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DETERMINANTS OF EMPLOYING OLDER PEOPLE: A COMPARATIVE ANALYSIS FROM ASIA

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Abstract

This paper analyzes factors that influence the employment of older people in Japan and South Korea, specifically, the similarities and differences in both countries. The dataset for this study was compiled from two surveys administered by each country. Heckman (2SLS) estimation model was used in order to resolve sample selection bias and the results indicate that pension and non-pension income have negative effects on employment of older people in both countries. Older people have a low probability of employment if they are of poor health or are women, and the probability of employment declines every year in Japan but increases in South Korea.

Furthermore, the effects of family variables on employment of older people are different in both countries. By comparing these variables, this paper shows the factors affecting employment of the elderly and the strategies governments should employ towards the employment of this age group in both countries.

Keywords: employment, aging society, East Asia, policy environment, family support.

1. Introduction

Population aging and its associated issues are one of the major concerns in our modern society. The paper written by Kim and Lee (2007) is an excellent study that analyzed demographic changes, savings, and current account in East Asia. It shows that the rapidly aging population and subsequent rise in the dependency rates in East Asia over the next decade might cause substantial deterioration in saving rates and current accounts; therefore, national governments could make in anticipation of the demographic changes, for example, extension of retirement age. It took France 115 years for the rate of aging of its population to reach 14%; for Sweden, it took 85 years; for Germany, it took 40 years; and it took the UK 47 years. Japan, on the other hand, required only 24 years for the rate of aging to increase. In 1970, the rate surpassed 7% and then in 1994, the rate reached 14%. The rate of aging of Japan's population is fast comparatively to the western countries (Statistics Bureau of the Ministry of Internal Affairs and Communications, undated). South Korea is also expected to transition from an aging society to an aged society in only 26 years, and beyond that, South Korea to become one of the highest aged societies, almost at the same level as Japan. This rapid aging of the labor force will result in different policy outcomes for South Korea and Japan.

As population aging progresses, the labor supply will decrease and unless there is an increase in labor productivity to offset the difference, it will lead to a slowdown in economic growth. In addition, the burden of social support provided to older people will increase as the number of productive individuals supporting each older person decreases; it then increases the cost of social security that includes pension and healthcare costs, resulting in various social problems such as burdens on state finances. In this context, it is useful to understand elderly employment policies in Japan (the country with the highest aged population in the modern world) and South Korea (the country with historical and institutional similarities to Japan and currently experiencing the highest ever speed of population aging). In addition, it is important to consider how employers (corporations or public institutions) and workers are reacting to the conditions under the current policies.

This paper examines employment policies for older workers in Japan and South Korea. Ultimately, this paper shows that both companies and governments should work together to support the employment of the elderly and, in turn, the development of a sustainable aging society in each country. The analysis focuses on survey data from Japan and South Korea and examines the similarities and differences related to the employment of older people in both countries. For example, in South Korea, there is a growing population of baby boomers leaving the workplace and they are expected to experience many hardships. Thus, companies are preparing measures to minimize the social impact associated with this large-scale retirement wave, which is already ongoing and expected to continue for nearly ten more years. On the other hand, the Japanese government has enacted the law concerning stabilization of employment of older persons, which stipulates that a company cannot set the retirement

age below the age of 60; in recent years, the law has been expanded to encourage companies to continue employing workers until the age of 65. The situation is different in South Korea where the baby boomer generation extends over a longer period and the average life expectancy is 80 years. The retirement age has remained at 53 and, as a result, South Koreans experience at least 30 years of life after retirement. Furthermore, since the Asian financial crisis, older people have been forced to take early retirement: viewing older people as high-cost, low-productive workers, corporations take advantage of the fact that the retirement age is voluntary at the time of corporate restructuring. The aging population problems in South Korea are serious and demand attention (Hyundai Research Institute, 2010). Japan, on the other hand, has a different situation, as Japanese are eligible for benefits starting at the age of 65, provided they are enrolled in the national pension program. Therefore, as the population aging progresses, the number of pensioners will also increase; meanwhile, because the productive population shrinks, the national pension could collapse (National Pension Service, undated).

Determining the employment situation among older people is difficult because of the influence of various factors, including the country's employment practices and overall system as well as pension plans that affect the companies and workers. In addition, because South Korea is still on the verge of becoming a full-fledged aged society[1], it is difficult to determine what type of policy will produce what effect. The employment situation with the elderly population of South Korea can be usefully compared with the situation in Japan. Japan shares a common employment system and set of practices as well as cultural aspects with South Korea. Moreover, Japan has already become a super-aged society at the rapid rate South Korea is currently experiencing, and conducting a comparative analysis provides a window into understanding the factors affecting the situation in South Korea.

Moreover, there was comparison of the two specific terms from 1980s to mid-2000 in Japan and from mid-1990 to mid-2000 in Korea. The first basis of such comparison is that aging ratio and the policies regarding the aging society are very similar in the two countries. For example, the ratio of 65 year old or older population to the total has been over 7% in both countries, which means that Japan and Korea are already aging societies, and their laws clearly have been indicating 60 year old as the retire-

1 According to Japan's Statistics Bureau of the Ministry of Internal Affairs and Communications (undated) and South Korea's Statistics Korea (undated) a society with a percentage of elderly population (age 65 or older) of more than 7% but less than 14% is defined as an 'aging society'; a society with more than 14% but less than 20% of elderly population is defined as an 'aged society'; and a society with more than 20% of elderly population is defined as a 'super-aged society'. The ratio of elderly population (age 65 or older) to the entire population as the definition of 'super-aged society' varies by various agencies; for example, 20%, 21%, or 25% is used. However, in this paper, we define it at 20%, which is the standard for the Japanese and South Korean governments.

ment age since 1986 (Japan) and 1991 (Korea). Second, since senior citizens' employment status can be easily affected by the countries' business cycle or economic crisis, I could deduct general and reasonable conclusion with consideration for variable economic situation.

Japan has experienced economic boom in 1980s, so called the bubble economy followed by the economic recession starting from early 1990s also known as the lost decade. On the other hand, Korea went through the economic boom until mid-1990s and the severe economic crisis in late 1990s. I tried to compare the data from both countries considering the economic boom and recession.

2. Conceptual and cultural background

2.1. Literature review

In terms of the effects of the system and the law that influence the employment of older people, several previous studies analyzed the effect of the Age Discrimination in Employment Act (ADEA) of 1967 implemented in the United States. Adams (2004) examined the effect of the ADEA by reviewing the employment rate among older people and questioned the effectiveness of regulatory law in improving the employment rate. Johnson and Neumark (1996) indicates that, at least for some workers, age discrimination in the workplace may be (or may have been) a serious problem that provides a basis for legislation restricting discrimination against older workers. Chan and Stevens (2001) analyzed job loss and employment patterns of older workers and found large and long-term effects of job loss on the future employment probabilities of older workers. Manning (1996) also analyzed the relationship between unemployment rate and income by using two-phase GMM estimate and showed the seriousness of the age discrimination toward older people. Robert (1988) demonstrated through his analysis of industries and occupations that the opportunity for older people to become employed is limited; however, he did not investigate the limitation of employment opportunities for females and disabled people.

Chan and Stevens (1999) examined the effects of late-career job loss of older persons on wages, assets, employment expectations, and actual employment, demonstrating that there are differences in reemployment patterns between older males and older females. The internal labor market theory that has supported the existing Japanese retirement system on theoretical grounds was based on deferred compensation (Lazear, 1979); however, Daniel and Heywood (2007) explained that delayed compensation more effectively deters shirking among young workers than among older workers. In addition, Daniel and Heywood (2007) presented somewhat weaker evidence that firms, which require greater specific human capital, also hire a smaller share of older workers. Furthermore, more recent studies by Heywood, Jirjahn and Tsertsvardze (2010) presented strong evidence for the role of deferred compensation and internal labor markets as a negative predictor of hiring older workers.

A paper by Ho, Wei and Voon (2000) examined the impact of factors such as age on the unemployed length, expected wage, promotion and training opportunity in

order to analyze the labor market in Hong Kong, and demonstrated that older people are disadvantaged compared to younger people in obtaining a job and older people require specific occupational training. However, the magnitude of the disadvantage found in this study shows that more research is required to assess the effectiveness of market competition in containing pure age discrimination.

Moreover, only a few of the previous studies have included analyses of the Japanese market wage rate; thus, its effect on employment has not been quantitatively demonstrated. Seike and Ma (2008) and Lee (2015) conducted a longitudinal analysis by using data from the Survey on Employment Conditions of Older Persons produced by Japanese Ministry of Health, Labor and Welfare (MHLW from here on). Especially, Seike and Ma (2008) reached a very detailed understanding of the state of employment among older males. This current study builds on Seike and Ma (2008) by addressing its shortcomings, namely, that it did not include data from the mid-1980s or older females. In this paper, I included data for older females, as well as some longitudinal data on South Korea, in order to produce a more comprehensive comparison.

In this study, I will conduct comparative analyses on elderly employment and policy effect between Japan (the country with the highest aged population in the world, especially in East Asia) and South Korea (the country with the fastest aging population).

2.2. Background on Japan and South Korea

2.2.1. Similarities

Compared to the West, the employment practices and policies for older people in Japan and South Korea share some important features in terms of institutional environments, the employment systems, and the degree to which each country's population is aging. For example, the social security system is inadequate in both countries. This situation is largely a result of cultural factors as in East Asian culture it is more common and expected for families to provide support for elderly people rather than relying on the government for this support.

Both countries are also influenced by corporate culture that assumes lifetime employment. The employment systems in each country are regulated by retirement age requirements that are different from western countries. For example, because federal laws in the US and Belgium (see Agediscrimination.info, 2018) prohibit employment discrimination based on age, there is no termination of employment based on age. On the other hand, Japan and South Korea instead pursue the promotion of welfare through employment policies that require older people to work even after they retire.

Finally, while the population of western societies ages slowly over a long period, Japan and South Korea have relatively faster rates of aging.

2.2.2. Differences

Despite their similarities, Japan and South Korea also differ in terms of values, international environments, and the operation of their employment systems. For example, Koreans treat the elderly well[2] according to the Confucian philosophy that remains widespread in South Korea; however, this philosophy has different effects on the employment of older people. Japan became an aging society in 1970 when its proportion of the population aged 65 or older was 7%. At this time, the country was experiencing a high economic growth period and there was little worldwide resistance to the idea of elderly welfare. On the other hand, South Korea became an aging society in 2000 at the time of the Asian financial crisis. At this time, Neoliberalism became popular worldwide and the corporate environment changed considerably because of globalization.

There are also differences in terms of the operations of the employment systems in both countries. The Law Concerning Stabilization of Employment of Older Persons was amended in Japan in 1994 to set the mandatory retirement age at 60. At this time, Japan became an aged society since 14% of the population was over 65. South Korea is now faced with a decision before it becomes an aged society: it must decide whether to implement a Japanese-style system (retirement age system) or an American-style system (elimination of retirement age). In addition, while Japan and South Korea have previously implemented similar employment initiatives[3] there have been different policy outcomes because of their differences in management systems[4] and social security systems[5].

3. Data and methodology

3.1. Data

The dataset for this study is compiled from two surveys administered by each country: Japan's Survey on Employment Conditions of Older Persons and South Korea's National Survey of Living Conditions among the Elderly. The questions posed in these surveys differ because the research agencies in Japan and South Korea are different, but both surveys contain information on the employment condi-

2 The Koreans respect older people, especially the elderly, based on the teachings of Confucianism; thus, sons provide for the elderly without having them work.

3 These are policies to secure income for the elderly and reduce the overall burden for society to provide for the elderly. Implemented through social policies such as short-term or temporary employment, they also create a society in which elderly people feel a purpose in life.

4 In the case of South Korea, it is operated by the government as part of measures to address the aging society; however, in the case of Japan, although organizations for the elderly led by local governments have been transformed into a national project, it remains independent from the government.

5 Refer to the pension comparison between Japan and South Korea presented in the introductory section.

tions among older people, and I selected the most important and comparable data in order to conduct a long-term cross-sectional analysis. These surveys provided the opportunity to analyze the probability of an older individual to be employed in each country, and the management of employment of older people by companies of each country. For the purposes of this study, the category of 'older people' is defined as those individuals who are: (1) between 65 and 69 years old, (2) subject to the retirement age system, and (3) eligible to receive pension benefits in Japan and South Korea.

The Japanese dataset is drawn from the Survey on Employment Conditions of Older Persons (Ministry of Health, Labor and Welfare, undated) for the years 1983, 1988, 1992, 1996, 2000 and 2004. This is a survey of individuals conducted by the MHLW using probit regression analysis to examine the effect of each factor over time. The goal of this survey is to capture data that accurately describe the state of employment and unemployment among older people, their attitudes toward work, and the employment conditions and plans for older workers at various business locations. The data captured in this survey provide useful information for employment policy decisions that will affect older people in the future. The survey is conducted roughly every four years by targeting older individuals between 55 and 69 years old residing in one of the 1,100 survey areas randomly selected from the census enumeration districts. I analyzed samples that answered questions that are comparable between Japan and South Korea and only included respondents between 65 and 69 years old. The latest 2008 data are not included in this study because of the time constraints involved in obtaining the data from the governmental agencies in both countries. The descriptive statistics for the data used in this study are shown in Table 1 below.

The South Korean data set is drawn from the National Survey of Living Conditions and Welfare Needs of Older Persons (Korea Institute for Health and Social Affairs, undated) for the years 1994, 1998, and 2004; this survey was conducted by the South Korean government, specifically the Ministry of Health and Welfare of South Korea and its affiliated research institute – the Korea Institute of Health and Social Affairs. The survey was conducted by selecting 180 sample survey areas from the comprehensive residential population survey districts and targeting individuals over the age of 65. The survey is conducted between June 28 and September 10 (for 75 days) every four years. The descriptive statistics of the data used in this study are presented in Table 2.

Table 1: Summary statistics (age 65-69: Japan)

	Age 65–69	
	Average	**Standard Deviation**
Gender (Male = 1)	0.655	(0.475)
Age	66.892	(1.398)
Health condition (Poor = 1)	0.369	(0.483)
Whether experienced the retirement (Yes = 1)	0.613	(0.487)
Non-work/pension income	0.874	(7.831)
Pension income	16.202	(8.898)
Number of household members	1.962	(1.645)
Whether the occupation before/after retirement is the same (Yes = 1)	0.629	(0.483)
Size of the last employer before retirement		
Less than 30 employees	0.299	(0.458)
30–299 employees	0.316	(0.465)
300 employees or more	0.385	(0.487)
Dummy fiscal year		
1988	0.066	(0.249)
1992	0.250	(0.433)
1996	0.229	(0.420)
2000	0.199	(0.399)
2004	0.245	(0.430)
Sample Size	12,611	

Note: # p < 0.1, * p < 0.05, ** p < 0.01, figures in ( ) are standard errors

Source: The author

Table 2: Summary statistics (age 65-69: South Korea)

	Age 65–69	
	Average	**Standard Deviation**
Gender (Male = 1)	0.426	(0.495)
Age	66.922	(1.412)
Education level (at least completed elementary school = 1)	0.612	(0.487)
Health condition (Poor = 1)	0.459	(0.498)
Main source of income		
Support from relatives	0.695	(0.461)
Pension or retirement benefit	0.144	(0.351)
Other benefits	0.384	(0.486)
1994	0.222	(0.416)
1998	0.321	(0.467)
2004	0.457	(0.498)
Sample Size	2,563	

Note: # p < 0.1, * p < 0.05, ** p < 0.01, figures in ( ) are standard errors

Source: The author

3.2. Methodology

The descriptive statistics show that the employment rate declined each year in Japan. In contrast, the employment rate increased in South Korea. This study analyzes the data above to determine how and why the effects of the employment of older people differ in Japan and South Korea. In order to do this, I analyzed the probability of being employed as a variable that can proximate the effect of the employment of older people. To determine the causal factors influencing the probability of being employed, the following variables were used for both Japan and South Korea: employment environment, formal system, family culture (informal system), and other variables that represent individual characteristics.

The employment environment includes employment practices and macro economy in both countries. Retirement age system and pension are considered formal systems and the number of household members and monetary assistance from relatives are variables that represent the informal system of family culture. In addition, individual characteristics can be analyzed using gender, age, health condition, and educational level. However, because the wage rate variable used in this study is only applicable to employed individuals, it is likely to cause sampling bias for women with a lower employment rate than men. Therefore, I have used Heckman's (1979) two stage least squares (2SLS) estimation model. The Heckman's two-step estimation is used because while there are many employed men of productive age, the employment rates are lower among older people, especially among women, compared to men of productive age. The estimation is used in order to resolve sample selection bias that could affect the employment rate due to retirement and pension income. Detailed equation for the reduced form is shown below as follows:

$$y_{1i}^{*} = \beta x_i + \varepsilon_{1i} \quad (1)$$

$$y_{2i}^{*} = \gamma w_i + \varepsilon_{2i} \quad (2), \text{ where,}$$

$$y_{1i} = 1 \text{ if } y_{1i}^{*} > 0,$$

$$= 0 \text{ if } y_{1i}^{*} \leq 0,$$

$$y_{2i} = y_{2i}^{*} \text{ if } y_{1i}^{*} > 0,$$

$$= \text{missing if } y_{1i}^{*} \leq 0.$$

Where x_i : Gender, age, health condition, retirement experience, non-work/pension income, pension income, number of household members, size of the last employer before retirement, job type before retirement, and dummy fiscal year.

The instrumental variables used to identify formulas 1, 2 and 3 were the following: health condition, retirement experience, non-work/pension income, pension income, and number of household members. A variable number of household members was used because although an increased number of family members to be supported would motivate people to work and affect the probability of being employed, it

would not affect wage. The other variables – health condition, retirement experience, non-work/pension income, and pension income – were used in accordance with Parsons (1980). We assume that the error terms ε_{1i} and ε_{2i} take a bivariate standard distribution of $(\varepsilon_{1i}, \varepsilon_{2i}) \sim \mathrm{NID}\big((0,0),\ (1,\sigma^2),\ \rho\sigma\big)$. The analysis is started with the estimation of formula 1, followed by the calculation of the inverse Mills' ratio to be incorporated in formula 2. Detail is shown in formula 3.

$$\begin{aligned} E(y_{2i} | y_{1i}^* > 0) &= E(y_{2i}^* | y_{1i}^* > 0), \quad (3) \\ &= \gamma w_i + f\lambda_i + m_i, \text{ where,} \end{aligned}$$

$$f = \rho\sigma,$$

$$\lambda_i = \frac{\varphi(\beta_1 x_{1i})}{\Phi(\beta_1 x_{1i})}$$

w_i: Japan: gender, age, size of the last employer before the retirement, and dummy fiscal year, and
w_i: South Korea: gender, age, education level, and dummy fiscal year

Here, σ e refers to the standard error of ε_{2i} and ρ refers to the correlation between ε_{1i} and ε_{2i}. λ is inverse Mill's ratio, the variable that determines whether selectivity exists. When this variable is significant, the null hypothesis, 'there is no selectivity in the wage function', can be rejected to interpret that the wage function has selectivity. ϕ is the standard normal probability density function, and Φ is the standard normal cumulative distribution function.

In the next section, I discuss how each factor that influences whether older people are employed leads to different effects in the overall employment of older people in Japan and South Korea.

4. Analysis

Table 3 and Table 4 show the trend in the probability of older people being employed by year for each country. These results show the impact of institutions and family support on the employment of older people. Specifically, Table 3 shows that the probability of an older person being employed after retirement in Japan declined after the country amended the Law Concerning Stabilization of Employment of Older Persons. In other words, the retirement age system functions more to terminate employment rather than to protect the employment of older people[6].

6 The modern retirement age system is highlighted for the termination function based on the perspective of being able to terminate the employment of a person when he/she reaches the retirement age. However, in the case of South Korea where the retirement age system is not well established, it also provides employment protection. For example, labor unions are proposing legislation and extension of the retirement age as a means to maintain employment until retirement.

Table 3: Estimated probability of older persons being employed (age 65–69: Japan) via Structural and Marginal Analysis

	1988 / 1992 / 1996 / 2000 / 2004	
	Probability of Employment	**Marginal Effects**
Estimated wage rate	0.254**	0.096
Gender (Male = 1)	0.477**	0.175
Age	-0.064**	-0.024
Health condition (Poor = 1)	-0.840**	-0.300
Whether experienced the retirement (Yes = 1)	-0.014	-0.005
Non-work/pension income	0.001	0.000
Pension income	-0.031**	-0.012
Number of household members	0.035**	0.013
Size of the last employer before retirement (Ref. = Less than 30 employees)		
30–299 employees	-0.143**	-0.054
300 employees or more	-0.230**	-0.087
Dummy fiscal year (Ref. = 1988)		
1992	-0.055	-0.021
1996	-0.084	-0.032
2000	-0.287**	-0.105
2004	-0.262**	-0.097
Constant	4.339**	
Log-likelihood	-7563.643	
Observation	12,611	
Note: ** <0.01, * <0.05, # <0.1		

Note: # p < 0.1, * p < 0.05, ** p < 0.01, figures in ( ) are standard errors

Source: The author

For people in their late sixties in Japan, I analyzed data from the years 1988, 1992, 1996, 2000, and 2004. To estimate the probability of being employed, the following policy-related variables were set: whether they ever experienced the retirement in their lifetime (mandatory retirement or retirement prior to retirement age) and pension income. In addition, size of the last employer before the retirement was set as a company variable, and non-work/pension income and socio-demographic variables such as gender, age, and health condition were set as control variables. The results of this analysis revealed that the retirement experience has a negative impact on being employed again for people in their late sixties. Having income from a pension or non-pension source also has a negative impact on the employment of older people. The probability also has a relationship with the size of an individual's last employer before retirement. Specifically, older people who had worked for a medium-sized business tend to have a lower employment rate than those who worked for a smaller business. Females who were higher in age and/or reported poorer health had a lower probability of being employed. Moreover, an analysis was conducted by setting the

data from the initial year used in this study as the reference, and this analysis demonstrated that the probability of being employed was trending down year by year.

Table 3 also shows that the probability of being employed increases as the number of members in the household increases. This finding may be related to the 'parasite singles'[7] phenomenon in recent years where children continue to depend on their parents while eschewing employment.

Table 4: Estimated probability of older persons being employed (age 65-69: South Korea) via Structural and Marginal Analysis

	1994 / 1998 / 2004	
	Probability of Employment	**Marginal Effects**
Estimated wage rate	5.965	1.508
Gender (Male = 1)	0.383**	0.124
Age	-0.024	-0.008
Education level (at least completed elementary school = 1)	-0.204*	-0.065
Health condition (Poor = 1)	-0.549**	-0.170
Number of sons/daughters in household	-0.080*	-0.025
Main source of income		
Support from relatives	-0.771**	-0.263
Pension or retirement benefit	-0.429**	-0.121
Gains from real estate or financial savings	-0.577**	-0.152
Other benefits	-0.091	-0.028
Dummy fiscal year (Ref. = 1994)		
1998	0.181#	0.059
2004	0.162**	0.145
Constant	1.644	
Log-likelihood	-903.94	
Observation	1,764	
Note: ** <0.01, * <0.05, # <0.1		

Note: # p < 0.1, * p < 0.05, ** p < 0.01, figures in ( ) are standard errors

Source: The author

Table 4 shows that the probability of being employed is increasing in South Korea. Factors such as education level[8] and the number of sons/daughters in the household were considered socio-demographical variables. Similar results were found for the

7 'Parasite single' or 'parasitic single' refers to an unmarried person who lives with his/her parents even after graduating from school, and continues to depend on his/her parents for basic living requirements. It has become a social problem in Japan.

8 Given the colonial period, war, and poverty after the war, elderly people in Korea did not have sufficient opportunities for education. For example, according to the 2004 data of the National Survey of Living Conditions and Welfare Needs of Older Persons, 75.1% did not complete any schooling beyond elementary school, 19.4% completed junior high or high school, and 5.6% completed junior college or more. Thus, using 'graduated elementary school' as the criteria was meaningful.

situation in Japan. However, the education level variable was available only in the South Korean survey, and indicated that the probability of being employed became lower among those with a higher educational level. This finding can be explained because in the case of South Korea, individuals with a higher education level tend to avoid odd jobs because they are concerned about their dignity. The probability for being employed also became lower as the number of sons/daughters in the household increased. This finding indicated that children are currently providing for and supporting their parents in South Korea. In fact, according to the 2004 Korean survey data, 19.3% of elderly parents live with their eldest son, 32.6% live with a son or daughter other than the eldest son, 26.5% live by themselves as a couple, 19.0% live alone, and 2.7% live in other types of settings. Analyzing the probability of being employed by referencing the initial year revealed that the probability in this case has been increasing over the years.

In fact, the probability of being unemployed is trending upwards even though South Korea experienced the Asian financial crisis in 1998. This trend reflects the situation in which the need to become financially independent increased due to the deteriorated economic conditions for younger people and the movement toward nuclear families after the crisis, leading older people to find work outside the home. Moreover, the employment projects initiated in South Korea after 2000 also affect this situation.

Japan's Survey on Employment Conditions of Older Persons and South Korea's National Survey of Living Conditions among the Elderly both survey individuals between 65 and 69 years old; this analysis revealed that the overall trend is that while the probability for older people to be employed is declining in Japan, it is increasing in South Korea. A closer analysis of the change for this probability reveals the impact of the retirement age system and pension as well as the social security function of family on the employment of older people in these countries.

Formal factors that influence the probability for employment for older people in Japan include the retirement age system and pension system. The results of the analysis indicate that the experience of retirement negatively affects the probability of being employed because it has a large negative impact on the re-employment of people 65 years or older. These results also indicate that there is a large gap between males and females. Japan should consider establishing policies to make use of female human resources in order to resolve the employment shortages in aging societies. As for small and medium businesses that will lose expertise as the wave of baby boomers retire, some measures are necessary to ensure that the expertise and technical skills are passed on to the new workforce.

On the other hand, the probability of being employed in South Korea declines as the number of household members increases, indicating that relatives often provide for older people, especially their children. Furthermore, the probability of being employed decreases as pension income increases, indicating that older people in South Korea are working in order to be financially independent.

5. Discussion

5.1. Main findings

The results of the comparison of the employment rate between older people in Japan and South Korea indicated that each of these countries has gone through a different path based on their unique social culture and informal system, although they share the characteristic of rapid population aging and similar system environment. It has been pointed out that the reason that East Asia, including Japan, has a weaker social security system compared to the developed countries in Europe was the security provided by family members, as children traditionally look after their retired parents. However, whether such logic still applies in the case of Japan's super-aged society needs to be verified. To do so, I have analyzed the probability of employment among older people by number of family members in the household in order to determine if the intention to work and the probability of employment declined on receiving children's support as the number of household members increased. The results showed a statistically significant positive impact on older people being employed as the number of male household members increased, suggesting that the older parents are working to support unemployed family members, rather than receiving children's support. In addition, comparing to South Korea, the probability of employment among women was relatively low, indicating that employment policies that ensure gender equality and joint participation in the job market are required. This tendency is especially prominent in smaller workplaces where wages are relatively low. This phenomena can also be observed in the analysis of employment probability among blue-collar workers, indicating that a new human resource management system is required in addition to the existing retirement system.

In the case of South Korea, the probability of employment among women is relatively high because they are more likely to be employed as non-regular workers or working in service industries. Having said that, policies such as the ones that provide opportunities to work as regular employees should be established in the future to improve their wages and job security. Unlike Japan, the probability for employment declined in South Korea as the number of household member increased, indicating that family members, especially children, are more likely to be supporting parents in South Korea compared to Japan. Furthermore, as expected, the probability of employment declined as other income such as pension increased; in particular, it has been shown that pension and support from relatives have a negative impact on being employed. These results confirmed that older people in South Korea are often employed for the reason of economic independence. Thus, it is clear that, in the case of employment initiatives, more consideration should be given to economic aspects while ensuring the expansion of social security, rather than simply pushing low-income individuals to work because of economic reasons regardless of their circumstances. This is because the older people in South Korea will not perform low-wage chores to protect their social dignity, especially when their education level is higher.

5.2. Implications for Japan

From the perspective of the policy environment, Japan's production regime is characterized by a coordinated market economy system, globalization and a highly aged environment; in addition, the retirement wave among the baby boomer generation has been ongoing in recent years. Several policy issues that deal with the aging problem in Japan exist. Institutional conditions include formal systems, such as the retirement age system and pension, as well as informal systems, such as employment practices. Under these system conditions, both companies and older people are subject to the policies and view the problem of employment of older people as a policy issue. Both corporations and older people need to increase employment. Therefore, companies and older people must incur the information costs required for hiring and job hunting. Employing older people provides an opportunity for companies to use the already acquired skills of older population. In this way, companies incur costs related to the assessment of the productivity of older people while workers incur costs regarding wage and work conditions. The retirement age should be extended and re-employment practices should be examined under these policy environment and system conditions. The choices made by the actors involved will influence policies in the future.

5.3. Implications for South Korea

From the perspective of the policy environment, the South Korean society is at the stage of globalization and aging. The aging process in South Korea is rapid and policies should be developed to address this aging problem. Institutional conditions include formal systems, such as retirement age system and pension, as well as informal systems, such as employment practices and the cultural concept of 'filial duty' rooted in the philosophy of Confucianism. Under these conditions, both companies and older people view the problem of the employment of older people as a policy issue. The poverty rate among older people in South Korea is high because of the insufficient pension system. In addition, after the Asian financial crisis, companies began viewing older people as workers who have low productivity with a high cost. Thus, companies have taken advantage of the fact that the retirement age system is voluntary[9] by forcing older people to take early retirement during periods of corporate restructuring. From the perspective of older people, there is an opportunity factor of financial gain, which highly motivates them to be employed; however, there is also a threat factor associated with the recent influx of foreign workers. While companies incur costs to assess the productivity of older people, workers incur costs to assess

9 Act on Age Discrimination Prohibition in Employment and Aged Employment Promotion in South Korea prescribes employers the obligation to strive to set the retirement age at 60 or higher for their employees. The employers who set their retirement age significantly lower may be arbitrarily required to submit a plan to extend the retirement age or be advised to make changes.

wage and work conditions. The retirement age should be extended and re-employment practices should be examined in these policy and institutional environments. The choices made by the actors will influence policies in the future.

6. Conclusions

Since Japan in 1988 and Korea in 2004 depict the aging society with similar level and patterns, I have analyzed the data of senior citizens from both countries at that time. The result demonstrates that gender and age were highly statistically significant in Korea while there is no statistical significance in Japan.

The fact that companies in South Korea feel uncomfortable hiring older people for lower positions due to the strong respect for the elderly leads to negative outcomes in the employment of older people. Previous studies have shown that pension has a negative effect on employment of older workers. When a social security policy is guaranteed and consistently maintained people are more likely to work for non-financial reasons. Therefore, respect for the elderly and pension do not always have negative impacts on the cost reduction of companies and the employment of older people. If the employment opportunities are designed with flexibility, such as accommodating the diversification of work arrangements and meeting a variety of work needs, positive effects can be obtained. However, when the employment systems and practices are neglected, workers often try to earn additional monetary compensation because there is insecurity even if the wage remains the same. This insecurity thus increases costs for companies. We need to prioritize amending, supplementing, and adapting the current system before introducing a new human resource management system.

As for institutional reform, Japan needs to abolish the retirement age system, pay salaries based on job description and remove obstacles to employing older people. On the other hand, South Korea needs to formalize the retirement age system and institute flexible wages in order to alleviate worry among workers. On the other hand a long-term plan would also require more fundamental and concrete measures.

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