The Case of Foreign-born Laborers in Japan : Social Capital, Health, and Well-Being

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The Case of Foreign-born Laborers in Japan: Social Capital, Health, and Well-Being

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Abstract

The purpose of this paper is to examine and compare social capital and its effects on various aspects of the lives of migrant workers in Japan, specifically highly educated professionals. To date, there has been ample research on the foreigners living in Japan. However, where the research is lacking is in terms of quality of life, specifically regarding the relations between social capital, health and well-being.

Reflecting a critical labor shortage in the years to come, Japan's government has recently changed its rules and regulations regarding so-called white collar foreign workers in the hopes of making it more attractive, easier, and more accommodating to enter the country. Therefore, examining the current status of foreign-laborers already in Japan, and discovering what factors influence their position and overall well-being have significance toward future immigration policies.

Based on an original survey questionnaire conducted in 2015 (N=419), the data shows that social capital as calculated by the resource generator has significant effects on the subjective well-beings of foreign-born laborers living in Japan. Specifically, it shows that individuals possessing higher social capital have several positive effects including: higher happiness and better health.

Keywords: social capital, migrant workers, subjective well-being, immigration policy

I. Background:

1.1 Population Decline

Japan's overall population peaked in 2008 at roughly 128 million people, ranking 10th largest in the world and 6th largest within the OECD, while the working population peaked several years earlier in 1995 at 87.7 million workers (National Institute of Population and Social Security Research, 2011). Similar to nearly all economically developed countries, Japan has experienced a significant decline in fertility rates. With the current birthrate for Japanese woman at 1.42 children per woman (2014 year), a steady population decline has

been forecasted for the country. At the same time, the country has the highest elderly population in the world as a percentage of the total population. This demographic is also the fastest growing faction within Japan as the post WWII baby-boomer generation begins to age. Adding to this, historically both Japanese women and men have had the some of the longest life expectancies in the world. In 2014 females ranked first at 86.1 yrs, while the men came in third at 79.0yrs (OECD 2014). All of these factors together have created a population demographic that can be described as a top heavy upside-down pyramid.

Where these dynamics are particularly significant for Japan is the fact that the country has little to no immigration. Looking at the current situation, it may be difficult to dramatically increase the number of foreign laborers. If Japan were to accept foreign nationals simply to make up for the decline and to maintain a productive population at the former peak, the nation would have to accept some 200,000 foreign nationals annually, which is unrealistic (Cabinet Office 2014). However, Japan faces a critical labor shortage in the years to come. If migrant labor is be considered as a potential solution, it is imperative that the government take on policies that will make Japan an attractive place for foreigners to immigrate.

1.2 Current Status of the Overall Foreign Population of Japan

Since 1990, the number of registered foreigners in Japan has doubled from 1,075,317 to 2,172,892 people in 2015. In 1990, foreigners accounted for 0.87% of the overall population and accordingly this number too doubled to 1.5% in the year 2015. However, both of these figures (total and overall percentage) are by far the lowest amongst all industrialized countries of the world (OECD 2014).[1)]

1.3 Current Status of Foreign Laborers in Japan

Looking specifically at the number of foreign laborers in Japan, the total is 787,627 in 2014. This accounts for roughly 1.2% of the total workforce. As we can see by looking at Figure 1 the majority of the workforce comes from Asia. Whereas up until the late 1990s and early 2000s the largest group of workers was so-called Nikkei South Americans with Japanese ancestry, the current trend has seen Chinese, along with Vietnamese and Nepalese rapidly increasing every year. This trend is expected to continue in the years to come as the Japanese labor force continues to shrink and the demand for labor increases.

In addition, taking a look at the distribution of foreign workers by visa reveals a few interesting points (Figure 2). As we can see the largest category is the position-based visa. This visa applies to long-term residents of Japan, spouses of Japanese citizens, or spouses of permanent residents. This type of visa allows for recipients to engage in any sort of work of their choosing. The next three types of visas are evenly

1) Within the large contingent of registered Koreans that live in Japan, 70% (About 350,000) of them hold what is known as 'special permanent residence'(tokubetsu eijusha). Essentially, these are people who were born and raised in Japan but are of Korean decent (Ministry of Justice 2014). These so-called 'Zainichi' can obtain Japanese citizenship but they must renounce their Korean nationality. Thus, it can be said that Japan's actual foreign population is about 20% lower than reported.

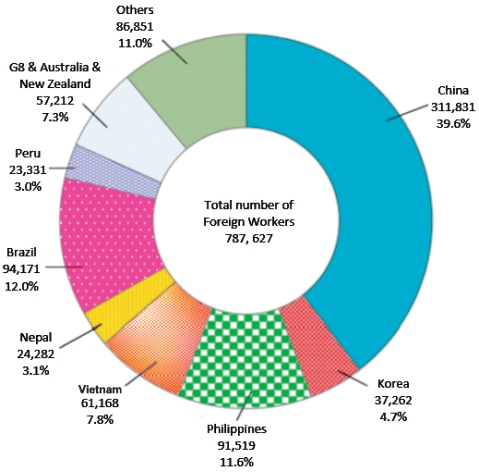

Figure 1
Total number of Foreign Workers in Japan, by country

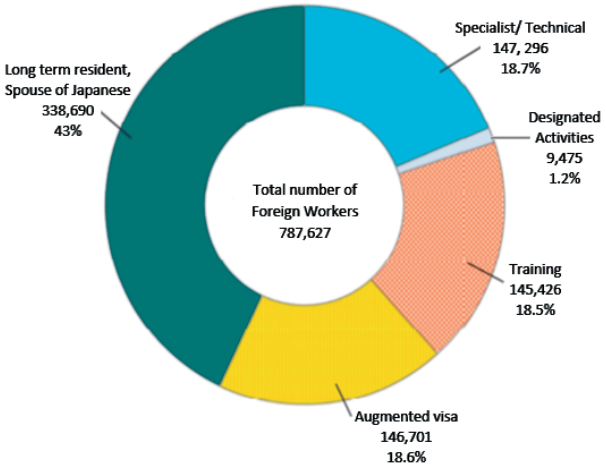

Figure 2
Total number of Foreign Workers, by working visa category

(Source) Ministry of Justice (2014)

distributed: Specialist/Technical, Trainee, and Augmented visa (Activity outside scope permitted). Activity outside of scope permitted mainly applies to individuals who come to Japan for academic purposes. Students in good academic standing are allowed to amend their visas and work up to 28 hours per week in 2014.

1.4 Motivation

We recognize Japan being at a very important crossroads in history. As explained earlier, Japan faces a critical labor shortage in the years to come, so there are several potential outcomes that need to be considered. For example, without contributors to the social welfare systems there is a possibility the systems will become over stressed and no longer function properly. If migrant labor is to be considered as a potential solution, it is imperative that the government take on polices that will make Japan an attractive place for foreigners to immigrate, comfortably assimilate, and become a positive force in Japanese society.

Thus, examining the current status of foreign-laborers already in Japan, and discovering what factors influence their position and overall well-being has significance toward future immigration policies. This paper aims to contribute to the ongoing debate about the future role of foreigners in Japan.

According to the Ministry of Justice, the rules and regulations regarding the acceptance of foreigners into Japan have been modernized and have been more clearly defined with the intention of attracting more white-collar workers. Some of the changes include: taking into consideration an applicant's educational background, working history, language ability, duration in Japan, etc.[2)]

The "Highly Skilled Professional" status already started in May 2012 but under the category of "Designated Activities" visa at the time. With the reform of the Immigration law in 2014, a new, independent

visa category of "Highly Skilled Professional" was created for foreign workers with advanced and specialized skills. Under the new system, points are given according to the applicant's educational and professional background, income and academic achievement, and if you accumulate a certain number of points in the point evaluation, a special visa status is given which includes the following preferential treatment:

- Possibility of engaging in multiple activities that cover different visa categories
- 5 year visa granted
- permanent resident visa after 5 years residency in Japan
- preferential processing of Immigration procedure
- your spouse can also work
- possibility of bringing your parents to Japan
- possibility of hiring a domestic servant

Nevertheless, under these circumstances, the number of highly skilled professional foreigners in Japan remains very low, reflecting the lack of acceptance by the average Japanese populace. Unfortunately, discrimination and a lack of cultural understanding still exist even today (Tsuda, 2006). Therefore, examining the current status of foreign-laborers already in Japan, and discovering what factors influence their position and overall well-being has significance toward future immigration policies.

In sum, for this paper we mainly focus on foreign laborers in Japan and the role of these individual's level of social capital, as measured by the 'Resource Generator', in the analysis of evaluating their quality of life.

II. Previous Research

2.1 Social Capital Defined

In recent years, several researchers have attempted to evaluate the level of living conditions using the concept of social capital (Lin, 2001; Grootaert and Van Bastelaer, 2002; Kawachi et al., 2008; Lin and Erickson, 2008). According to the idea of Putnam (1993), social capital is defined as how social institutions such as 'Trust', 'Regulation for Charity', and 'Network' are put in place within a particular region, which can then improve the efficiency of the society for stimulating cooperative action. Reflecting the idea by Putnam, the World Bank also defines social capital as the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions (Hamilton et al. 2016).

2) Japan's government regarded highly skilled professionals that Japan should accept as follows: "The quality, unsubstitutable human resources who have a complementary relationship with domestic capital and labor", and "the human resources who are expected to bring innovation to the Japanese industries, to promote development of specialized/technical labor markets through friendly competition with Japanese people and to increase efficiency of the Japanese labor markets" (Report of the Council for the Promotion of Acceptance of Highly Skilled Professionals, dated May 29, 2009)

2.2 Benefits of Social Capital

The multitude of benefits of social capital has been well documented in many different researches. Interestingly, social capital has been shown to have numerous positive effects on individual's life. For this study we will focus on those that are pertinent to well-being, health, productivity and Japanese language ability.

Firstly, Bjornskov (2003) studied the effects of social capital in Scandinavian countries, and he concluded that social capital mattered much more than income for people's life satisfaction in advanced societies. In addition, Kawachi et al. (2008) and Kondo (2007) measured indicators of social capital based on the extent of trust and social cohesion in a residential area and reported that the higher the level of social capital is, the higher the level of health status of individuals and the average expectancy. These results are applied to the cohorts that were conducted in Japan, Finland, Sweden, and England (Kawachi et al. 2008).

Second, social capital has been demonstrated to be conducive to economic growth through the improvement of labor productivity (Bjornskov, 2003). In their case study on the Hamamatsu Nikkejin in Japan, Cornelius and Tsuda (2002) used multivariate models to examine the effect of social capital on wage level for immigrant Brazilian workers in Japan. As a result, they showed that every social capital variable except for marriage status had a positive effect on wages. Namely, immigrants with access to social capital in the form of immigrant networks and ethnicity are able to obtain jobs with higher wages in Japan (Cornelius and Tsuda 2002). To sum up, their results showed that for immigrant workers in Japan, social capital leads to higher wages and easier access to employment.[3)]

Third, in a recent study of Thai and Filipino women in Fukuoka Prefecture, Saito (2011) established that language attainment was a key element in foreigners overcoming discrimination and assimilating into Japanese society. The Ministry of Internal Affairs and Communication (MIC) in 2006 defined a multicultural coexistent society as "people of different nationalities and/or races recognizing each other's cultural differences, working to build equal relationships, and living together as members of the same community (Saito 2011). Based on this definition the Japan's government created a plan for supporting foreigners living in Japan. An important element of this plan was to teach foreigners the Japanese language.

Putnam (1993) demonstrates the importance of language ability and how it should influence immigration policy. He argues that a successful immigration policy is one in which language education is provided to incoming immigrates in a social context so that fellow immigrants can get to know each and natives of the country. It can be considered that under the society where social capital is accumulated immigrants are more likely to study the language through the increase in interaction and community building.

As mentioned above, social capital has been shown to have numerous positive effects on individual's life. Empirical research has proven that those with higher social capital enjoy such benefits as: high level of hap-

3) Nakamura (2009) uses elements of Borjas' influential work, *The Economics of Immigration* (1994), to argue that as opposed to decreasing native wages, an increase in the number of foreigners can actually have a positive effect on native wages.

piness, better health and others (Kawachi et al. 2008).

III. Data

3.1 Data used

We conducted a nationwide Internet survey called "Survey on social capital of foreign laborers in Japan" and used micro-data collected from the survey (N=419) through the NTT Com Online. The surveys were designed and implemented during 2015.[4] The main respondents of the survey are foreign laborers with high educational background living in Japan. The survey captured ample information about foreign laborers' subjective assessments of their own well-being, personal traits, demographic, and socioeconomic statuses. Furthermore, the survey includes perceived neighborhood characteristics and human resources that they can access to, all of which are useful for examining the relationships between social capital, health and well-being.

3.2 Variables

The surveys we conducted are summarized in Table 1, Table 2, Figure 3 and Figure 4.

Table 1 lists the basic attributes of the respondents to the survey, such as age, the number of years in Japan, and where the respondent resides. Table 2 lists in much greater detail all of the variables that were used, their mean percentages and their standard deviation. In our later regression analysis models, the main three dependent variables are Happiness, K6 score (a measurement of one's mental health), and Labor Satisfaction. These are all dummy variables which are made by the answer results of the survey questionnaire.

Additionally, the independent variable(s) is a measurement of the respondents Social Capital as derived from their responses to questions in the 'Resource Generator'. The main control variables are gender, marriage status, children, educational background, position at work, type of work, and self-rated Japanese language ability (1-10 scale). The academic background of respondents was quite high. We believe this is due to the fact

Table 1 Distribution of basic attributes

	Freq.	Percent
[Age]		
20s	179	42.72
30s	168	40.10
40s	72	17.18
[Residence years in Japan]		
Less than three years	157	37.47
Between three and ten years	194	46.30
More than ten years	68	16.23
[Residence area in Japan]		
Kanto	157	37.47
Kansai	194	46.30
Other regions	68	16.23
Total	419	100.00

(Source) Survey on Social Capital of Foreign Laborers in Japan

4) The survey was sponsored by the Japanese Society for the Promotion of Science.

Table 2 Basic statistics of variables used

	Male (n=224)		Female (n=195)	
	Mean	Std. Dev.	Mean	Std. Dev.
Happiness (high)	58.0%	0.49	50.8%	0.50
K6 score (high)	13.8%	0.35	14.9%	0.36
Labor Satis (high)	37.9%	0.49	33.3%	0.47
Spouse	48.7%	0.50	32.3%	0.47
Spouse (Japanese)	33.9%	0.47	17.9%	0.38
Children	28.6%	0.45	17.9%	0.38
Middle/High school	10.3%	0.30	8.7%	0.28
Two year college/ Technical School	5.4%	0.23	12.3%	0.33
Four year university	47.8%	0.50	49.7%	0.50
Graduate School	35.7%	0.48	29.2%	0.46
Regular employee	30.8%	0.46	25.1%	0.43
Non-regular employee	20.5%	0.40	25.1%	0.43
Part-time employee	9.8%	0.30	20.0%	0.40
Self employed	10.7%	0.31	5.1%	0.22
Professional/Technical	19.6%	0.40	16.4%	0.37
Monthly income (10000yen)	24.9	13.23	20.8	11.59
Labor hour (per week)	36.7	13.71	28.9	14.37
SC1 (life)	0.1	2.83	−0.1	2.49
SC2 (career)	0.0	1.19	0.0	1.21
SC3 (speciality)	0.0	1.17	0.0	1.12
Japanese (speaking)	6.5	2.78	6.5	2.69
Japanese (Listening)	7.0	2.75	6.8	2.72
Japanese (Reading)	5.7	3.01	5.8	2.81
Japanese (Writing)	5.1	2.97	5.3	2.80
Japanese (Total level)	24.3	10.74	24.3	10.32
Public pension (Insured)	38.8%	0.49	34.9%	0.48
Health insurance (Insured)	82.1%	0.38	81.0%	0.39
Personality (Optimistic)	29.5%	0.46	21.0%	0.41

(Source) Survey on Social Capital of Foreign Laborers in Japan

that our survey was conducted in English and via the internet where respondents tend to have higher academic achievement records.

Figure 3 depicts the nationalities of the respondents to our survey, “Social Capital of Foreign Laborers in Japan”. These results are also compared with the current demographics of the foreign laborers of Japan. As is reflected in our results, the number of respondents from G8 and English speaking countries is considerably high, and conversely, non-English speaking countries such as Brazil are not highly represented.

In Figure 4 we show the type of visas that respondents currently hold. We also compare these results

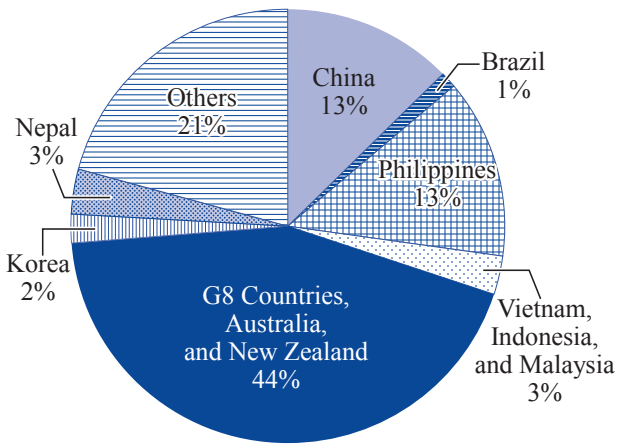

Figure 3 Distribution by Country

(Source) Survey on Social Capital of Foreign Laborers in Japan

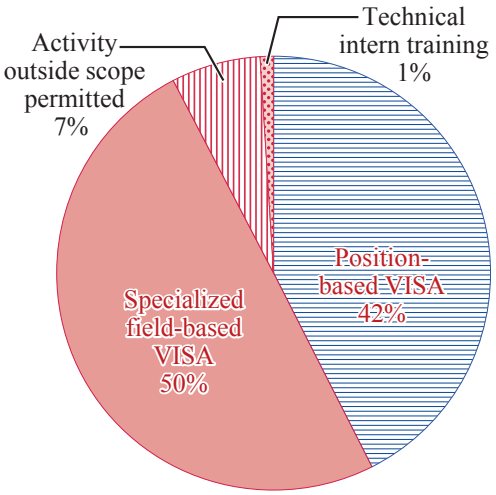

Figure 4 Distribution of VISA type

(Source) Survey on Social Capital of Foreign Laborers in Japan

with the present state of visa distribution amongst foreign laborers in Japan. In comparing the results of the survey with the present data on foreign laborers in Japan, we can see that our survey has a significantly higher relative percentage of Specialist/Technical visa holders along with a considerably smaller percentage of Training visa holders. This can be attributed to the survey being conducted on the internet as well as our target respondent being highly educated individuals.

3.3 Measurement of Social Capital

For this study, the 'Resource Generator' was used as the means to ascertain an individuals' level of social capital. The resource generator is an instrument to assess individual social capital. It can be conceptualized as valued resources that individuals can access through their social networks (Van der Gaag and Snijders 2005). According to Van der Gaag and Snijders (2005), these valued resources can be accessed in several domains of life (at work, in private life), and spans across a range of goods from the material (e.g. borrowing money) to the symbolic (e.g. prestige and influence).

In our survey, a series of questions were asked regarding individuals' access to certain resources. These included physical resources such as borrowing money, the use of an automobile, help with moving, assistance with fixing a computer/bicycle, etc. More abstract resources included access to expert information, connections to people involved in politics and media, and knowing people who speak more than one language.

Table 3 summarizes the results of the answers of foreign laborers regarding the 'Resource Generator'. The content of the questionnaire is as follows: "Do you personally know anyone in your prefecture or the surrounding areas with the skill or resource listed below that you are able to gain access to within one week if you needed it? If you know someone who can provide you with the stated resource, please select the appro-

Table 3 Social Capital for Resource Generator

	Resource Generator	Male (n=224)		Feale (n=195)		Min	Max
		Mean	Std. Dev.	Mean	Std. Dev.		
1	Help you find a job/introduce you to a job	0.54	0.50	0.52	0.50	0	1
2	Give you a good reference for a job	0.56	0.50	0.54	0.50	0	1
3	Give you sound advice on problems at work	0.49	0.50	0.52	0.50	0	1
4	Give you career advice	0.40	0.49	0.41	0.49	0	1
5	Lend you a large amount of money	0.25	0.44	0.16	0.37	0	1
6	Lend you a small amount of money	0.52	0.50	0.48	0.50	0	1
7	Give you sound advice about money problems	0.31	0.46	0.35	0.48	0	1
8	Works with local government	0.39	0.49	0.31	0.46	0	1
9	Knows a lot about laws in Japan	0.44	0.50	0.44	0.50	0	1
10	Has contacts with the local newspaper, radio, TV	0.36	0.48	0.31	0.46	0	1
11	Discuss politics with you	0.42	0.49	0.37	0.48	0	1
12	Give you legal advice	0.28	0.45	0.29	0.46	0	1
13	Help you to find somewhere to live	0.55	0.50	0.55	0.50	0	1
14	Help you move	0.50	0.50	0.49	0.50	0	1
15	Do your shopping if you are ill	0.43	0.50	0.37	0.48	0	1
16	Look after your home or pets if you are away	0.33	0.47	0.33	0.47	0	1
17	Give you access to an automobile	0.37	0.48	0.31	0.46	0	1
18	Knows a lot about DIY (Do-It-Yourself)	0.27	0.44	0.28	0.45	0	1
19	Can repair a bicycle	0.36	0.48	0.35	0.48	0	1
20	Knows how to fix problems with computers	0.30	0.46	0.28	0.45	0	1
21	Knows a lot about health and fitness	0.36	0.48	0.36	0.48	0	1
22	Speaks a language other than English or Japanese	0.46	0.50	0.37	0.48	0	1

(Source) Survey on Social Capital of Foreign Laborers in Japan

priate box (Please choose all that apply)."

According to the result, about half of respondents have a propensity to achieve job-related human resources such as a person who could 'help you find a job/introduce you to a job,' 'give you a good reference for a job,' and 'give you sound advice on problems at work'. On the other hand, in regards to human resources consisting of persons who give professional knowledge or have high levels of information regarding life circumstances, only about 30% respondents have access to them.

In the analysis, we identify principal components that capture several aspects of human resources of the 'Resource Generator' based on the results of the questionnaire. The results of principal component analysis are summarized in Table 4. It is shown that around 50 % of the variation is explained by the main three components, and the additional components' eigenvalues fall below one. This implies that the degree of foreign laborers' human resource can be decomposed into three main factors. Therefore, we employ the first three components as the candidates evaluating the level of social capital. We name these factors "Social Capital 1 (human resource in someone's life)", "Social Capital 2 (human resource related to career knowledge)" and

Table 4 Eigenvalues and eigenvectors of main principal components

	Eigenvalue	difference	Contribution Ratio
Component 1	7.16	5.73	32.52%
Component 2	1.43	0.12	6.49%
Component 3	1.31		5.96%

	[Dummy variables of Resource Generator]	Eigenvectors		
		Comp 1	Comp 2	Comp 3
1	Help you find a job/introduce you to a job	0.213	0.360	−0.171
2	Give you a good reference for a job	0.215	0.375	−0.090
3	Give you sound advice on problems at work	0.218	0.426	0.073
4	Give you career advice	0.204	0.375	0.094
5	Lend you a large amount of money	0.207	−0.173	−0.008
6	Lend you a small amount of money	0.229	−0.090	−0.294
7	Give you sound advice about money problems	0.242	0.070	0.055
8	Works with local government	0.185	0.002	0.407
9	Knows a lot about laws in Japan	0.207	−0.091	0.408
10	Has contacts with the local newspaper, radio, TV	0.217	−0.145	0.211
11	Discuss politics with you	0.189	−0.039	0.172
12	Give you legal advice	0.228	−0.049	0.397
13	Help you to find somewhere to live	0.243	−0.034	−0.189
14	Help you move	0.239	−0.023	−0.199
15	Do your shopping if you are ill	0.245	−0.153	−0.332
16	Look after your home or pets if you are away	0.225	−0.261	−0.252
17	Give you access to an automobile	0.231	−0.145	−0.102
18	Knows a lot about DIY (Do-It-Yourself)	0.207	−0.090	−0.010
19	Can repair a bicycle	0.189	−0.298	−0.034
20	Knows how to fix problems with computers	0.207	−0.078	0.065
21	Knows a lot about health and fitness	0.202	−0.092	0.075
22	Speaks a language other than English or Japanese	0.108	0.325	−0.157

(Source) Survey on Social Capital of Foreign Laborers in Japan

“Social Capital 3 (human resource related to specialist knowledge)” on the basis of the values for items in each component and factor loadings.

The first component can be considered as the overall level of human resources including several types, while the second component explaining the level of human resources is related to occupational knowledge. The third component can be viewed as the level of human resources which give special knowledge.

3.4 Hypothesis

Taking into consideration the previous works which examined the relationships between social capital, health, well-being and productivity, this study will examine the case of foreign laborers in Japan. We mainly

set the following three hypotheses.

1. Foreign laborers with higher social capital will have higher language ability.
2. Foreign laborers with higher social capital will have higher well-beings such as happiness, self-rated health and labor satisfaction.
3. Foreign laborers with higher social capital will achieve higher productivity and as a result, can gain higher wage level.

IV. Econometric Analysis

4.1 Empirical model

We employed logit model estimation by maximum likelihood estimation to verify whether the hypotheses noted above are valid or not. Firstly, we included the three components of social capital showing the level of human networks, called 'Resource Generator' in the econometric model, and investigated the impacts of them on Japanese language ability.

Next, we verified the effect of social capital components on their subjective well beings such as happiness, self-rated health and labor satisfaction. As health status indicators, we employed K6 which shows the level of mental illness instead of normal self-rated health in order to ensure the objectivity of indicators.

Third, we checked whether the level of social capital can enhance labor productivity through the several processes by estimating wage function. We used quantile regression method, considering the case where the impacts of social capital would change according to foreign laborers original wage levels.

4.2 Estimation results

The estimated results of Logit estimation are shown in Table 5 and Table 6. First, Table 5 presents the estimated results on the dependent variable "Japanese language ability (high) dummy". The Japanese language levels from eight to ten were allocated to one in dummy variable. As we can see from the figure, the two components of SC1 (life) and SC2 (career) regarding the 'Resource Generator' are statistically positively significant on Japanese language ability. Namely, accumulating human networks prompts the improvement of local language proficiency. In addition, several dummy variables showing self-owned, highly educated, and long stay are related to high levels of Japanese language ability.

In addition, Table 6 shows the impacts of social capital on subjective well-beings such as happiness, mental illness level (K6) and labor satisfaction. The main results are as follows. First, SC1 (life) is highly related to subjective well-being except for labor satisfaction. The higher SC1 of a foreign labor, the higher happiness and the lower K6 they can achieve. On the other hand, SC3 (speciality) is negatively correlated to happiness level.

Second, the overall level of Japanese language has a positive effect on labor satisfaction even after

Table 5 Logit model estimation on factors of Japanese language ability
(N=419)

	Odds Ratio	Std. Err.	P value
Female	1.621	0.419*	0.06
China	4.423	1.833***	0.00
Other than Kanto region	1.007	0.281	0.98
Less than 3 years	0.114	0.036***	0.00
Over than 10 years	3.401	1.514***	0.01
Spouse	0.923	0.349	0.83
Spouse × Spouse (Japanese)	0.984	0.428	0.97
Child	0.593	0.211	0.14
30s	0.433	0.141**	0.01
40s	0.173	0.092***	0.00
Two year college/ Technical School	1.394	0.842	0.58
Four year university	3.415	1.593***	0.01
Graduate School	2.925	1.406**	0.03
Non-regular employee	0.727	0.232	0.32
Part-time employee	0.510	0.221	0.12
Self employed	3.586	1.760***	0.01
Professional/Technical	1.870	0.613*	0.06
household income (high)	2.425	0.924**	0.02
household income (low)	1.949	0.759*	0.09
SC1 (life)	1.111	0.054**	0.03
SC2 (career)	1.205	0.130*	0.08
SC3 (speciality)	1.032	0.107	0.77
Personality (Optimistic)	0.953	0.271	0.87
constant	0.440	0.251	0.15
log likelihood		−215.6	

(Source) Survey on Social Capital of Foreign Laborers in Japan
(Note) ***,**, and * are statistically significant at 1%, 5% and 10% level.

important covariates such as job status and individual/household attributes are taken into account. Considering the estimation result in Table 5, it is possible that social capital regarding human network is indirectly influential to their labor satisfaction through the improvement of Japanese language proficiency.

Third, variables such as low income (bottom 25%) and non-regular employee are also important for subjective well-being, especially for mental illness level (K6). In addition, long stay itself affects the level of K6.

Finally, we confirmed the impacts of social capital on foreign laborers' productivity by estimating wage function. The logarithm of hourly wage is used as a dependent variable. According to the estimation result of quantile regression which focuses on three percentiles (p10, p50, p90), the statistical significance between social capital and wage were not confirmed in all quantiles. Namely, contrary to the result of Cornelius and Tsuda (2002), we couldn't directly confirm the effect of social capital on labor productivity.

Table 6 Logit model estimation of social capital and subjective well-being
(N=419)

	Happiness [high]			K6 [high]			Labor Satis [high]		
	Odds Ratio	Std. Err.	p value	Odds Ratio	Std. Err.	p value	Odds Ratio	Std. Err.	p value
Female	0.719	0.175	0.18	1.070	0.348	0.83	0.655	0.170	0.10
China	1.318	0.537	0.50	0.141	0.150*	0.07	0.807	0.453	0.70
Other than Kanto region	2.133	0.541***	0.00	1.243	0.427	0.53	0.767	0.212	0.34
Less than 3 years	1.121	0.319	0.69	0.557	0.209	0.12	2.383	0.743***	0.01
Over than 10 years	0.855	0.353	0.70	3.203	1.742**	0.03	1.638	0.688	0.24
Spouse	3.237	1.239***	0.00	0.758	0.390	0.59	2.866	1.241**	0.02
Spouse × Spouse (J)	0.409	0.177**	0.04	1.204	0.699	0.75	0.621	0.289	0.31
Child	0.912	0.321	0.79	1.268	0.618	0.63	0.955	0.378	0.91
30s	0.802	0.243	0.47	1.448	0.582	0.36	1.230	0.398	0.52
40s	0.602	0.298	0.31	0.330	0.227	0.11	1.468	0.708	0.43
Two year college/ Technical School	1.772	1.074	0.35	0.453	0.374	0.34	2.338	1.642	0.23
Four year university	0.407	0.175**	0.04	0.788	0.409	0.65	1.159	0.570	0.76
Graduate School	0.623	0.279	0.29	0.468	0.272	0.19	1.617	0.874	0.37
Non-regular employee	0.651	0.192	0.15	2.206	0.850**	0.04	1.158	0.352	0.63
Part-time employee	0.740	0.294	0.45	1.136	0.531	0.79	0.856	0.329	0.69
Self employed	0.543	0.262	0.21	0.526	0.455	0.46	1.263	0.644	0.65
Professional/Technical	0.702	0.216	0.25	0.655	0.277	0.32	0.951	0.278	0.86
household income (high)	0.834	0.300	0.61	0.911	0.478	0.86	0.755	0.273	0.44
household income (low)	0.326	0.123***	0.00	4.876	2.025***	0.00	1.090	0.384	0.81
Japanese (Total level)	0.924	0.272	0.79	0.503	0.219	0.11	1.938	0.611**	0.04
SC1 (life)	1.215	0.058***	0.00	0.862	0.059**	0.03	1.059	0.052	0.24
SC2 (career)	1.025	0.103	0.81	1.078	0.145	0.58	1.090	0.116	0.42
SC3 (speciality)	0.836	0.088*	0.09	1.055	0.150	0.71	0.982	0.111	0.87
Personality (Optimistic)	2.210	0.627***	0.01	1.121	0.410	0.76	1.696	0.500*	0.07
Constant	2.129	1.156	0.16	0.157	0.107***	0.01	0.327	0.204*	0.07
log likelihood	−227.7			−142.3			−192.4		

(Source) Survey on Social Capital of Foreign Laborers in Japan
(Note) ***,**, and * are statistically significant at 1%, 5% and 10% level.

Table 7 Quantile Regression for Wage function

[Dep: ln (wage)]	p10			p50			p90		
	Coef.	Std. Err.	p-value	Coef.	Std. Err.	p-value	Coef.	Std. Err.	p-value
SC1 (life)	−0.043	0.03	0.17	−0.003	0.01	0.79	−0.010	0.02	0.68
SC2 (career)	−0.016	0.07	0.82	−0.043	0.03	0.15	0.043	0.06	0.49
SC3 (speciality)	−0.079	0.06	0.18	0.010	0.03	0.76	0.044	0.06	0.47

(Note) Controll variables regarding nationaligy, gender, residence year age, education, job status, Japanese language aptitude and household types are all included.

V. Conclusions

As discussed earlier, we used the 'Resource Generator' to measure individual's level of social capital. Based on the characteristics of human resources that an individual possesses around them, we derived three variables of Social Capital: 1. The network of general support that one has in their everyday life [SC1 (Life)], 2. The support that one has regarding their career, finding work, etc. [SC2 (Career)] and 3. The support that one has in terms of gaining specialized knowledge or information from their network, such as regarding laws [SC3 (Speciality)]

From our analysis we came to three main conclusions. First, in the case of foreign laborers, even after controlling for various individual and main characteristics, an individual's level of Social Capital is statistically significant on subjective well-being (ex: happiness, health). Thus based on these results it can be said that hypothesis 2 held true. This is an important finding which corresponds to previous researches that have found similar results in different countries and with different test subjects. Therefore, it gives a platform for Social Capital research in Japan and would suggest that future work in this field is warranted.

Second, there is a positive correlation for foreign laborers with Japanese language ability and job satisfaction (controlling for all main variables). By referencing tables 5 & 6, we can say that language ability appears to have major implications for an individual's level of social capital and job satisfaction. These results correspond with our first hypothesis. Obviously, being able to create social capital is a key principle in being able to communicate with others in the local language and this holds true for foreign laborers in Japan.

Correspondingly, having the ability to communicate well at work lowers obstacles to productivity as well as decreases the stress and frustration of not understanding colleagues or superiors. Therefore, Language ability can be deemed to be a very important variable amongst foreigners living in Japan. Considering these results, it would be prudent for the Japanese government to consider Japanese language promotion, not only domestically for current foreign residents, but also abroad for future sojourners who will set foot in Japan. As the results show, the accumulation of social capital regarding human networks will contribute to improvement of Japanese language proficiency.

Lastly, controlling for all main variables, at present, we cannot confirm a positive correlation between foreign laborers' level of Social Capital and labor productivity (wages). These results did not correspond with our third hypothesis. It could be thought that if we had access to panel data covering several years that we would see the impact of Social Capital on wages, namely that those with higher social capital would more likely see a wage increase.

Finally, further analysis in the future is absolutely necessary. While the data collected from the survey was original and hopefully provided new insight on the situation of foreign laborers in Japan, a larger sample size would be desirable for the future. In addition, identifying policies that support and improve foreign laborers personal networks (Social Capital) and their Japanese language ability is a very important future task.

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