



Chapter 4  
Work and Retirement

## 4 Work and Retirement

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## 4.1 Labor Force Participation of the Elderly in Japan: Unique Position

### 4.1.1 Introduction

The speed of aging in Japan is unprecedented in industrialized countries. Combining the longevity of the population with a historically lower birth rate, there have been serious concerns and policy debates on the decline of the labor force in the future and its negative effect on long-term economic growth. In a most recent quasi-official estimate of future demographics, the labor force aged 20 to 59 will decline from 55.85 million in 2006 to 48.16 million in 2030 (13.8% decline). See National Institute of Population and Social Security Research (NIPSSR) (2008).

The most feasible solution to compensate for the decline in labor force participation is to encourage more workers to be in the labor force and to remain there longer. It is often asserted that the most effective policy is to stimulate female and elderly labor supply. Allowing more immigrants to work in Japan should be considered as well.

Japanese workers are already in the labor force longer than those in most of the other OECD countries. OECD (2004) shows that the effective retirement age, which is defined as the average age at which workers aged 40 or above retire, is 70 and 66 years old for Japanese males and females, respectively, for the 1997-2002 period. Those figures are the second highest among the OECD countries. It is vital we keep the current high level of labor force participation among the elderly group in the future. Thus it is important for Japan to understand why Japanese elderly tend to stay in the workforce longer than their counterparts in OECD countries. The answer may also offer hints to other countries suffering from declining labor force as to how the labor force participation could be raised.

We believe that examining retirement behavior by the Japanese elderly offers opportunities to draw useful lessons for other industrialized countries that have witnessed increase in longevity and at the same time prevalence in early retirement. Research on retirement behavior in Japan has international policy implications.

While economic and social activities including retirement decisions of the elderly are debated, especially in the context of pension reform in Japan, they are not based on the quantitative studies assessing what accounts for the late retirement among the elderly in Japan. Relative health, low savings, and low pension income could all contribute to later retirement. Some of the larger firms provide job opportunities at the related companies after retirement from the company. This institution itself may contribute to later retirement. If a worker's elderly parents need to be cared for, he or she may decide to switch jobs to increase flexibility of time and in some cases may induce early retirement. Compared with other married couples in other OECD countries, Japanese couples may plan to do things together less after retirement, which could contribute to later retirement. Also, work may be regarded not only as the means to earn a living but in Japan it may be regarded also more as a way to fulfil the objective of life. Quantitative assessment of all these and other factors would require comprehensive data which cover many aspects of the elderly's life and views. JSTAR is exactly such a data set.

In other countries a volume of economic research has explored the determinants of retirement by emphasizing the role of economic incentives embedded in social se-

curity and pension systems (See Gruber and Wise 1999, 2004). In Japan, Abe (1998), Iwamoto (2000), Ogawa (1998), Oishi and Oshio (2000), Oshio (1997), Oshio and Oishi (2004), Oshio, Shimizutani, Oishi (2008), Seike (1991), Takayama et al. (1990), Yashiro and Nikami (1996), and Yashiro and Oshio (1999) study the relationship between the generosity of the pension plan and the labor supply of the elderly and show that an elderly person with larger social security wealth is more likely to exit the labor force in Japan. But the effects attributed to pension may be underestimated partly due to larger firms' institutional arrangement, for example. As discussed above, there are a multitude of other factors than the pension generosity we need to evaluate.

Clearly, in order to analyze these issues, we need data on labor status as well as their economic, social, health, family conditions, and preferences for leisure and time discounting. While there are some data sets to include some related variables in Japan, all previous works suffer from lack of a comprehensive data set on variables related to the retirement decision in Japan. In addition, in order to examine the pathways to retirement, it is essential to make use of the panel data. A longitudinal sample will allow us to examine dynamic change in labor status, i.e. transition from work to retirement, and to evaluate policy effectiveness. JSTAR thus contributes to uncover what factors really matter so that it can provide new scientific evidence on retirement behavior and draw useful lessons for other countries.

#### 4.1.2 Work Status

First of all, we focus on the self-reported current work status of the respondents, which is elicited by presenting mutually exclusive categories. First, JSTAR asked a respondent whether he/she currently works at all. If a respondent does not work at all, then, he/she is asked whether he/she is a job seeker and, if this is the case, the person is categorized "unemployed." If a respondent is neither a worker nor a job seeker, then, he/she is asked about the current status: retired, homemaking, sick or disabled, and other. As a result, we distinguish six possible cases: "worker," "retired," "unemployed," "homemaker," "sick or disabled," and "other." In this subsection, we focus on workers and retired individuals and group all other activities into "all other."

Figure 4-1-1 illustrates some stylized facts. First, the share of workers declines along with age. The share exceeds 50% for people aged 55-57 and it decreases to a quarter for those aged 73-75. While this declining process is considered quite natural, two interesting findings are obtained. One is that the declining pace of the share along with age is not gradual. The decline is large between people aged 61-63 and aged 64-66 and between those aged 67-69 and those aged 70-72. Although we need further investigation, some thresholds like age 65 or 70 might affect the retirement behavior. The other is that a quarter of those aged 73-75 is still categorized in "work." This is quite different from those in European countries. The SHARE book shows that the "work" share is close to zero for persons aged 67 and over.

The second stylized fact is that the share of "retirement" is close to zero for people aged 55-57 and those aged 58-60. The figure is on a gradual upward trend and reaches close to 30% in persons aged 73-75. We should note that this share is much lower than that in European countries. The SHARE book reports that the share of "retired" is close to 80% for persons aged 65 and over.



Figure 4-1-1 Self-reported economic activity by age

Third, the share of “all other” occupies less than 20% for persons aged 55-57 and the figure increases to 50% for those aged 73-75. This shows that, when examining retirement behavior, we should not rely on the dichotomy between “work” and “retirement” and take account of a variety of routes or pathways in transition from work to retirement. Moreover, we should note that the share of “all other” is much more dominant than European countries with about 20% of all the respondents in the similar age range. This shows that it is more important to consider the intermediate retirement process in Japan.

These results show a quite unique pattern of the elderly labor force participation in Japan. We next ask what matters for the retirement behavior of Japanese elderly. The possible candidates for those differences include institutional differences, social norms, and other factors as discussed earlier. In what follows, we focus on three relevant dimensions of variability in economic activities, which is common to the SHARE book: age, gender, and municipality, and then correlate with health conditions.

Figure 4-1-2 reports the share of workers by municipality-age-gender. Even within Japan, a municipality-level analysis uncovers the heterogeneity between region and gender. For male workers, we find a different pattern across municipalities. While a large decline occurs in 65+ across all five municipalities, Sendai experiences a steady decline compared to Kanazawa, Takikawa, Shirakawa, and Adachi. In Kanazawa, Takikawa, and Shirakawa there is not much decline until 60-64. Adachi is an outlier:

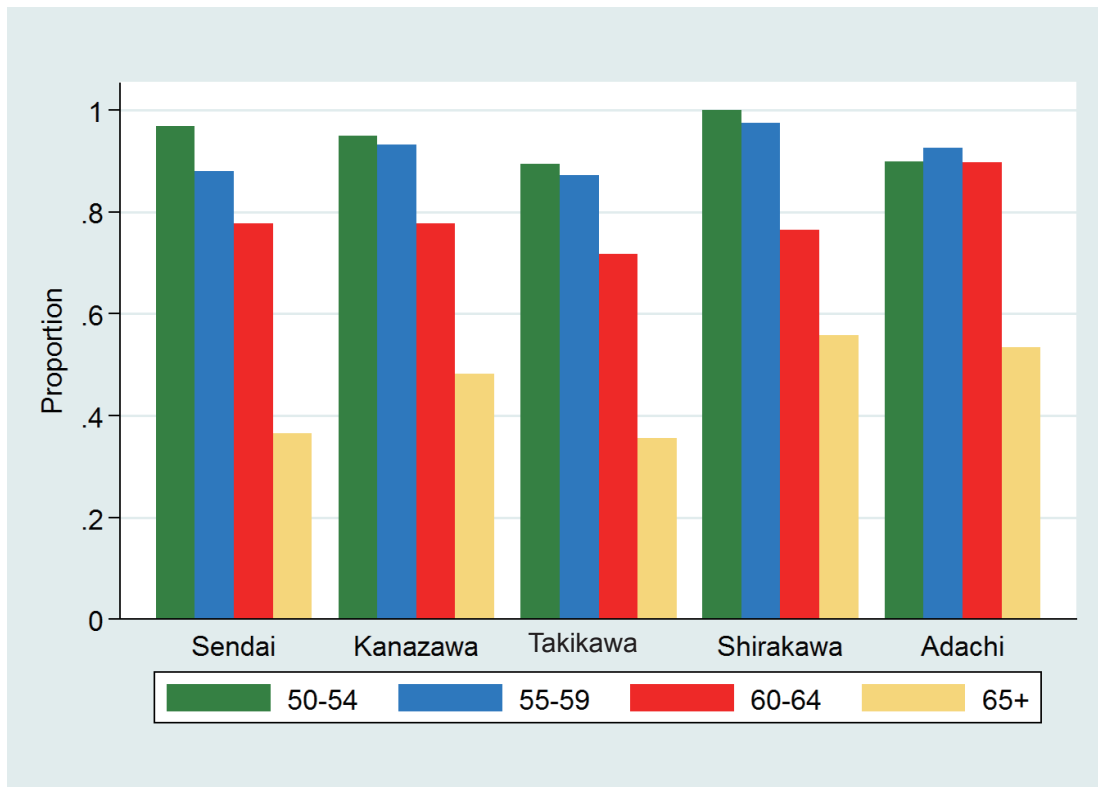


Figure 4-1-2-1 Employment status: males

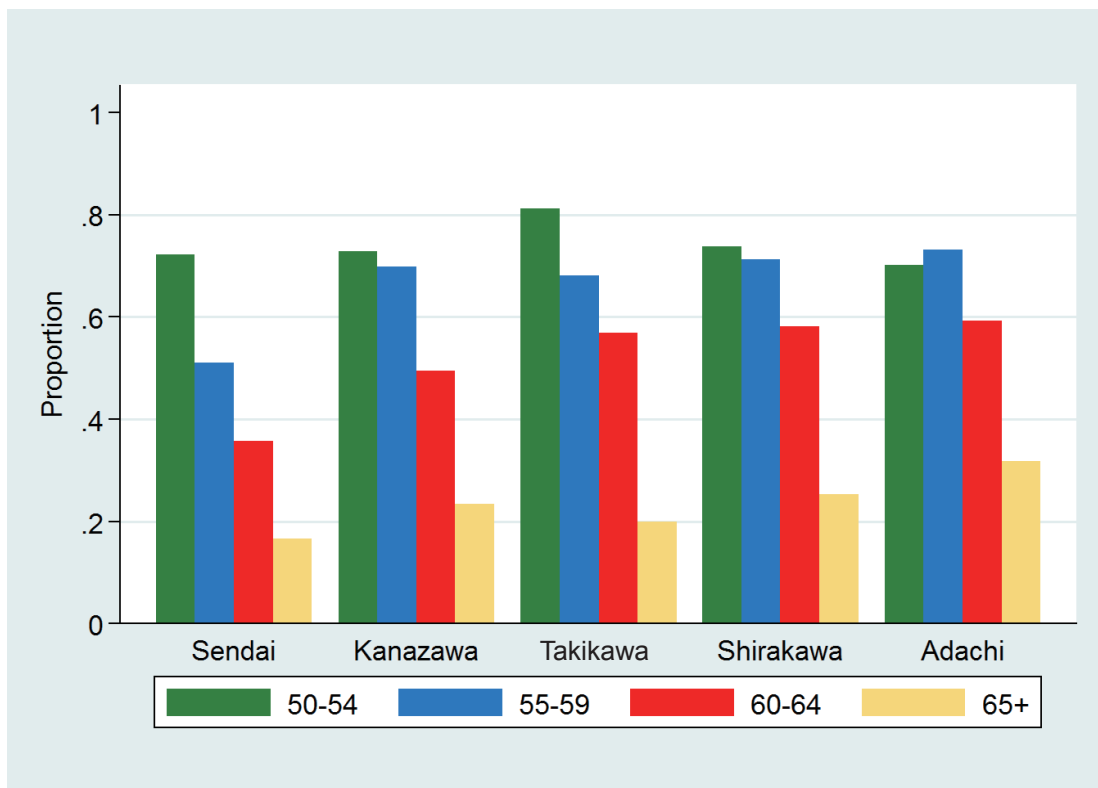


Figure 4-1-2-2 Employment status: females

the “work” share is almost unchanged between persons aged 50-54 and those aged 60-64. The share declines sharply for those aged 65 and above but the level is higher than that in other large cities. An overall decline in Sendai is the largest from more than 95% for persons aged 50-54 to less than 40% for those aged 65+. Takikawa has a similar pattern but the drop is attenuated as the workers' proportion is lower for the 50-54 category at about less than 90%.

For males, the SHARE book finds that, with the exception of Sweden, most countries experience a sharp decline of the workers' proportion at age 60-64. This is similar to the findings in Japan but the workers' proportion for the 60-64 category is 20%-60% higher for Japan. Another difference is that, as discussed above, the proportion of workers above 65 is almost zero for the SHARE countries, whereas more than 35%-55% work in Japan.

For women the “work” share is lower than for men, mostly because of the relatively large fraction of women who report their status as “homemaker.” This is the same as the findings in the SHARE book. Sendai and Takikawa show a more gradual decline of the workers' proportion compared to those in Kanazawa, Shirakawa, and Adachi where the sharper decline for the 60-64 category is observed compared to the decline observed for the 55-59 category. For women, Adachi is not much different from Kanazawa and Shirakawa, although we note the workers' share is the highest in Adachi for the 65+ category.

We find that the proportion of Japanese women working is comparable to the northern European countries (Sweden, Denmark, and Germany) which have a higher fraction of working women among the SHARE countries. Analogously to men, 60-64 and 65+ categories have a higher fraction of workers in Japan than other SHARE countries with the exception of Sweden where the 60-64 category has a comparable workers fraction to that in Takikawa, Shirakawa, and Adachi. Even Sweden has almost zero percentage women workers in the 65+ category.

The SHARE book suggests that difference across countries in self-reported work status is largely attributed to difference in the pension policies and thus the pension policies are considered as an important determinant of labor force participation decision of the elderly. In contrast, there is little variation in the pension program in Japan, which suggests other factors, such as availability of job opportunities and difference in industries, are responsible for the difference across municipalities.

Since these findings are based on self-reported work status, they need to be investigated further through hours worked, for example, which we now address.

### 4.1.3 Work Status and Working Hours

We compare the “work” share of all people and that of people who work 15 hours or more per week. This analysis corresponds to the distinction between full-time and part-time workers in the SHARE book. Figure 4-3 shows that the share of persons who work 15 hours or more per week is higher for men than women, which parallels the share of self-reporting “work.” But the relative share of those who work 15 hours or more per week to persons who identified themselves as a worker is about 90%, which is common to gender and municipality. This observation suggests that the higher “work” share compared to European countries is not accounted for by the different perception of “work” between Japan and those countries. However, partial or gradual retirement could be an important feature of the labor market in some countries including Japan.

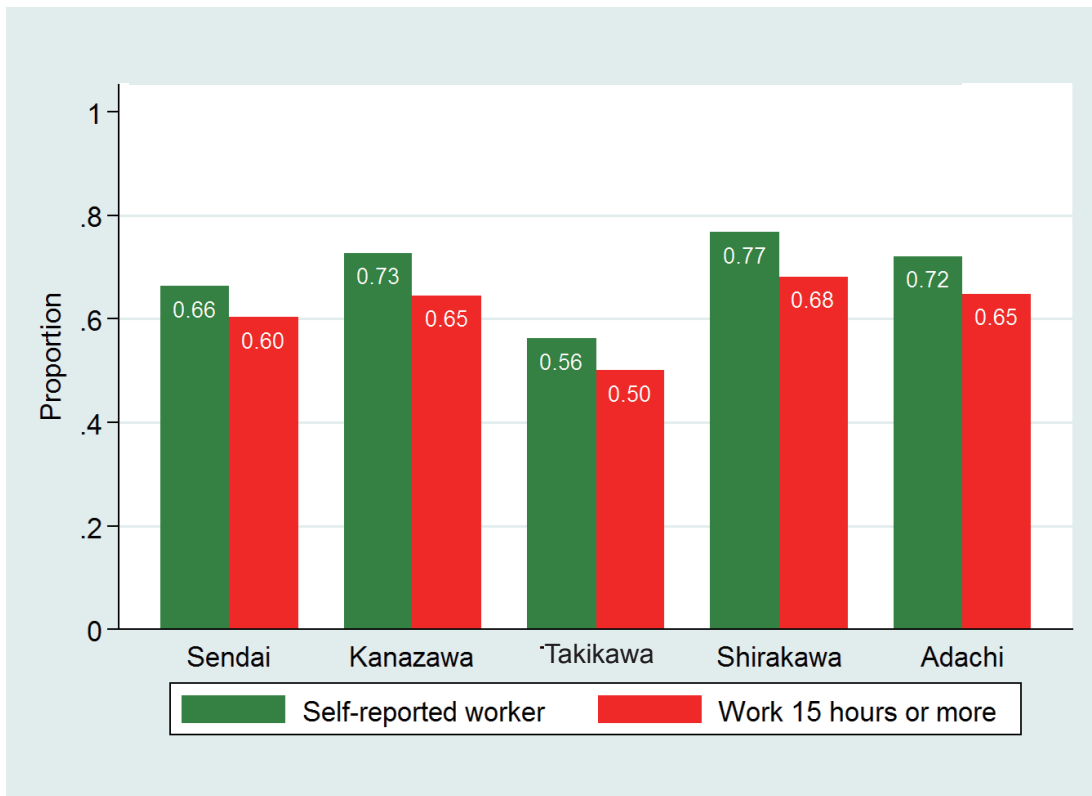


Figure 4-1-3-1 Employment status: males

### 4.1.4 Work Status and Health Condition

Next, we turn to the relationship between self-reported employment status and individual health conditions. Figure 4-1-4 shows the distribution of actual work and retirement by confining the sample to the respondents in “good health.” Since self-reported employment status is endogenously correlated with self-reported health status, “good health” is defined on the basis of two indicators: (i) self-reported absence of limitations in daily activities; (ii) self-reported “functioning,” i.e., counting zero limitations out of 14 daily activities (ADL and IADL), which are identical to the SHARE book analysis. In order to compare the results with the SHARE book, we focus on three groups of individuals defined in the same way: those who are self-reported working and are ac-



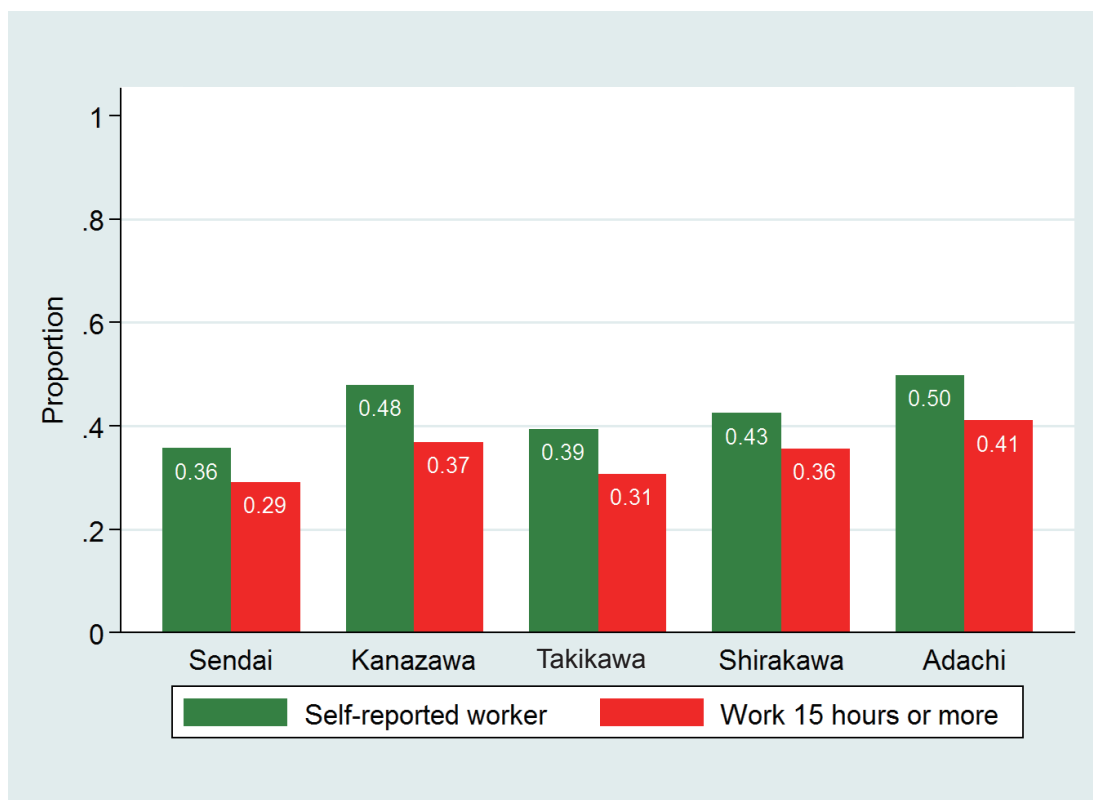


Figure 4-1-3-2 Employment status: females

tually currently active, those who are self-reported retired and have no hours of work (retired), and those who are self-reported retired but do some hours of work (retired but work).

The results based on the first definition show a large variation in employment status across municipalities even when we confine the analysis to “healthy” persons only. The share of “work” is relatively lower in Sendai and higher in Kanazawa, Shirakawa, and Adachi, which is analogous to the results in Figure 4-1-2.

Shirakawa has a higher share probably due to the agricultural sector. It is interesting to see the high “work” share in Kanazawa compared to that in Sendai. We also see the same pattern in the results based on the second definition. We note that the share of “retired” among healthy persons is much lower than those in European countries, especially compared to a strikingly high frequency of people with no limitations who report themselves fully retired in Austria, France, and Italy.

This subsection provided a preview of the results based on the baseline data which is cross sectional. One of the important lessons in the literature is that the determinants of retirement behavior are complex and the nature of retirement process is dynamic. The longitudinal data set after the second wave permit us to use the panel data to investigate the retirement decision among Japanese elderly. For example we can examine whether one’s work status changes as an individual faces health shocks.

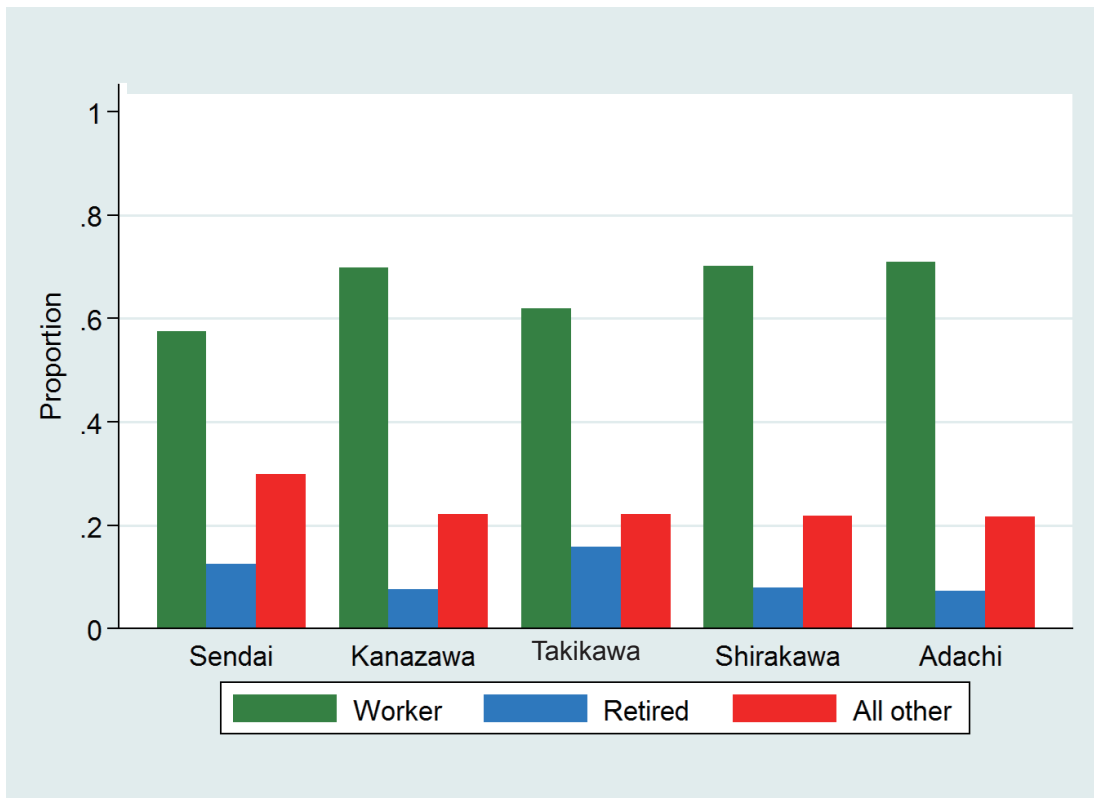


Figure 4-1-4-1 Economic activity of healthy respondents

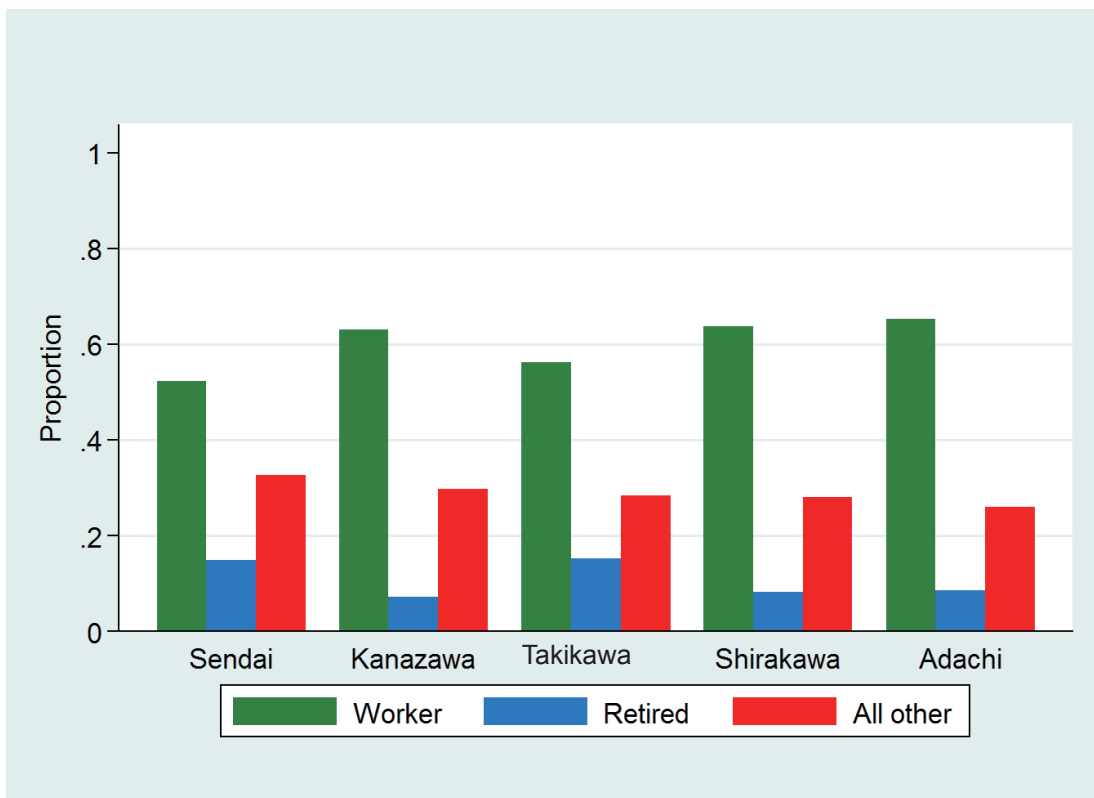


Figure 4-1-4-2 Economic activity of respondents whose ADL and IADL are zero

#### **4.1.5 Conclusions**

- The Japanese elderly hold a unique position in retirement behavior. They retire later than those in most OECD countries and keep high labor force participation rate.
- We see a large variation in self-reported employment status across municipalities under the same pension program. Other factors might be more responsible for the different retirement behavior.
- Even among “healthy” persons, we see a large variation in the labor force participation.
- Further detailed analysis using longitudinal data is necessary to explore the determinants on the late retirement in Japan.

## 4.2 Public and Private Pension Claims

### 4.2.1 Introduction

Pension benefit is a primary source of spending after retirement and a reform of pension programs is likely to alter retirement behavior. At the same time, the rapid speed of population aging put substantial pressures on pay-as-you-go social security programs in Japan and raised serious concern about financial sustainability of the current program. By nature, the pay-as-you-go system is exposed to drastic demographic change. Recent discussions of pension reform in Japan focus on the financial aspect: an increase in contributions and a decrease in benefits. The 2004 reform, the latest fundamental reform, set an upper ceiling on the payroll contribution rate of 18.3%, a five-percentage point increase from the current level, and holds down total pension benefits within total contributions and government subsidies. In addition, the reform introduced macroeconomic indexation to automatically adjust benefits in response to demographic and macroeconomic changes. See Oshio and Shimizutani (2005).

While financing the social security program is surely critical, we should emphasize that any discussion only on financing program that ignores the heterogeneity of the elderly is insufficient and does not produce any effective policy direction. What is more important is to examine how the public pension program could contribute to improving pensioners' living standards, if possible, without lowering prime age workers' welfare. At the same time, the contribution of benefits in cash provided by the pension program is closely related with that of benefits in kind such as medical and long-term care services provided both formally and informally, and other monetary benefits in cash like private pensions which are established on a full-funded basis.

Instead of the traditional approach emphasizing how to finance the social security program, we take an individual-level and integrated approach ("comprehensive view" in the term of the SHARE book) to examine the role of pensions so that we contribute to improving the effectiveness of pension policy. JSTAR enables us to take this new approach since it contains several variables that are necessary to evaluate the effectiveness of social security programs. As in SHARE, retired respondents are asked about the eligible pension program and the amount of benefits while active persons are asked about entitlement to future pensions.

Unlike the SHARE book analysis which encompasses different countries with different pension programs, the respondents in JSTAR are under a homogenous pension program. However, in Japan, pension schemes are different for pensioners with different occupations. Thus, we are able to examine the variation across occupations to examine the role of pension program for both retired and active persons. Clearly this will require some methods to account for occupational selection issues, however.

### 4.2.2 Japanese Public Pension System

We provide a brief overview of the Japanese pension programs and discuss characteristics emphasizing the comparison with pension programs in European countries. The description of the Japanese pension program heavily utilizes Oshio and Shimizutani (2005).

The Japanese public pension system consists of three programs, depending mainly on occupation. The first is the National Pension Insurance (NPI) (Kokumin Nenkin) whose pensioners consist of self-employed workers, farmers, and other non-employed workers. The second is the Employees Pension Insurance (EPI) (Kosei Nenkin) for employed workers in the private sector. The EPI forms the main body of the Japanese public pension programs. The third is the Mutual Aid Insurance (MAI) (Kyosai Nenkin) for employed workers in the public sector and private schools. The scheme of the MAI program is quite similar to that of the EPI program. The large difference between the NPI program and the other two is that the NPI has a flat benefit only while the EPI and MAI have both flat and earnings-related components of benefits. Since the 1986 Pension Reform, all beneficiaries in these programs have received a common flat-rate benefit, which is now called the Basic Pension benefit, and the NPI benefits and the flat components of EPI and MAI are identical.

For the NPI, the eligibility age for the full benefit is 65. More than one-fourth of the insured, however, start to receive actuarially reduced benefits between the ages of 60 and 64 years, because average household income of the NPI pensioners, especially self-employed workers, is relatively low. An actuarial addition to the benefit is also available for those who choose to receive pensions between 65 and 70 years but the number of applicants is small. Under the current program, eligibility to receive any NPI benefits requires a minimum of 25 years of contributions, and eligibility to receive full benefit requires 40 years of contributions. The benefits are price-indexed to reflect changes in the Consumer Price Index in the previous year.

In contrast, the EPI benefits consist of a flat component (Basic Pension benefit) as the first tier and an earnings-related component as the second tier. In principle, the eligibility age for the flat component was 65 and a special legal provision was in effect to allow employees to receive full benefits from age 60. The eligibility age has been extended by one year for every three years (age 62 in 2007). The eligible age will eventually be extended to age 65 in 2013, which is accommodated with that of the mandatory retirement age. The earning-related component of the EPI benefit is calculated by multiplying the career average monthly income (CAMI) by a certain accrual rate, which depends on the birth year. The CAMI is counted over all coverage years of a worker and adjusted by increases in average wage rate. Both flat and earnings-related benefits are CPI-indexed.

The eligibility age for earnings-related benefits is currently 60. Upon reaching age 60, an individual who has not fully retired is entitled to receive reduced benefits with an earnings test (Zaishoku). In addition, non-working dependent wives of EPI beneficiaries are eligible to receive Basic Pension benefits without any contributions. Therefore, an elderly couple whose husband is an EPI beneficiary is entitled to receive earnings-related benefits and two flat components (for both the husband and his wife). The EPI contributions are shared equally by employees and employers, based on monthly earnings. The contribution base was shifted completely from monthly earnings to annual earnings including bonuses in 2003.

In sum, the NPI pensioners are eligible for only the first pillar and the EPI and MAI pensioners are eligible for both the first and the second pillar. The first pillar is mandatory whether employed or self-employed while the second pillar is occupation-related. The third pillar comprises purely private pensions (insurance company or post office).

### 4.2.3 Eligible Pension Programs across Municipalities

Figure 4-2-1 reports the eligibility of a variety of pension programs across municipalities. As stated, the first pillar is mandatory and the second pillar pension program in Japan depends mainly on occupation in the prime earnings age and the difference in industrial structure reflects in the share of eligibility for each program. In Sendai, Kanazawa, and Takikawa, the share of EPI (including MAI) is dominant and accounts for about three quarters while the remaining is largely occupied by NPI. In contrast, in Shirakawa and Adachi, the share of NPI is larger since Shirakawa has a large agricultural sector and Adachi has a large number of self-employed.

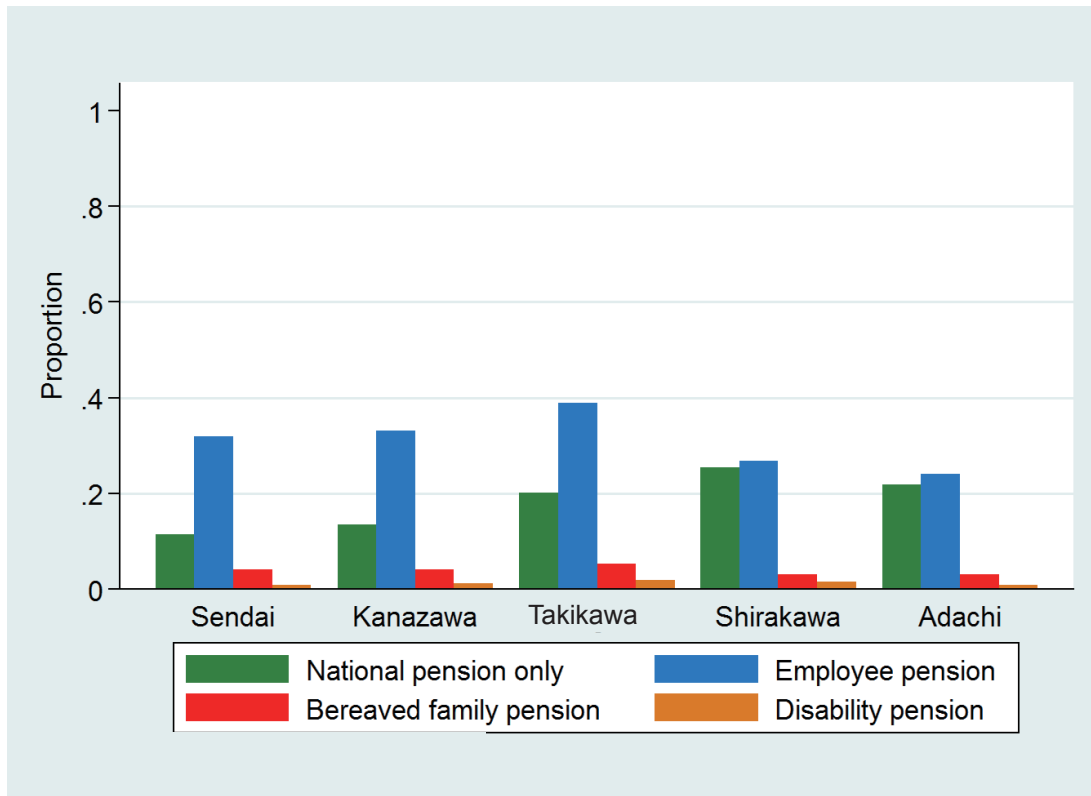


Figure 4-2-1 Public pension by municipality

In comparing with the results in the SHARE book, the Japanese Pension coverage seems to be comparable to the German system which is less than the Swedish, Danish, or Swiss system but more than other SHARE countries.

Figure 4-2-2 reports the replacement ratio by municipality and age category. The replacement ratio is defined as the share of pension income relative to income before retirement and this figure is often used in policy debates on the benefits level of public pension programs. JSTAR asked the respondent about the replacement ratio directly

for both retired and active persons. For men, we find that for the 70-75 age category, there are two peaks, one around 50% and the other around 30%. About 30% to 50% answer the replacement rate to be 30%, and 10% to 25% answer the replacement ratio to be about 50%. While the clear twin peaks disappear for the other age categories, the majority of men answer the replacement ratio to be around 30% to 50%. For women, there is no clear peak common across any age category or municipality. The answers seem to be almost uniformly distributed across 10% to 100%.

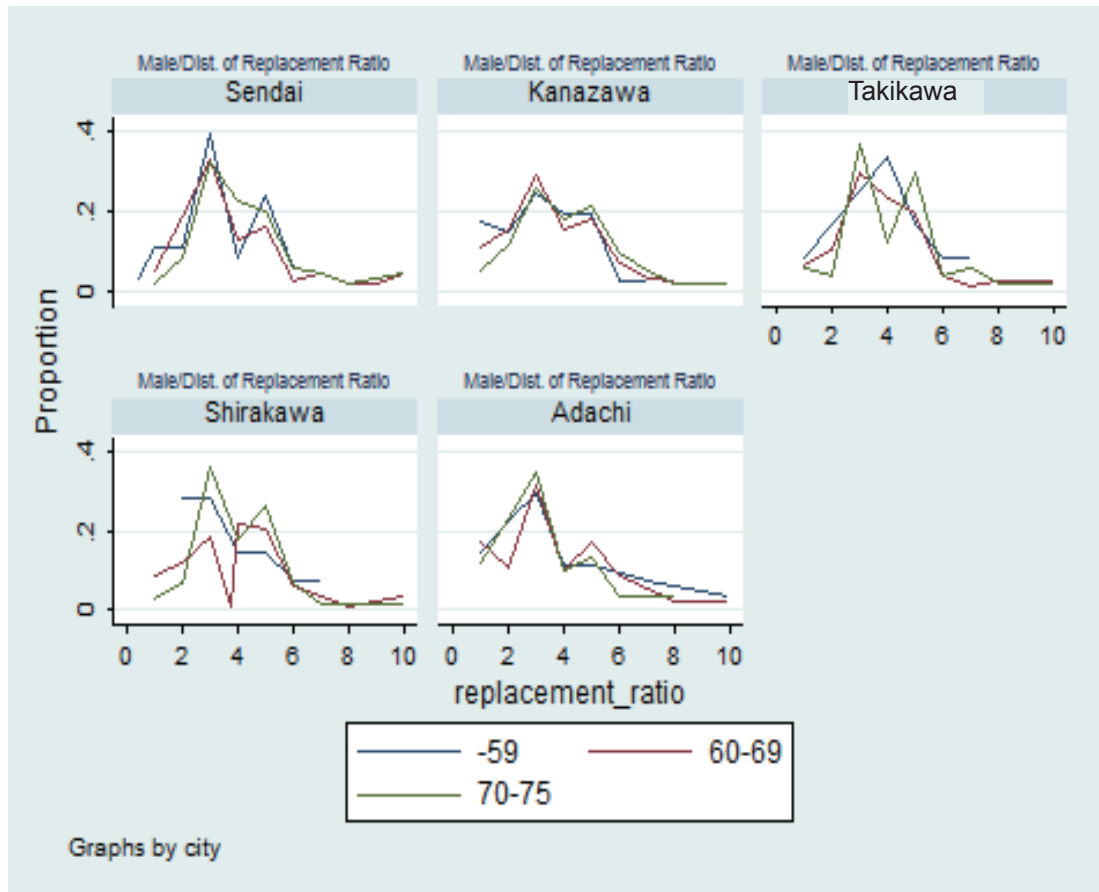


Figure 4-2-2-1 Replacement ratio by age and municipality, males

Lastly, we provide some figures on the third pillar program. While the SHARE book finds the average of 10% or lower participation in Europe, non-public pension claims are much higher for most municipalities across different cohorts. In Japan the participation rate for individuals in their 50s are about 40% and typically the rates are lower for older cohorts but are around 20% for individuals between 70 and 75.

This subsection focused on the eligibility of different pension programs. We make two remarks. One is that the role of pension claims is unarguably associated with income and assets of the elderly, which is examined in the next chapter. Moreover, it is related with private transfers examined in the previous chapter. The comprehensive role of the pension program should be considered in an integrated way incorporating these other factors. The other remark is that the results in this subsection are based on cross sectional baseline data and panel data is necessary to evaluate the effect of pension reforms.

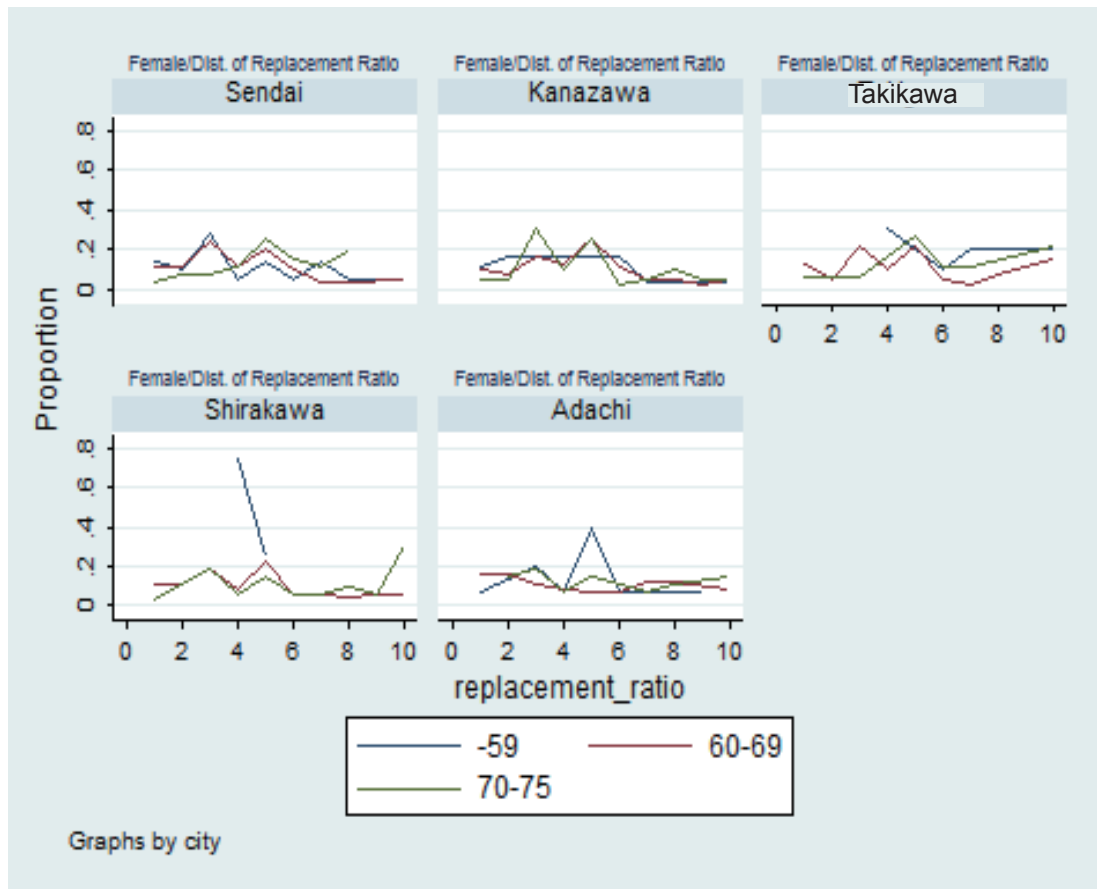


Figure 4-2-2-2 Replacement ratio by age and municipality, females

#### 4.2.4 Conclusions

- Similarly to European countries, public pension programs play a large role in Japan. While the first pillar is mandatory for all residents in Japan, the second pillar is occupation-related and varies across individuals.
- The replacement ratio for men varies around 30% to 50%. For women it varies between 10% to 100% almost uniformly.
- Compared to the SHARE countries, the participation rate for the third pillar comprising purely private pension is much higher at 20% to over 40% for men and women in Japan except for the 70-75 age category in Shirakawa and Adachi. In Shirakawa for both men and women in that age group the participation rate is about 10% and for the same group in Adachi, it is about 15%. Even those groups' participation rate was higher than the rates observed among SHARE countries of about 10% or less.



## 4.3 Pathways to Retirement: Role of Mandatory Retirement

### 4.3.1 Introduction

One of the important lessons from the self-reported labor status is that work and retirement are not exclusive (Figure 4-1-1). In other words, work and retirement are not dichotomous and there are a variety of intermediate labor statuses in the middle (Gruber & Wise 2004). In Japan, a quarter of persons aged 73-75 are still staying in “work” and another quarter are “retired.” This means that the remaining half of these elderly are neither in “work” nor “retired.” The figure is much larger than in Europe with an average of 20%. The dichotomy of active and fully employed elderly and inactive and retired elderly is very misleading and this is especially the case in Japan.

However, this wedge between full work and retirement has largely been ignored probably due to a lack of data on the transition of labor status. As a result, there has been little research on the routes to retirement in Japan. Some elderly are unemployed and receiving unemployment insurance while others are sick and receiving disability pensions. Moreover, some elderly are earning wages under the threshold of the social security earnings test on pension benefits while others are homemaking and participating in volunteer work. JSTAR provides detailed labor status and when longitudinal data are compiled, we will be able to examine the dynamic process of retirement and examine the determinants of the transition process. In what follows, we will perform descriptive analysis and focus on cross sectional insights on the prevalence of a variety of routes to retirement, which is available from the self-reported labor status in the data.

### 4.3.2 Unemployment and Disability as Forms of Pre-Retirement

As in the SHARE book, we examine three routes between employment and retirement. The first category is unemployment. Some people lose a job before being eligible to receive pension benefits and spend some period in unemployment. We note that persons aged 60-64 are entitled to receive reduced benefits of the fixed component of the public pension before the eligible age. If a person aged 60-64 receives pension benefits, he/she is not entitled to receive unemployment insurance, and vice versa. One of the distinct characteristics in Japan is the prevalence of mandatory retirement age. In most cases, larger firms provide an opportunity for re-employment in the same firm or their affiliated ones after reaching mandatory retirement age. But for a short period of transition, many people apply for unemployment insurance.

The second category is disability pension. As the SHARE book discusses, this is not a voluntary transition process to retirement but many European countries provide a generous disability insurance program to manage uneasiness about work or even obsolescence of the worker's human capital. This route is further examined in the next subsection. The third category is pre-retirement programs which allow early exit from the labor force. In most cases, these are nationwide programs. This route seems to be mostly irrelevant in Japan and thus we focus on the first two routes as the intermediate process.

Unlike SHARE which includes different countries with different institutional arrangements on these routes, the programs are uniform in Japan across all the regions

and are supposed to operate in the same way. However, some small variations are observed across municipalities. There are some municipality-specific provisions and diversity in labor demand, industrial sector, and firm size. These factors together with individual factors (health or family status, etc.) produce different patterns of the transition under the same arrangements.

First, we examine “unemployment” as a route to retirement by municipality-age cohorts. Figure 4-3-1 reports the distribution of job seekers. It is interesting that even under a homogeneous program we observe a striking difference across municipalities. In Sendai and Kanazawa the share of job seekers declines gradually along with age starting at about 4% for 55-57 and reaches close to 1% for persons aged 73-75. Shirakawa has lower ratio of around 1% to 2% throughout all age cohorts except age 67-69 probably due to the dominant share of agriculture. In contrast, the remaining two municipalities have different shapes. Both Takikawa and Adachi have about 6% job seekers among the age 58-60 or 64-66. While the share is close to zero for persons aged 73-75 in Takikawa, the figure for Adachi for the same age group exceeds 3%.

These observations reflect the higher share of people in the labor market in late years in Japan. The share of the unemployed in their 50s is lower in Japan than in European

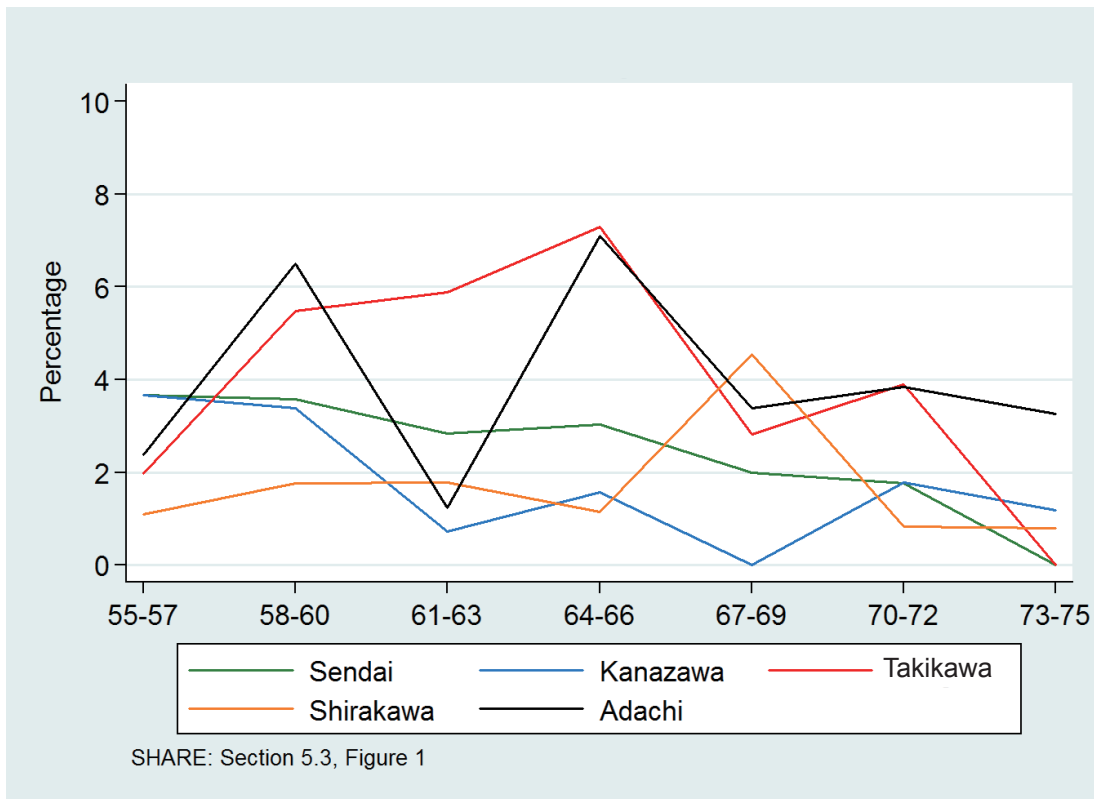


Figure 4-3-1 Distribution of job seekers

countries because the unemployment rate is higher in Europe. In contrast, the share of the unemployed is close to zero in the second half of the 60s in all regions in Europe while the figure exceeds 2% in four out of five municipalities in Japan. Even in the 70s, the share of job seekers is positive in Japan. Overall, the route to retirement via unemployment is much higher in Japan compared to the SHARE countries especially after 65.

Next, we turn to “disabled” as a route to retirement. Figure 4-3-2 reports the distribution of disabled individuals. Disabled individuals are defined as those who are officially certified as needing help. The share of the disabled is below 1% in cohorts up to 63 except persons aged 55-57 in Adachi. In general, the figures increase with age for all municipalities and reach around 4%-6% in the 73-75 age cohort. This finding contrasts sharply to that in European countries. The SHARE book shows that the share of disabled in the 50s and the first half of the 60s is larger than that in Japan but it declines to zero before age 70 because the disabled persons move to the “retired” category. Only some countries like the Netherlands or Spain have some positive share after 70s and Greece has an upward trend in the share of the disabled persons. While the SHARE book concludes that the case of Greece is a puzzle, Japan has a similar pattern. One speculation is that the distinction between retired and disabled is different from other European countries due to some institutional differences.

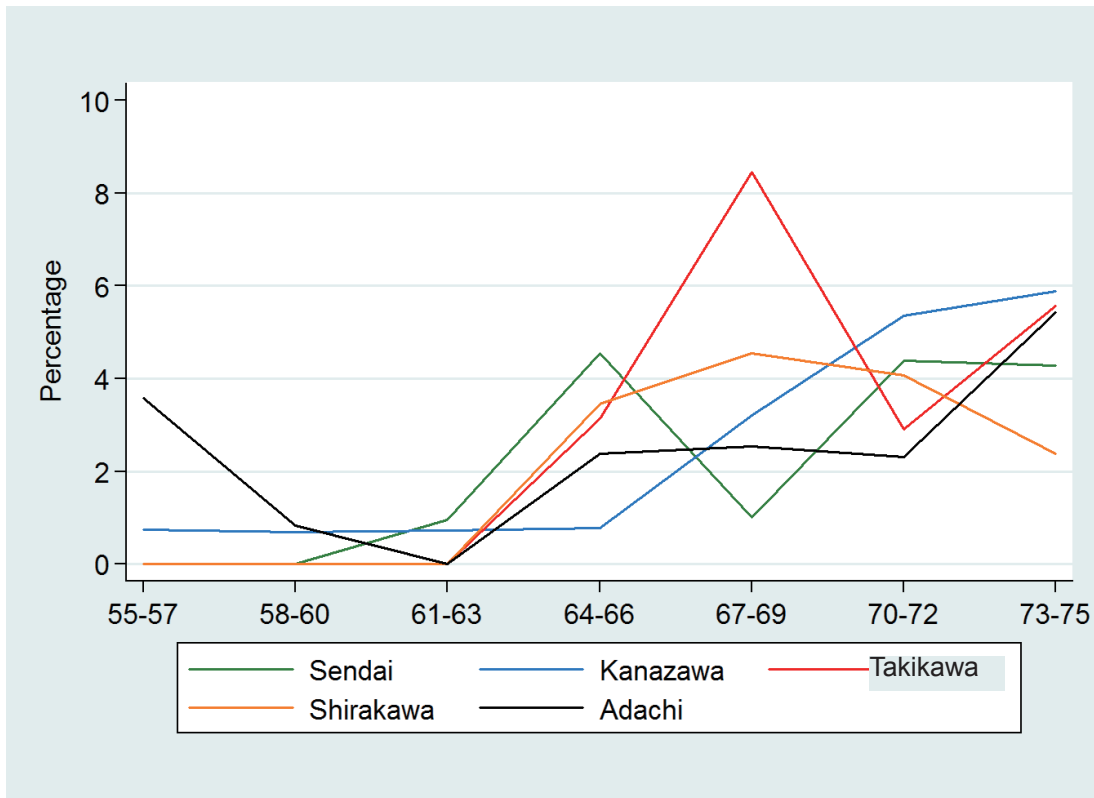


Figure 4-3-2 Distribution of disabled individuals

### 4.3.3 Partial or Gradual Retirement

Next, we turn to partial or gradual retirement. The SHARE book defines partial or gradual retirement as situations where an individual simultaneously receives earnings and draws resources from pension benefits. Some people have an opportunity to work at the same or affiliated corporations in a part-time status (shorter working hours) after mandatory retirement while others seek a different job for diverse reasons including health maintenance or earning additional income. The Japanese public pension program presumes a coexistence of work and retirement and has an earnings test on the

receipt of pension benefits (*zaishoku*). The prevalence of the joint work and retirement might be more important in Japan with the higher labor force participation rate than European countries.

We disregard people reporting themselves as “unemployed,” “permanently sick or disabled” and confine the sample to those who identify themselves “employed,” “retired,” or “homemaker” and examine how the fraction of these groups differs across different municipalities and age groups.

The actual amount of work varies significantly so we classify work hours into three categories: 40 hours or more per week, between 15 hours and 40 hours per week, and less than 15 hours per week. Table 4-3-1 gives overall results for all people aged between 55 and 75.

Table 4-3-1 Working hours per week

	Work	40 hours or more%	15 hours or more%	less than 15 hours%	Retired%
Sendai	53.11	36.07	14.05	2.99	46.89
Kanazawa	60.87	39.6	16.69	4.58	39.13
Takikawa	49.67	31.65	14.51	3.52	50.33
Shirakawa	60.31	44.89	11.91	3.51	39.69
Adachi	65.38	39.15	22.25	3.98	34.62
		40 hours or more%	15 hours or more%	less than 15 hours%	Retired%
		55-60			
Sendai	79.52	60.95	16.19	2.38	20.48
Kanazawa	85.78	60.78	18.53	6.47	14.22
Takikawa	82.11	61.05	18.95	2.11	17.89
Shirakawa	91.98	74.33	14.44	3.21	8.02
Adachi	88.95	61.05	25.58	2.33	11.05
		61-64			
Sendai	62.96	39.26	22.22	1.48	37.04
Kanazawa	69.68	43.23	19.35	7.1	30.32
Takikawa	74.36	44.87	24.36	5.13	25.64
Shirakawa	73.13	58.21	7.46	7.46	26.87
Adachi	80.18	51.35	24.32	4.5	19.82
		65-70			
Sendai	37.86	17.96	16.02	3.88	62.14
Kanazawa	41.27	17.99	19.05	4.23	58.73
Takikawa	36.89	20.49	11.48	4.92	63.11
Shirakawa	52.21	28.68	17.65	5.88	47.79
Adachi	61.31	30.65	25.63	5.03	38.69
		71-75			
Sendai	15.79	6.77	5.26	3.76	84.21
Kanazawa	23.2	13.6	8	1.6	76.8
Takikawa	19.33	11.76	5.88	1.68	80.67
Shirakawa	22.3	12.16	8.11	2.03	77.7
Adachi	32.9	13.55	14.84	4.52	67.1

For both men and women there is a gradual shift from the 40 hours or more category to fewer hours of work as we examine across older cohorts. Whether this is an age effect or a cohort effect will become clearer as we collect panel data. The shift occurs much more rapidly for women than for men.

#### **4.3.4 Conclusions**

- Examining the variety of transition paths to retirement is especially important in Japan but there is little research on the intermediate period between work and retirement. JSTAR enables us to explore the nature and the determinants of the transition process at a micro-level.
- The patterns in the share of the self-assessed unemployed or the disabled have different shapes between Japan and European countries. This is also the case for people who are “partially retired.” Possible factors including institutional arrangements or health status should be examined to account for the difference.
- Panel data after the second wave will begin to allow us to examine the dynamic transition process among a variety of transition paths.

## 4.4 Work Disability and Health: Strict Eligibility

### 4.4.1 Introduction

Disability insurance is used heavily in some European countries and forms a substantial part of social security benefits in many countries. For example, among those who are aged 50 to 65, Sweden and Denmark have approximately 16% and the Netherlands over 14% of persons receiving disability insurance benefits. But the fraction varies greatly across European countries. For example the same figures for Germany, France, and Spain are about 5%, 4.5%, and 9%, respectively, and for Austria and Greece, the numbers are both less than 3%. While disability insurance provides a safety-net for health-related income losses, it is often debated that generosity of disability insurance gives people incentive to retire early and the misuse unnecessarily puts considerable pressure on the social security system.

Japanese public pension programs have a similar insurance against the loss of ability to work called “disability pension.” The eligibility for receiving disability pension benefits requires that (1) the person has become disabled when he/she is a pensioner (precisely, he/she must be a pensioner on the first day of the doctor visit regarding the loss of ability), (2) the person has paid contributions for more than the minimum required years, (3) the person is disabled enough to be rated over the criteria, and (4) the person is aged under 65 at the time of the first claim. A person applying for the disability pension must file to municipalities with a doctor's medical certificate and self-reported records of illness and employment. A decision is made within three months and the eligibility is reviewed every year with a new medical certificate. An eligible person is entitled to receive benefits even if he/she has a paid job. The process is mostly similar to both NPI pensioners and EPI/MAI pensioners.

Figure 4-4-1 reports the enrollment rate of disability pension across municipalities in JSTAR. The figures reported are below the lowest level in European countries. Among the municipalities, the highest rate is close to 2% in Takikawa and the figure is less than 1% in Sendai and Adachi. We note that the samples in the figure are persons aged 50-75, instead of those aged 50-65, but a person should claim for disability insurance before age 65 in Japan, which makes these figures comparable.

### 4.4.2 Potential Causes for Disability Insurance Enrollment

The SHARE book explores three possible factors for variations in the enrollment rate in European countries: demographics, health, and institutions. In order to explore these factors, the SHARE book employs some econometric methods to adjust for difference in age or health and predict enrollment ratio if demographics or health status are equal across countries. We describe the prevalence of disability pensions in Japan using simple summary statistics.

First, older persons are more likely to be disabled. However, Japan as a country adds to the finding in the SHARE book: the demographic differences are not responsible for variations in enrollment rates across municipalities. That is, while Japan has a larger share of elderly in the population than European countries, the enrollment ratio is below the minimum in Europe.

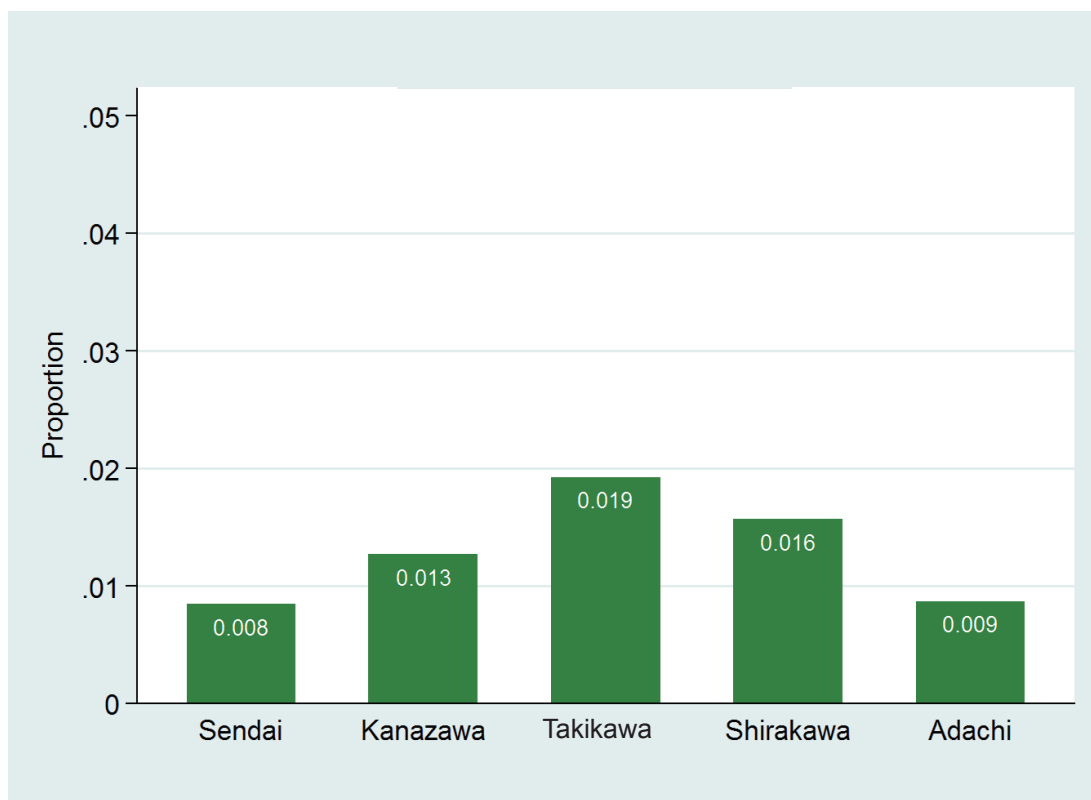


Figure 4-4-1 Disability pension by municipality

The same observations hold true at the municipality level within Japan. Figure 4-4-2 illustrates the enrollment ratio by age-municipality. While we see small jumps in age 58-60 and age 67-69, the enrollment ratio is not correlated with age except for Kanazawa and Sendai. In Europe, a large drop in the disability insurance enrollment rate between age 65 and 70 is observed since disability insurance benefits are automatically converted to old-age pension benefits at age 65 in most countries. We do not see such a drop across age cohorts in Japan due to a difference in institutional arrangements between Japan and European countries. We emphasize that at this point we cannot distinguish the age effect and the cohort effect and the interpretation of these findings.

The second potential cause is health status. While the consideration clearly depends on how we measure health status (see Chapter 2), the disparity in health status seems not to be responsible for the difference in the disability pension enrollment rate. There is no distinct evidence that health status is worse in Takikawa with the highest rate among municipalities. The SHARE book also concludes that differences in health are not able to account for variation in the European disability insurance enrollment, which seems to be consistent with the finding in JSTAR.

The third cause is institutional difference. While the disability insurance scheme, including eligibility and benefits, is set uniformly by the central government and is supposed to be operated in the same way in all regions in Japan, we do not exclude the possibility that there exists disparity of operation across municipalities which affects the disability pension enrollment. This is surely an interesting topic but, for this, we need to collect information about the details of the disability pension administration.

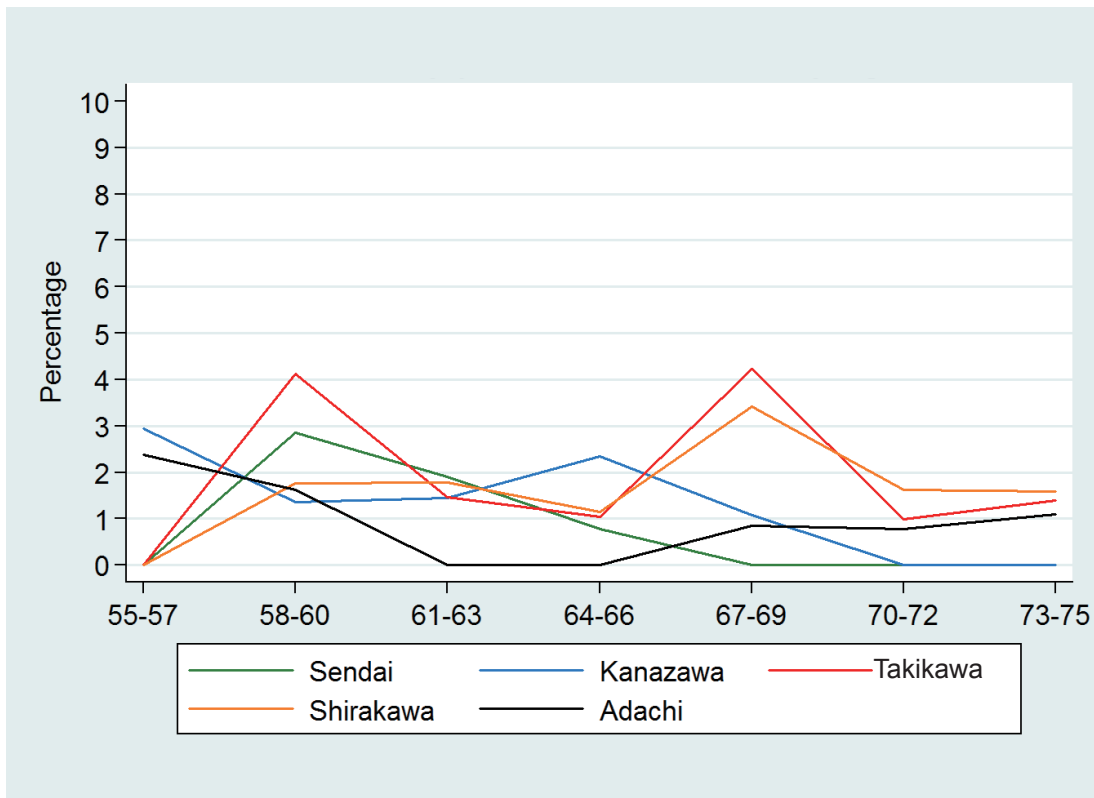


Figure 4-4-2 Disability pension enrollment by age

In sum, we find that disability pension enrollment rate is very low in Japan compared to the European standard. In European countries, disability insurance may work as a labor market exit route to early retirement (Börsch-Supan 2001). In contrast, there has been little argument on early retirement in Japan and the low take-up rate in Japan has not invited much attention to the relationship between disability pension program and early retirement. One possible explanation is the strict eligibility. In Japan, a person applying for disability pension must submit a medical certificate, but this is not the case in European countries. We do not exclude other possibilities like cultural difference or provision of workplace for the disabled persons. Moreover, in future, it is possible that Japan will have a higher take-up rate for disability insurance. In contrast to causes for the late retirement in Japan, experience on disability insurance and early retirement from other countries surely provides useful lessons for Japan.

#### 4.4.3 Conclusions

- The disability pension enrollment is very low in Japan at a range of 1%-2%, which is lower than the minimum in European countries.
- There is a very small variation in the enrollment ratio across municipalities. Difference in age or health status seems not to be responsible. Institutional factors are a more likely explanation but the variation across municipalities is still small.
- Examination of the reasons for the extreme difference in the enrollment ratios of European countries and that of Japan may be fruitful for all countries.



## 4.5 Volunteer Work

### 4.5.1 Introduction

In the previous subsections, we examined the retirement process of Japanese elderly focusing on paid work. This is just one side of daily lives of the elderly. The remaining aspects include volunteer (unpaid) work and non-working life. The next two sections explore these two activities. Volunteer work is defined as “unpaid work provided to parties to whom the worker owes no contractual, familial, or friendship obligations” (Wilson & Musick 1997). Previous studies revealed that older volunteers are more highly committed than other age groups (Gallagher 1994) and that the productive nature of volunteering should be particularly beneficial for older people's life satisfaction or health (e.g. Siegrist et al. 2004).

Both Japan and European countries lack an internationally-comparable data set on volunteer engagement. Moreover, volunteer activity is affected by a broad social context and comprehensive information on all aspects of the elderly life, including socioeconomic and health status. Further, family and cultural background are necessary to understand the nature and effect of volunteering activities. Otherwise, research is forced to focus on a narrow aspect of volunteering. JSTAR provides a wide variety of variables related to unpaid work and also permits international comparison of volunteer engagement as it is designed comparably with SHARE.

In this subsection, we focus mainly on elderly participation in volunteer work using a binary indicator, which is available in the leave-behind-questionnaire of JSTAR. Moreover, we try to relate participation in volunteer work with some factors including health or socioeconomic status.

### 4.5.2 Measuring Volunteer Work in JSTAR

JSTAR contains information on whether the respondent has been actively engaged in voluntary or charity work during the month before the interview, which is comparable with SHARE. Similar to the analysis in the SHARE book, we do not focus on membership which is highly correlated with activity but often is likely to overestimate the activities. As the SHARE book noted, volunteering in the previous month is a conservative way to measure volunteer activity since volunteer work is often performed irregularly and some studies use retrospective questions regarding participation covering a longer period of time (e.g. the previous year). But we use the definition for comparability with SHARE.

The SHARE book provides an interesting finding that European countries are divided into three groups based on participation rate in volunteering: the low participation countries (the Mediterranean), the middle participation countries (Germany, France, Switzerland, and Austria) and the high participation countries (Sweden, Denmark and the Netherlands). Figure 4-5-1 reports the average shares of participants in volunteering in each municipality. While the share of engagement varies across municipalities, the highest in Shirakawa (17%) and the lowest in Adachi (7%), the average of all municipalities is close to 10%, which is comparable with the level in the “middle participation” countries in Europe, such as Germany, France, Switzerland, and Austria.

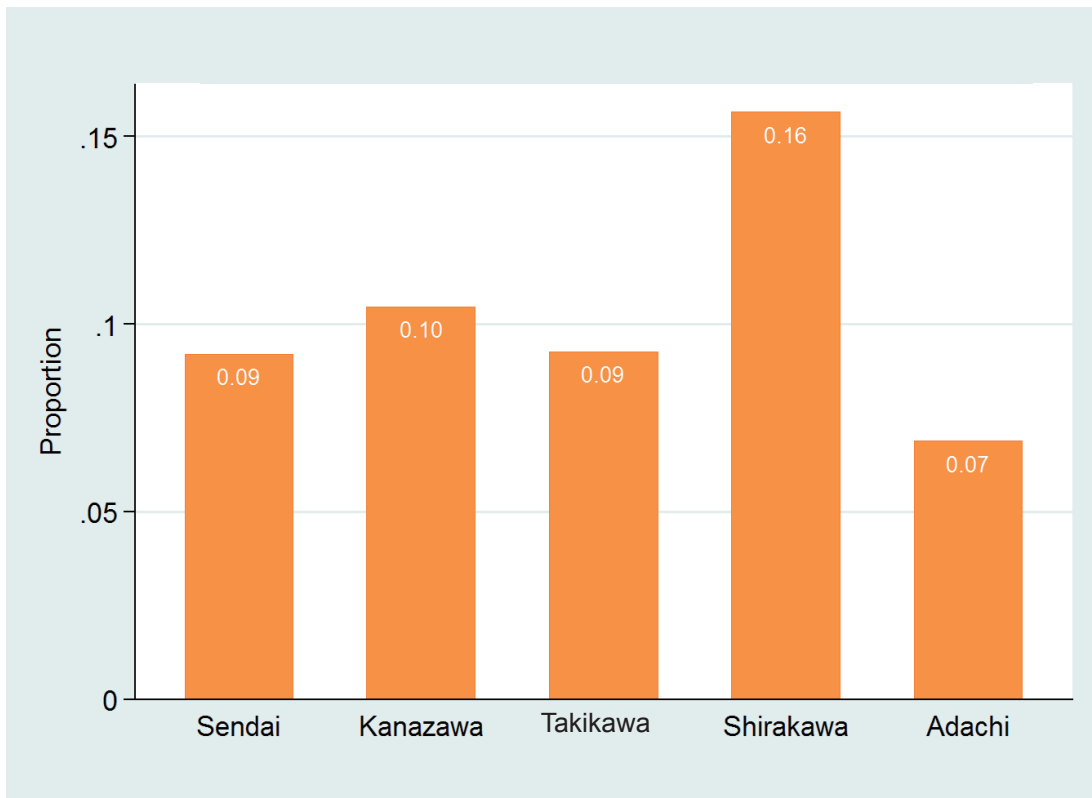


Figure 4-5-1 Participation in volunteer work by municipality

Next, we turn to the demographic characteristics of volunteers. Figures 4-5-2 and 4-5-3 report the volunteer participation rates for different age cohorts for men and women, respectively. Like in SHARE countries, gender differences in volunteering are mostly small and there is not much systematic age gradient across cohorts observed among the municipalities. Exceptions are the 70-75 cohort in Takikawa. Almost 20% of males in the 70-75 cohort volunteer but slightly less than 10% of women in the same cohort volunteer in Takikawa.

In many of the SHARE countries, Spain being an exception, the age gradient of volunteer activity was observed clearly. Figure 4-5-4 examines the relationship between volunteering and health status. The SHARE book reports much lower activity rates among those who perceive their current health status as fair or worse (6%), compared to those who report a good or better health condition (13%).

In contrast, the relation is ambiguous in Japan. In Shirakawa with the highest participation in volunteering among the five municipalities, the share of participation is higher for those who identify themselves as more healthy. This is probably because the volunteering activities are closely related to agriculture and requires participants to be healthy (otherwise, they cannot participate in the activities). Excepting Shirakawa, we do not see any clear pattern between volunteering and health status.

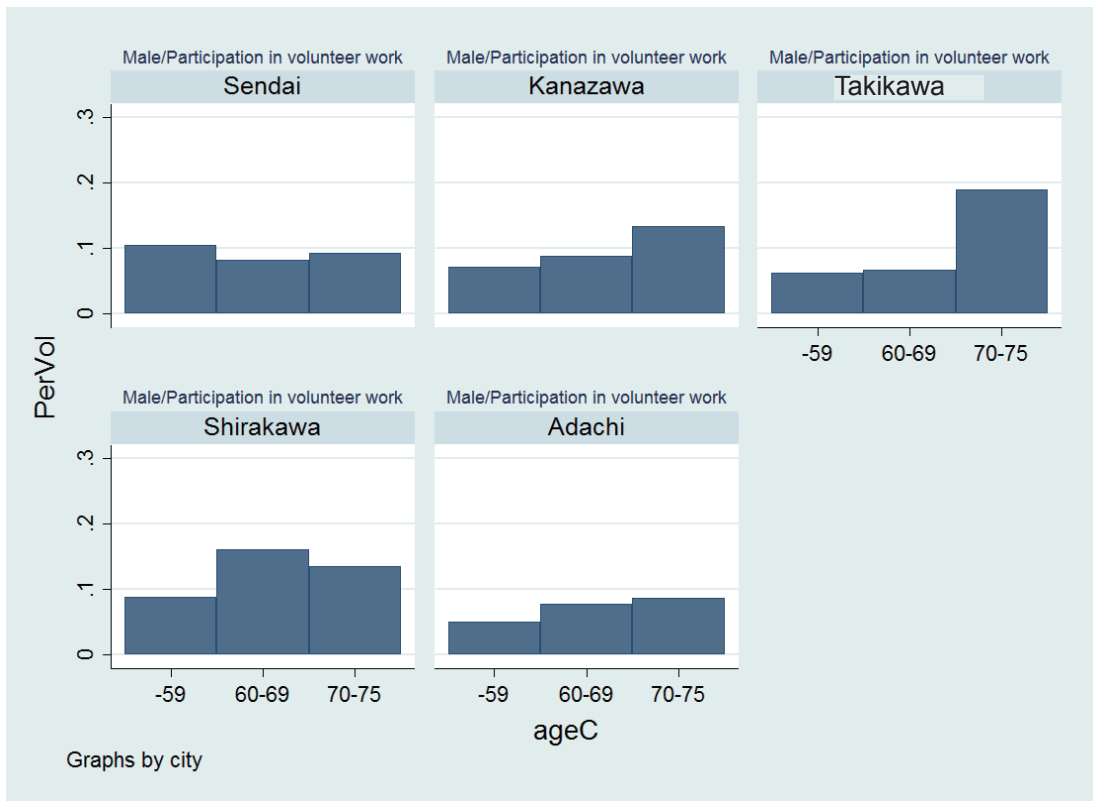


Figure 4-5-2 Participation in volunteer work by municipality, males

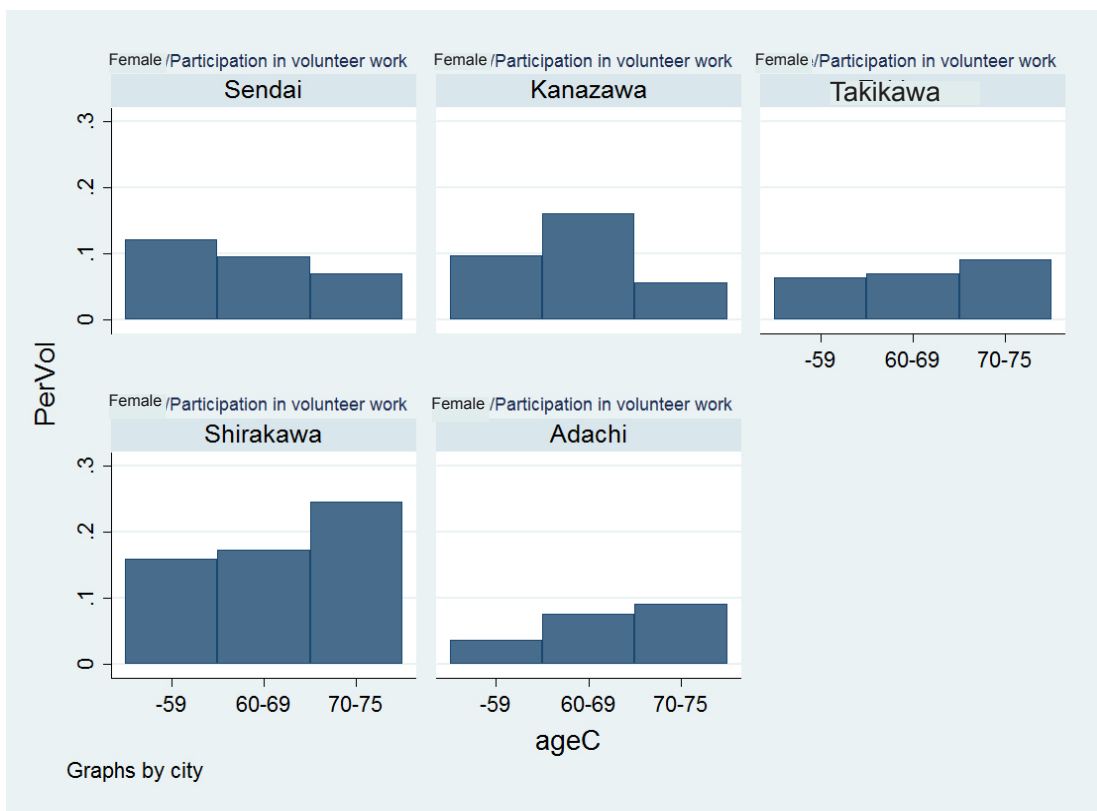


Figure 4-5-3 Participation in volunteer work by municipality, females

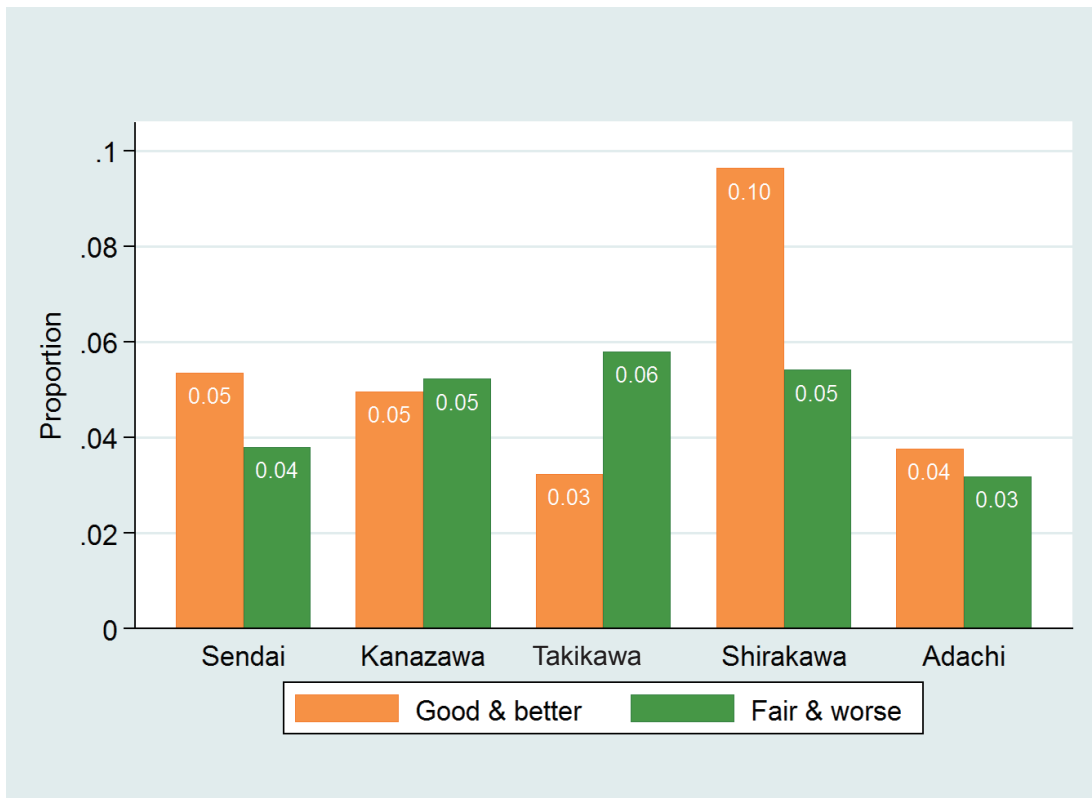


Figure 4-5-4 Participation in volunteer work by self-reported health by municipality

### 4.5.3 Lessons from Voluntary Engagement in the Elderly

While most economic analysis focuses on individual-level supply of “paid” work, volunteering as an unpaid work holds a large position in elderly daily life. Our preview on volunteering activities across five municipalities indicates, like in European countries, the relevance of the social, institutional, and cultural background for private voluntary engagement. For example, the high participation rate in Shirakawa is plausibly associated with agriculture which often calls for collective actions for work, cultural events, and mutual transfers among households. In this sense, it is natural that some urban areas like Sendai or Adachi have lower participation in volunteering activities. While we rely on a preview of JSTAR results, the SHARE book refers to strong indication for contextual effects on the probability to participate in voluntary work and, at the same time, a remarkable consistency in the association of individual characteristics with volunteering activities.

Further research is needed for more in-depth examination on determinants of participation in volunteering work (social responsibility, consciousness, health, personal joy, etc.), especially in an international or inter-regional perspective, and on the relationship between paid and non-paid work in the elder generation and on the effect of volunteering work on quality of life for the elderly. Moreover, suggestions for policy direction towards volunteering work in the future are needed in Japan. In Europe, the European Union has taken initiative to promote greater participation in voluntary work (cf. Commission of the European Communities 1997). While policy direction of the Japanese government toward volunteer work seems to be largely motivated

by temporal help for victims of natural disasters (the Kobe earthquake in 1995 was an epoch-making event to stimulate volunteering activities), the number volunteering has rapidly increased in recent years and it is possible that unpaid work done by the elderly will gain more importance in an aged society. Since the nature of volunteer work is “voluntary,” government intervention should be executed carefully. In this sense, we need to exploit the panel nature of JSTAR after the second wave to examine what motivates the elderly to engage in unpaid work and what they receive from those activities as well as how participation in volunteer activities improve quality of life for the elderly and how policies toward those activities should be designed.

#### **4.5.4 Conclusions**

- The average share of participation in volunteer work in Japan is close to 10%, which is comparable with the middle group in Europe.
- Male and female differences in the volunteer participation rate for most cohorts are at most about 5%, although there are a few exceptions.
- The volunteer participation rate in Japan is not correlated with age or health status. In Europe, across all SHARE countries, there is a remarkable consistency in the association of a broad range of individual characteristics, such as age or health, with volunteering.
- Future research should examine the motivations of the elderly to engage in unpaid work and what they receive from those activities as well as how participation in volunteering activities improves quality of life for the elderly and how policies toward those activities are designed.

## 4.6 How Do Japanese Older Adults Use Their Time?

### 4.6.1 Introduction

This chapter previewed work and retirement behavior which emerged from the baseline data of JSTAR. One of the important findings is that Japanese elderly retire in very late years and the share of those people in the intermediate process which is neither work nor retirement is larger than that in European countries. This last subsection of the chapter provides a bird's-eye view on time allocation of Japanese older adults to understand their daily activities comprehensively.

Time allocation, which is the manifestation of the daily activities of individuals, is surely critical for understanding individual and societal economic behavior and calls for interdisciplinary research. Choice between labor and leisure or that between personal and social activities, for example, determines quality of life and important considerations for the design of related public policies. Since time allocation covers all aspects of daily life, analysis requires information on accurate measure of time allocation of individuals as well as a variety of variables including health and socioeconomic and demographic status. As in European countries, an individual-level dataset with comprehensive variables has not been rich in Japan. JSTAR provides comprehensive variables which are comparable with SHARE and enables us to examine disparity in time use across countries and draw policy implications with an international perspective. At this point, JSTAR data is cross sectional and analysis does not distinguish between age and cohort effects but the panel structure after the second wave will overcome that limitation.

Figure 4-6-1 illustrates the proportion of respondents who engaged in several activities in the month prior to the interview across municipalities. While many Japanese people are active workers in late years, they are also engaged in non-work activities. We see a remarkably similar pattern across municipalities except Shirakawa. The most popular activity is hobby including traveling, which occupies about 20% of all persons, followed by participation in community activity.

About 10% are engaged in volunteering (including charity work) and also 10% in sports activities. The share of those who are providing help to people in the neighborhood, religious activities, politics, or learning (attending educational or training courses) is lower, each less than 5% in most municipalities. Among four municipalities, we see slightly higher shares in those activities in Sendai and Kanazawa than in Takikawa and Adachi. The picture of Shirakawa, which is located in a mountainous area where most people are engaged in agriculture and forestry, is different from that of other municipalities. The highest share of activities is community activities (25%), followed by hobby (18%). The shares of volunteering and sports activities are also higher than other regions. There are some differences in the distribution of those activities between Japan and European countries. While the share of working (which is omitted in this figure) is much higher in Japan, that of providing help or care, club activities, and religion is higher in Europe. Although the difference may be partly accounted for by cultural differences, the lower share of providing help reflects the larger share of work as seen below. As regards the relationship between volunteering activities examined in

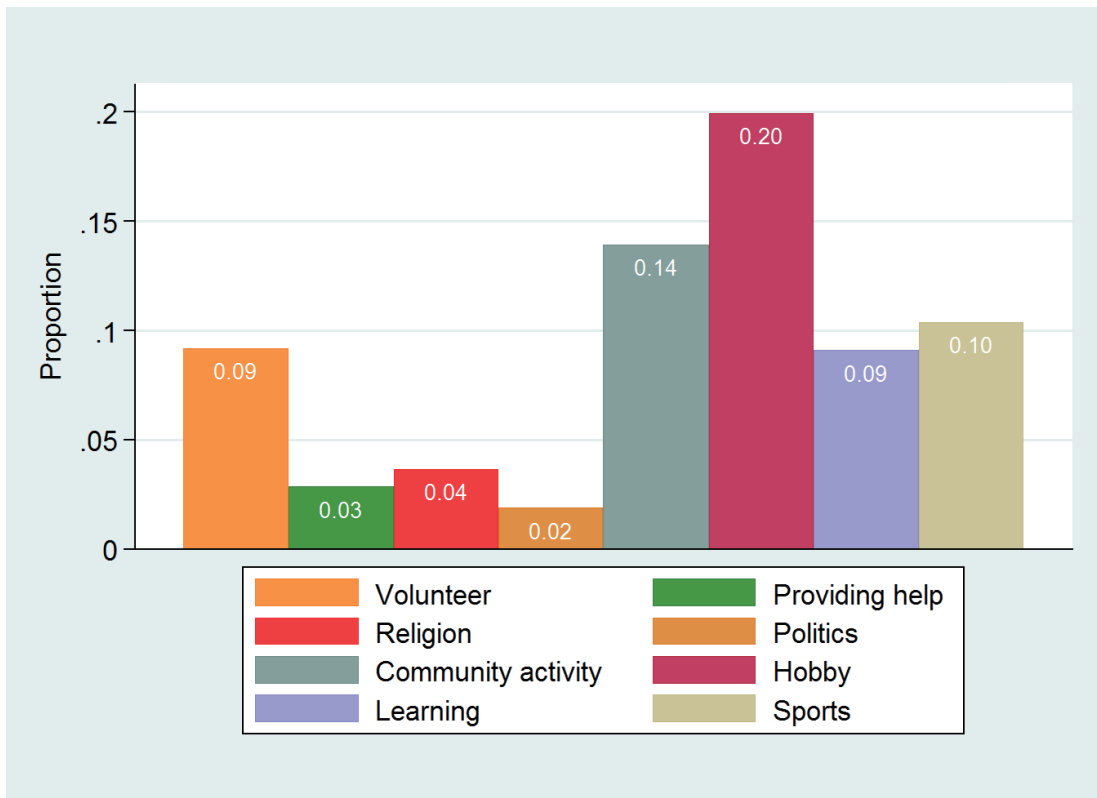


Figure 4-6-1-1 Participation in activities: Sendai

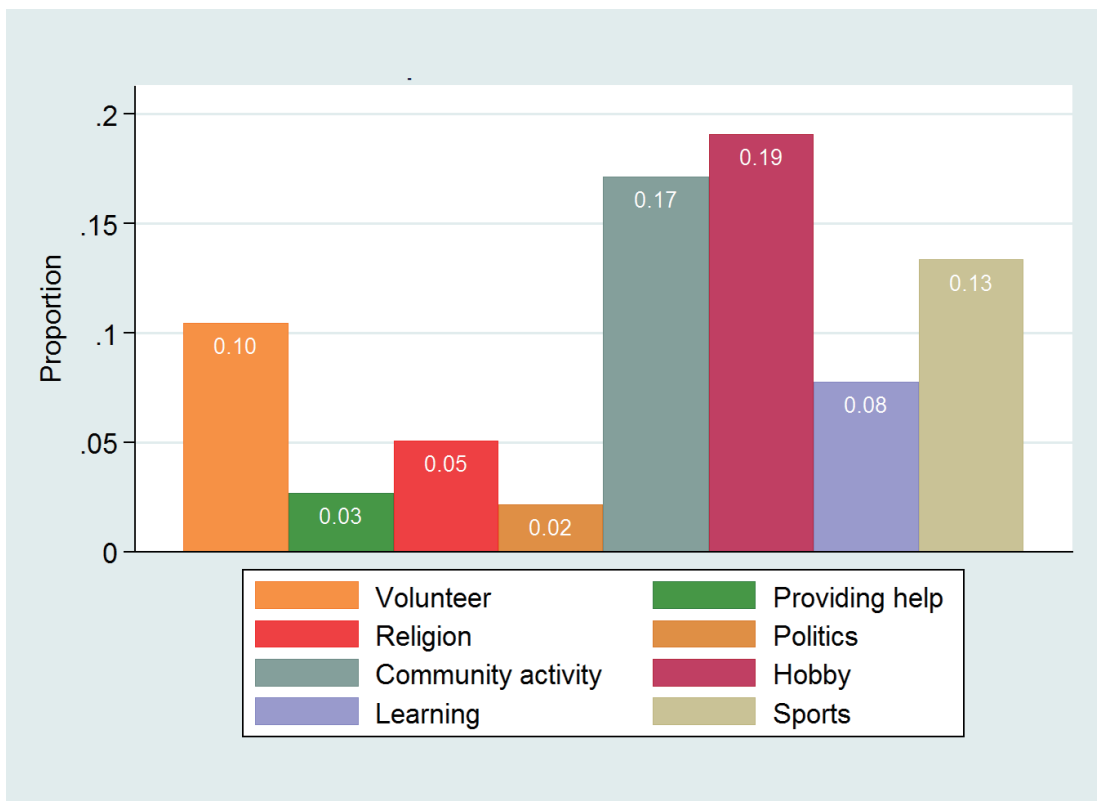


Figure 4-6-1-2 Participation in activities: Kanazawa

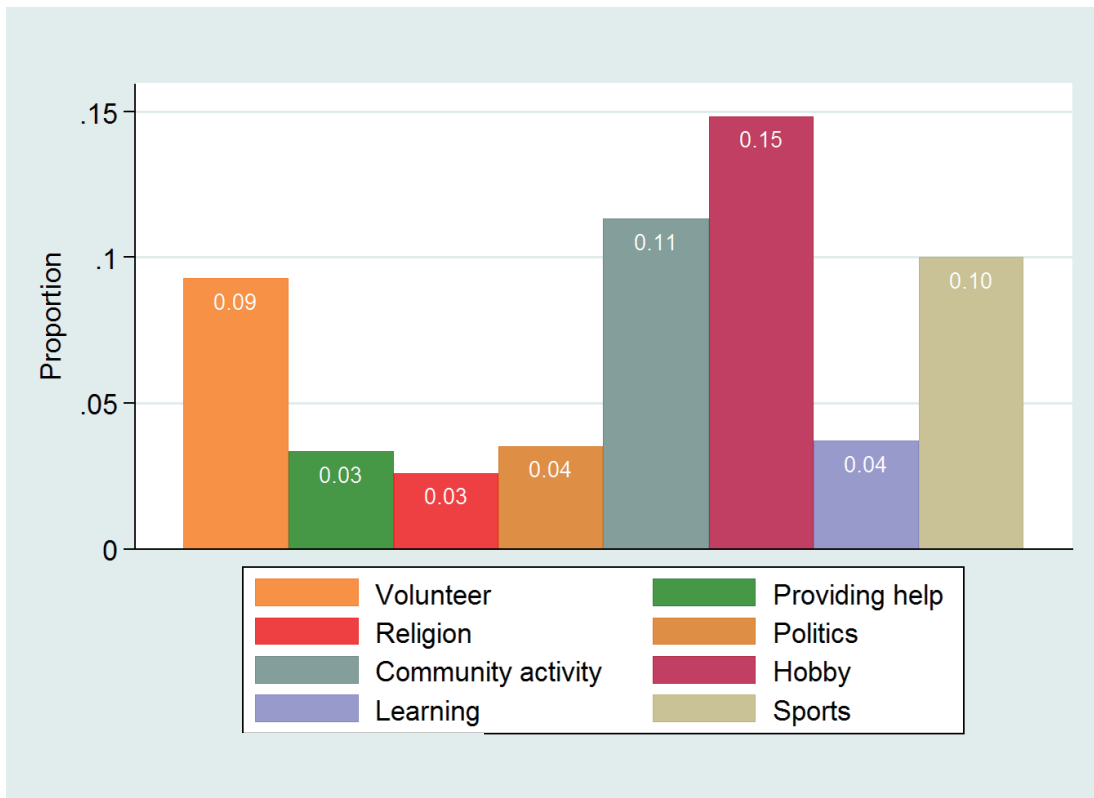


Figure 4-6-1-3 Participation in activities: Takikawa

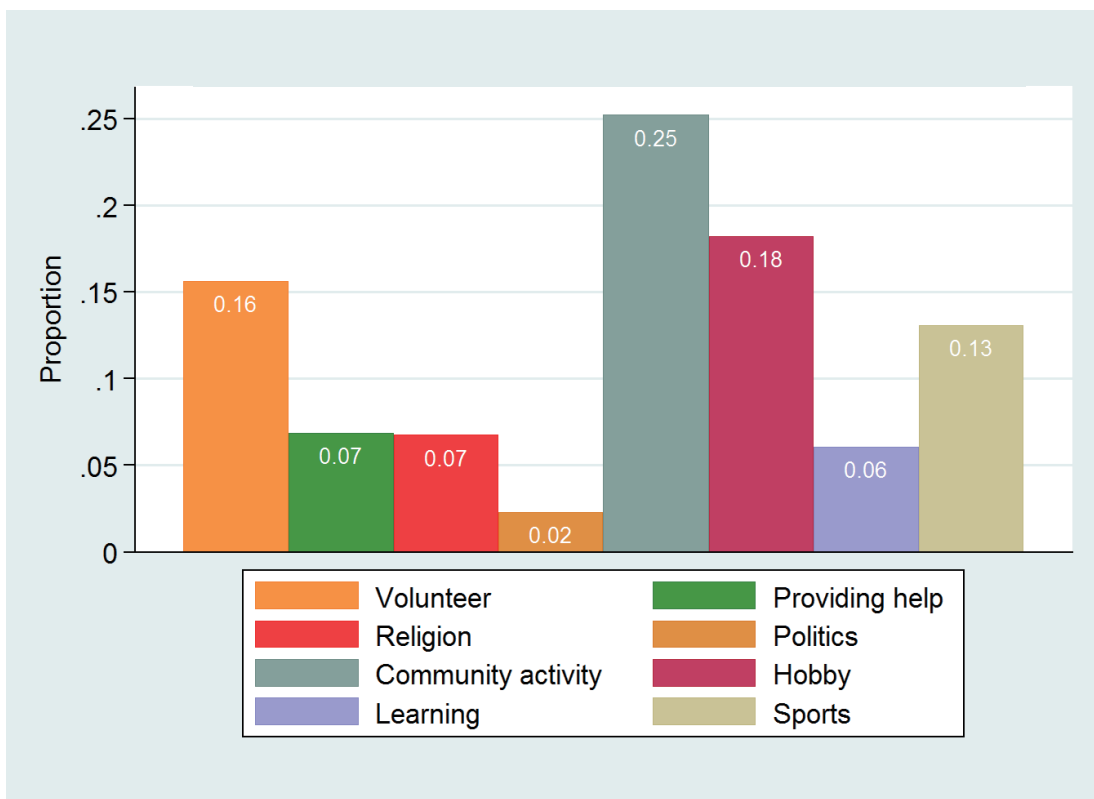


Figure 4-6-1-4 Participation in activities: Shirakawa



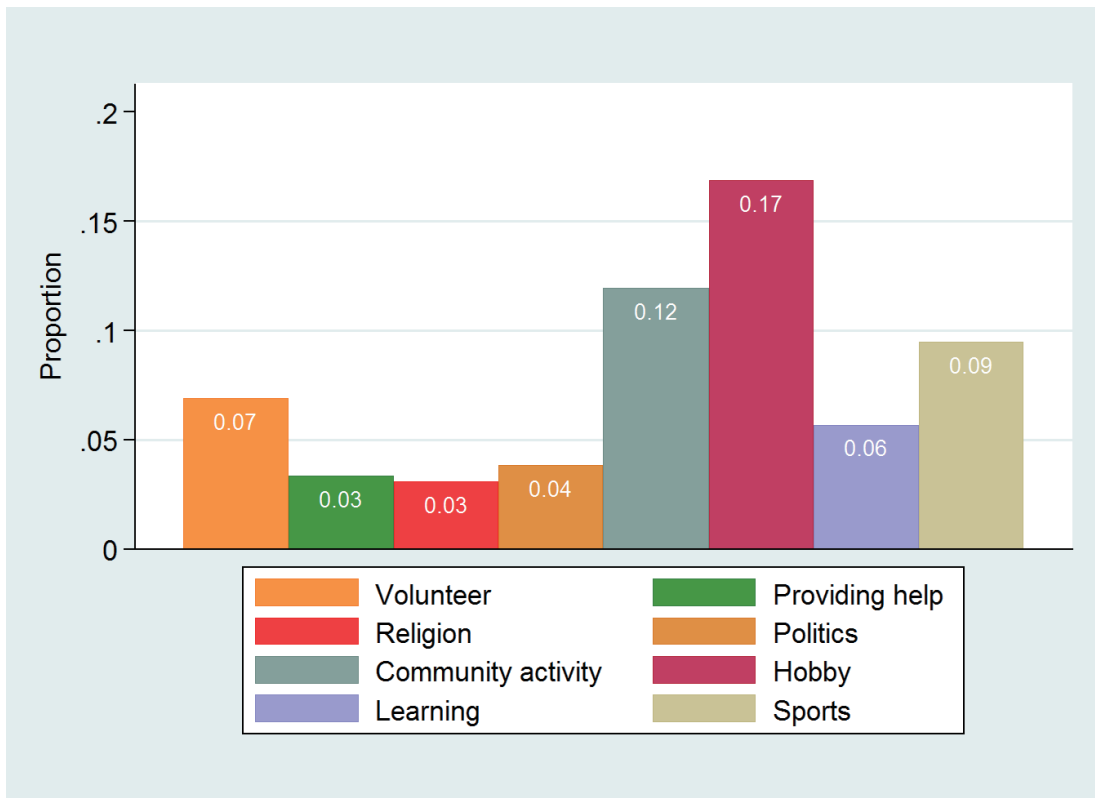


Figure 4-6-1-5 Participation in activities: Adachi

the previous section and these other social activities, the SHARE book points out that a country with a higher share of people engaged in provision of informal help or care also have a higher share of people participating in volunteer activities: there is a higher share in Nordic countries and a lower share in the Mediterranean countries. The share of those participating in volunteer activities in Japan is comparable with those in the middle European countries (Germany, France, etc.), but the share of those providing help is much lower in Japan than in those countries. Although Shirakawa has higher rates both in volunteering and providing help among municipalities, a higher share of providing help or care among those who report to have volunteered is not necessarily observed in Japan.

In what follows, we focus on the prevalence and time devoted to two activities: market work and provision of help to relatives outside the household, friends, and neighbors during the past 12 months. JSTAR does not have an explicit question on providing care for grandchildren, which will be collected in the second wave.

#### 4.6.2 Time Allocation by Japanese Older Adults: Prevalence

JSTAR asks a respondent whether he/she is a worker and also asks he/she provides co-resident family members, non-co-resident relatives, or friends/neighbors with personal care, practical household help, or help with paperwork, during the past 12 months.

Figure 4-6-2 shows the proportion of those who are engaged in market work or provision of help by gender-municipality. We observe a common pattern across municipalities and across gender. First, the share of those who are working (market activi-

ties) ranges between 80% and 90% for males and between 70% and 80% for females. On the other hand, the share of those who provided help (non-market activities) is much smaller, less than 5%, and the figure does not differ between males and females. This is strikingly different from the finding in the SHARE book. The SHARE book finds that the proportion of men working for pay ranges from 30% in France and Austria to more than 60% in Switzerland while that proportion of men providing help varies from 50% in Denmark to 13% in Spain. The prevalence of work is much more dominant in Japan than the maximum in Europe and the prevalence of providing help is much less in Japan than the minimum in European countries. While we discussed the high share of working in Subsection 4.1, the SHARE book pointed out that the reason for the lowest prevalence of provision of help among Mediterranean countries is that the household size is large in those countries and there is crowding out between helping friends and relatives inside and outside the household. However, it seems this is not the case in Japan since the highest share of those providing help is observed in Shirakawa where a large family size is more prevalent than in other countries.

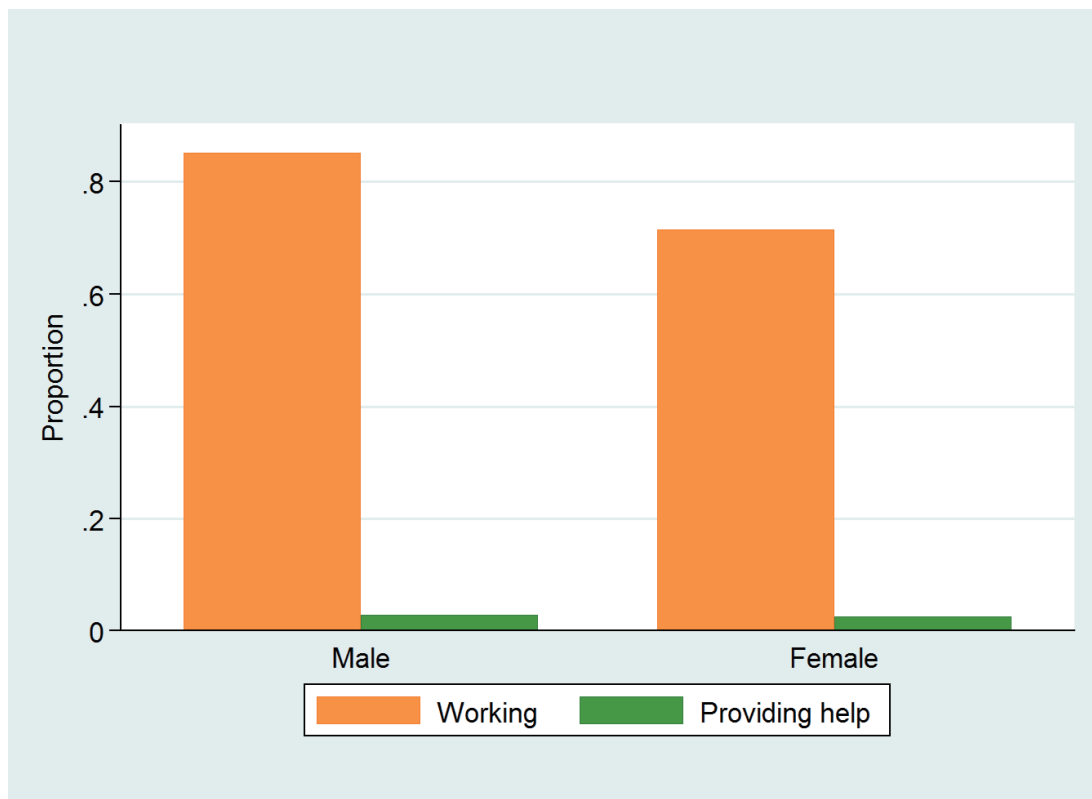


Figure 4-6-2-1 Prevalence of market and non-market activities: Sendai



Figure 4-6-2-2 Prevalence of market and non-market activities: Kanazawa



Figure 4-6-2-3 Prevalence of market and non-market activities: Takikawa



Figure 4-6-2-4 Prevalence of market and non-market activities: Shirakawa



Figure 4-6-2-5 Prevalence of market and non-market activities: Adachi

The homogeneous share of those who are providing help between males and females might also be somewhat unexpected since females are less likely to be active in the labor market and more likely to have an opportunity to provide help. We may need to look into various possibilities including a possibility that the way we phrased the question inadvertently led to under-reporting of providing help to others. We need further investigation on this issue by examining the difference in age cohorts or frequency of those activities and the type of care receivers. JSTAR does not have an explicit question on care for grandchildren. The SHARE book shows that younger grandparents display noticeable gender differences in the patterns of caring for grandchildren, with younger grandmothers more likely to look after grandchildren than grandfathers while older grandfathers are more likely to care for grandchildren. Casual observation suggests that this is also the case in Japan but we need explicit data on this issue. We plan to collect the information in the second wave.

Next, we turn to the effect of health status on ability to engage in these activities. Figure 4-6-3 reports the prevalence of market and non-market activities by gender-municipality-health status.



Figure 4-6-3-1 Prevalence of market and non-market activities by health status: Sendai



Figure 4-6-3-2 Prevalence of market and non-market activities by health status: Kanazawa



Figure 4-6-3-3 Prevalence of market and non-market activities by health status: Takikawa



Figure 4-6-3-4 Prevalence of market and non-market activities by health status: Shirakawa



Figure 4-6-3-5 Prevalence of market and non-market activities by health status: Adachi

Health status in the figure refers to physical functioning measured by ADL (Activities of Daily Life). We divide the sample into those who have no difficulty in the ADL items and those with at least one item with which a respondent has difficulty. First, we observe that the proportion of males who are working is smaller for those with limitation of physical functioning except Takikawa. There is no clear pattern between physical functioning and probability to work. In contrast, in three municipalities, the proportion of females who are working is larger for those with limitation of physical functioning. Moreover, the share of females who are engaged in non-market activities is also larger for those with any functioning limitation. As seen above, the share of workers is larger than in European countries even if a person suffers from any physical limitation. The results on females are somewhat counter-intuitive, and need further investigation.

### 4.6.3 Conclusions

- Activities of those aged 55 to 75 show a remarkably stable relationship among four out of five municipalities in JSTAR. About 20% engage in hobbies, 15% in community activities, 10% in volunteering, 10% in sports, 5%-9% in learning, and less than 5% in religious activities, providing help to others, and also politics.
- Market work in Japan is much higher and activities to provide help to others are much lower than SHARE countries. This is true for both men and women and common across all municipalities in JSTAR data.



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