firms in Korea hire Japanese-speaking secretaries for each individual. For the non-executive level, these firms hire Japanese interpreters to help the highly skilled workers communicate with local staff members and allocate them into groups that consist of Japanese workers. However, hiring Japanese-speaking staff members has one limitation. Although Japanese-speaking secretaries and interpreters are able to interpret general conversations, they are unable to interpret technical terminologies and industry-specific business vocabularies. Second, firms also offer local language courses to highly skilled workers from Japan so they can communicate with local staff members without the use of interpreters and secretaries. Local language courses can also help to mitigate the limitation above. Since most technical terminologies and industry-specific business vocabularies are common among engineers, understanding some of the local language is sufficient for work-related conversations with local engineers. For example, after several weeks of an intensive Korean language course, our interviewees reached a level at which they could communicate effectively in meetings and emails.

The third is guidance and support for daily life in the local environment. Such support varies by position and size of the hiring firm. Highly skilled workers recruited in Japan, especially those in senior management positions, are provided various benefits. Support teams, formed under the human resources department group, are exclusively dedicated to the highly skilled workers from Japan. For example, firms in Korea offer housing and cars with drivers so that highly skilled workers will not have problems with transportation. Some were even allowed to use cars for private purposes, such as

shopping and enjoying their free time. Such support helps to reduce stress that highly skilled workers experience while living in Korea.

The fourth is family support. Highly skilled workers recruited by firms in Korea and Taiwan generally arrived alone, since their families had work opportunities or other reasons to remain in Japan. As a result, highly skilled workers from Japan often lived alone in Korea and Taiwan. Thus, hiring firms in Korea and Taiwan provided flight tickets for highly skilled workers to visit their families in Japan. Alternatively, highly skilled workers could invite their families to Korea or Taiwan with the same amount of money as the contracted flight tickets. Large firms in Korea even added their children's higher education support into contracts. Such conditions enabled highly skilled workers to concentrate more on their work in Korea and Taiwan.

Based on their annual performance reviews, contracts with highly skilled workers are generally renewed. In some cases, if performance exceeded expectations, then the contract was updated with improved benefits. However, if the performance was substandard, then the contract was either updated with fewer benefits or, in the worst case, not simply not renewed. If the highly skilled workers were not satisfied with the suggested contracts, then they could request additional benefits (subject to the firm's approval).

In sum, all of these efforts made by local companies help to reduce stress and enable highly skilled workers to concentrate on their work.

5. Conclusions and Implications

This paper examines the mobility of highly skilled workers, based on the case of highly skilled workers' mobility from Japan to Korea and Taiwan, in other words, the mobility from a developed to a developing country. By presenting the detailed hiring process, this paper argues that the mobility of highly skilled workers from developed countries to developing ones is not insignificant. In addition, by indicating how highly skilled workers from Japan were managed by, and contributed to, firms in Korea and Taiwan, this paper provides practical knowledge and insights into how firms can best manage highly skilled workers after recruitment.

This paper includes three implications for managing the mobility of highly skilled workers. The first implication specifically concerns companies and government organisations in developing countries. Attracting highly skilled workers from developed countries is an effective strategy to upgrade innovation levels of developing countries. However, in order to attract them, the incentives for highly skilled workers must be carefully designed. The literature review indicates the pull factors of highly skilled workers. This paper also shows how firms in Korea and Taiwan designed pull factors (i.e. incentives) at the micro-level in order to attract a handful of highly skilled workers from Japan. In these instances, pull factors included high salaries, support in the work environment and family support. The findings show that well-designed incentives encouraged highly skilled workers from the developed country come to the developing countries.

The second implication applies to government organisations in developing countries. The literature review indicates the push factors of highly skilled workers.

Some of the push factors can only be alleviated by government organisations. For example, the environmental and social conditions of a developing country can be considered as push factors. In this case, the firms themselves cannot create an attractive environment and social system to retain highly skilled professionals. Thus, government organisations need to take action to improve their environmental and social conditions. If a government does not have sufficient resources to implement such action nationwide, then it might consider establishing exclusive zones to implement the necessary action. As stated earlier, reducing the push factors can make the pull factors more effective.

The final implication specifically concerns human resources in the developing countries. In general, it is the firm's role to find and hire highly skilled professionals. However, monitoring the international labour market and scouting for highly skilled professionals from abroad is far from straightforward, especially for small- and medium-sized companies in developing countries. In fact, a great deal of effort is required to identify them. This paper indicates how small- and medium-sized firms in Korea and Taiwan found appropriate highly skilled workers. Using recruitment agencies, clients and suppliers turned out to be effective for finding highly skilled workers in the labour market. Government organisations can also help companies, for example, by allocating subsidies to companies without sufficient assets to hire highly skilled professionals from abroad. Although the mid- to long-term effects of public financing were not accessed, public financing is effective in attracting highly skilled workers, at least in the short term (Cruz-Castro and Sanz-Menéndez, 2005). Thus, government organisations should focus on how companies can resolve certain issues related to the recruitment of highly skilled professionals from abroad.

Finally, this paper comes with one important caveat. Since it employs a qualitative analysis, the general limitations of such an analysis are applicable. Knowing such limitations, this author attempted to minimise certain issues, such as subjectivity, reliability and validity, by interviewing several employees with different backgrounds and mobility paths, and by also interviewing employers in Korea and Taiwan who were involved in the hiring of highly skilled engineers from Japan. Through this approach, this paper reveals the details of the process regarding the mobility of highly skilled workers in Japan who are retired or soon-to-retire.

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