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Special Edition

A Statistical Approach to Labor Issues in Japan

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EDITORIAL OFFICE
The Japan Institute for Labour Policy and Training
International Affairs Department
8-23, Kamishakujii 4-chome, Nerima-ku, Tokyo 177-8502 Japan
TEL: +81-3-5903-6315 FAX: +81-3-3594-1113
Email: jlr@jil.go.jp
Homepage: http://www.jil.go.jp/english/index.html
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CONTENTS

A Statistical Approach to Labor Issues in Japan

Articles

Article Based on Research Report

NEXT ISSUE (Winter 2014)

The winter 2014 issue of the Review will be a special edition devoted to **Mental Health Disorders in the Workplace**.

Introduction

A Statistical Approach to Labor Issues in Japan

When the international community turns its attention to Japan, the language barrier remains as impenetrable as ever. Regrettably, the same is true when it comes to statistical information, so vital when exploring a range of social issues. True, statistical agencies and academic sources have become more positive about issuing information in English in recent years. Nevertheless, this still tends to involve merely converting pre-existing Japanese-language information into English as and when it appears. English and Japanese speakers often take different positions when approaching issues; in many cases, transmitting information in English is expected to involve presentations from each speaker's viewpoint. At such times, pure translation of Japanese information can create a breeding ground for misunderstanding.

In this issue, studies summarizing how various concepts related to Japanese labor issues are reflected in statistics have been re-edited and published with additional material for the benefit of English-speaking readers. Eight themes are presented, namely solitary non-employed persons, leisure, wages, satisfaction levels, suicide, non-regular labor, labor movement and employment of new graduates.

In "Solitary Non-Employed Persons," Yuji Genda explains a concept proposed by the author himself as an approach to analyzing non-employment. Although measuring employment situations is the primary mission of labor statistics, international standards guided by the ILO have already been determined for the concepts of unemployment and non-employment. The Labour Force Survey conducted by Japan's Ministry of Internal Affairs and Communications (MIC) is also in line with ILO standards. Meanwhile, OECD and other international bodies publish figures that are open to international comparison, with coordinated concepts of measurement. Compared to these situations of employment and unemployment, analysis on the situation of non-employment after leaving the labor market has not progressed. The concept of NEETs in younger age groups was proposed in the 2000s, leading to a better understanding of their non-employment situation. However, there was an undeniable tendency for this to be regarded as a problem peculiar to younger age groups. Genda proposes the new concept of "Solitary Non-Employed Persons" based on the Survey on Time Use and Leisure Activities, a time use survey conducted by the MIC. He points out that some groups of people in non-employment situations are isolated from society. The author defines Solitary Non-Employed Persons as "Non-employed persons who are aged over 20 and 59 or less, who are not married or engaged in study, who are normally completely alone or who do not spend time with people other than their family," and reports that people of this description have tended to increase since the 1980s, reaching 1.62 million as of 2011.

In "Leisure," Sachiko Kuroda describes how non-working hours, a topic of growing

interest in recent years, are perceived in Japanese statistics. Many developed nations conduct time use surveys on types of activity undertaken within the 24 hours of one day; in Japan, the Survey on Time Use and Leisure Activities (MIC) and the Japanese Time Use Survey (NHK) are available for this purpose. Previously, labor research was focused on working hours, and many labor statistics were designed to gather information on hours actually worked. Since the 1990s, on the other hand, a need has also been seen to consider the work-life balance and other aspects of the balance between work and non-work. Kuroda draws particular attention to hours of sleep, and discusses a tendency for average hours of sleep by the Japanese to decrease and their hours of activity to extend ever deeper into the night.

In "Introduction to Wage Statistics in Japan," Daiji Kawaguchi summarizes wage trends in Japan, drawing primarily from two statistical surveys by the Ministry of Health, Labour and Welfare (MHLW) (Basic Survey on Wage Structure and Monthly Labour Survey) and one by the National Tax Agency (Statistical Survey of Actual Status of Salary in the Private Sector). Even without referring to examples in the United States, information on wages has traditionally been gathered as part of income appraisal based on household surveys. In recent years, however, basic data such as employers' payroll registers and employment insurance contributions have come to be used as administrative data from various countries have become more available. A characteristic of Japan is that payroll register information has traditionally been collected; the various statistics mainly dealt with here by Kawaguchi also belong to this scheme of things. However, caution must be exercised over the tendency to limit survey targets (for example, the exclusion of small businesses and the "self-employed stratum," as a constraint on business establishment statistics). In fact, as this paper points out, the two surveys by the MHLW have no information from businesses with fewer than 5 employees; in order to complement these, other statistics must be used in combination. Even so, all of the statistical sources reflect a decreasing trend in wages since 1997, and this is explained as a general trend in Japan's labor market as a whole.

In "Satisfaction Levels (Qualitative Data)," Akihito Toda introduces statistics reflecting people's subjective evaluation of society. Even in labor research (for example, in the fields of economics and labor law), discussion has mainly focused on "objective" working conditions, such as wages and working hours. With the expansion of academic disciplines in recent years, however, emphasis has also come to be placed on the actual mental state of workers. As Toda points out, although the Cabinet Office has conducted its National Survey of Lifestyle Preferences over a relatively long period as a Japanese statistical source in this field, this could be said to have been developed under the guidance of researchers and the private sector, rather than as official statistics of the government. If we recall the problem of comparisons between individuals in subjective evaluation, we may easily imagine the limits of analysis using simple cross-section data; it would then be only natural that so much of this subjective information has been incorporated in the panel data developed rapidly under guidance by researchers in recent years. Nevertheless, according to Toda,

levels of satisfaction in society by the Japanese public are in a decreasing trend, and this is an important point in ascertaining broad trends in Japanese society.

In the following "Statistics on Suicides of Japanese Workers," a joint paper by Yasumasa Otsuka and Yuji Horita, the authors provide statistical information on workers' physical and mental health around the key issue of suicide. It is often reported that suicides increased sharply around 1998 in Japan, and are now at a level in excess of 30,000 per year. The gravity of this will be clear if we consider that annual road deaths in Japan have numbered fewer than 5,000 recently. However, as outlined by Otsuka and Horita, caution is required, since there are subtle differences between suicide trends in the crime statistics of the National Police Agency (NPA) and the population statistics of the MHLW. According to the NPA crime statistics, the motive for suicide is attributed to health problems in nearly half of all cases; it is difficult to ascertain to what extent these involve "*karojisatsu*" (suicide induced by overwork), whereby workers in active employment are driven to suicide following a breakdown in their mental health. Nevertheless, data on industrial accidents suggest that these suicides due to overwork are steadily increasing in number, and the authors highlight the need for careful analysis using multiple statistics.

In "Differences in Definitions of Non-Regular Employees in Government Statistics," Ryo Kambayashi discusses non-regular labor, a characteristic of Japan's labor market in recent years. For English-speaking readers, much of the difficulty in understanding the discussion on non-regular labor arises from its very definition. Kambayashi cites the three main Japanese definitions of non-regular labor, namely definitions based on the "length of the labor contract," "workplace title or description" and "working hours," respectively. He then statistically examines the relationships between these and warns that both the numbers involved and the tendency to increase differ completely, depending on the definition. The author also points out that "workplace title or description" is an important factor in deciding significant working conditions, i.e. wages and workplace training, and that "length of the labor contract" is not necessarily such an important determinant. This differs significantly from the situation in Europe, where non-regular labor is mostly defined by fixed-term labor contracts; the author suggests that Japanese-style employment practices related to personnel management, among others, lie behind this.

Masahiro Abe's study on "Labor Turnover and Movement" is useful as a source of information for understanding how active Japan's labor market is. There is a stereotype that labor movement through the market is sluggish in Japan, but to what extent can this be confirmed statistically? Abe mainly focuses his study on the Labour Force Survey, a household survey by the MIC, and the Survey on Employment Trends, a business establishment survey by the MHLW. From the former, the author extrapolates the labor force flow describing temporal trends in the employment situation, and from the latter, clarifies the job accession rate and separation rate.

Finally, Mitsuko Uenishi's "Employment of New Graduates" is a study on the collective hiring of new graduates, a characteristic of Japanese employment practices. In Japanese

companies, where the emphasis is on long-term employment, new employees hired immediately after graduation follow different career paths compared to those who already have employment experience and are hired in mid-career. Priority is often placed on the former as future management candidates. Uenishi summarizes this point by referring to the School Basic Survey by the Ministry of Education, Culture, Sports, Science and Technology. Among other findings, the author points out that career choices for new graduates are highly uncertain up to the point of graduation, and that those who ultimately fail to find employment are too numerous to be ignored. The author also expresses concern that government statistics are preoccupied with information on fields where universities, senior high schools and other state or public institutions play a pivotal role, but do not adequately account for graduates from vocational colleges and other institutions, which now growing in importance.

As the above descriptions illustrate, this issue provides a brief summary on how topics recently attracting attention in labor research are reflected in Japanese statistics. The statistics cited are basically in the public domain, and include commentaries in English. Interested readers are therefore invited to refer directly to the original data.

Ryo Kambayashi
Hitotsubashi University

The Solitary Non-Employed Persons (SNEPs): A New Concept of Non-Employment

Yuji Genda
The University of Tokyo

I. Overview

Solitary Non-Employed Persons (SNEPs) is a new concept that refers to "Non-employed persons who are aged over 20 and 59 or less, who are not married or engaged in study, who are normally completely alone or who do not spend time with people other than their family." According to the time use survey to focus on interaction during two consecutive days nominated randomly, the number of SNEPs rapidly increased in the decade from 2000, reaching 1,620,000 as of 2011 in Japan. A high percentage of SNEPs do not engage in any social activities such as sports, travel, or volunteer activities in the previous year. SNEPs tend to be male, middle-aged and older, junior-high school graduates. However, the tendency for people in their 20's not to become SNEPs has weakened, and the isolation of young unmarried non-employed persons is becoming more serious. SNEPs do not tend to use e-mail and information searches. SNEPs are negative about either job-seeking activities or wanting to get jobs. The increase in SNEPs may be a factor of social instability and fiscal burden, such as the further increase in welfare recipients, and urgent policy responses are required such as public programs for generating skilled supporters who can outreach to SNEPs.

II. Introduction

Japan has finally entered the age of full-fledged, irreversible population decline. According to a report by the Statistics Bureau, Japan's estimated population as of December 1, 2012 was 127,492,000. It had declined by 296,000 in the previous year—the largest decline we have ever experienced. Securing the manpower to maintain the vitality of the economy is an urgent issue.

Initiatives such as revamping measures against falling birthrates and expanding acceptance of foreign workers have been proposed to address this issue. However, such initiatives miss an important point. While the average number of workers in Japan during 2012 was 62,700,000, the number of individuals who are not working, or non-employed individuals, has increased to 48,250,000 (this figure excludes those under the age of 15 years).

Before blindly deciding to allow the influx of immigrants or waiting for the number of children to increase when there is no promise for the occurrence of such, something needs to be done. We need to start by tapping non-employed "dormant workers," and having as many of them work as possible as long as they are capable.

In fact, the number of workers over the age of 60 years has been increasing steadily in recent years. However, an unusual change is now occurring among non-employed people who are in their prime age.

III. Solitary Non-Employed Persons (SNEPs)

The Survey on Time Use and Leisure Activities (STULA) has been conducted by the Statistics Bureau of Japan's Ministry of Internal Affairs and Communications every five years since 1976, in order to understand the daily time usage and behavior of the people.

In this survey, approximately 200,000 subjects answer questions related to "what they did, with whom, and for approximately how many minutes" during a specified period of 48 consecutive hours during the two consecutive days randomly surveyed. Through the results of this survey, the details of everyday life among individuals who do not normally work are elucidated.

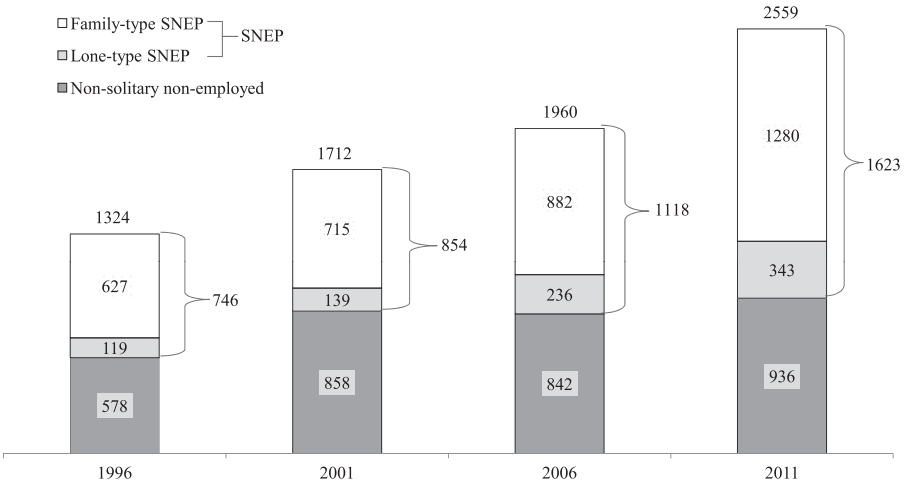
The author has devised a new definition of non-employed persons as stated below by using the micro data from the STULA and investigating their situations.

We call non-employed individuals who meet the following definition "solitary non-employed persons" (SNEPs): "of all unmarried individuals between the ages of 20 and 59 years who are not in school and are unemployed, those who do not usually spend time with anyone other than family members or who spend the entire time alone." This new concept of SNEPs can be measured in most developed countries that conduct the time use surveys examining the activities for randomly selected two days at least as well as Japan's STULA.

The number of SNEPs who do not interact at all with anyone other than family members has been increasing in Japan. Figure 1 shows trends and compositions in the non-employed 20-to-59-year-old unmarried population. The SNEPs can be divided into two categories: family-type SNEPs who have time to spend with family members, and lone-type SNEPs who do not spend time with family members and stay completely alone. The combination of family-type SNEPs and lone-type SNEPs shown in the figure comprises the entire SNEP population.

The number of non-employed unmarried individuals between the ages of 20 and 59 years (excluding those in school) was 1,324,000 in 1996, when the wounds created by the burst of the bubble economy were still somewhat raw. Of those, SNEPs accounted for 746,000 people; about 44% of non-employed unmarried individuals at that time had the opportunity to socialize with friends and acquaintances on at least one day out of the two.

However, in 2001, when the financial recession intensified and the unemployment rate crossed the five-percent mark for the first time in Japan, the number of non-employed prime-aged unmarried persons increased to 1,712,000, and the number of SNEPs jumped to 854,000. While there was a huge increase in the number of non-solitary non-employed persons who interact with friends and acquaintances, the number of SNEPs also increased by



Source: The figure was created from *The Survey on Time Use and Leisure Activities*, Statistics Bureau, Ministry of Internal Affairs and Communications, Japan.
Note: The population includes non-employed, unmarried individuals between the ages of 20 and 59 years (excluding those in school).

Figure 1. Trends in the Non-Employed 20-to-59-Year-Old Unmarried Population (in thousands)

about 108,000 during the period lasting from 1996 to 2001.

After 2002, corporate downsizing due to situations such as write-offs of loans in default began coming to an end, and we saw signs of decline in the unemployment rate. However, the number of non-employed prime-aged unmarried individuals did not decrease even during that economic recovery period. Of all the non-employed persons, the number of unemployed individuals looking for jobs declined; however, the non-labor-force population not looking for jobs continued to grow then.

As seen in Figure 1, the number of SNEPs continued to increase to 1,118,000 in 2006 and finally reached 1,623,000 in 2011. The opposite was true of the number of non-solitary non-employed persons, which decreased from 2001 to 2006, perhaps because of the economic recovery. The increase in these non-solitary non-employed persons from 2006 to 2011 was small compared to that in SNEPs. As a result, about 63% of non-employed people were SNEPs in 2011.

The Ministry of Health, Labour and Welfare defines *hikikomori* (socially withdrawn individuals) as “people who mostly remain at home for more than six months” in their guidelines formulated in 2010. A questionnaire survey conducted by the Cabinet Office in the same year estimated that there were 236,000 *hikikomori*. These individuals fall under the categories of family-type or lone-type SNEPs.

Table 1. Social Activities in the Past 12 Months among the Non-Employed Unmarried Individuals between the Ages of 20 and 59 Years

		Those who did not engage at all in sports, travel, or volunteer work in the past 12 months	
	Estimated Population (in thousands)	Estimated Population (in thousands)	Percentage
All non-employed	2,559	852	33.3%
SNEPs	1,623	665	41.0%
Family-type SNEPs	1,280	485	37.9%
Lone-type SNEPs	343	180	52.4%
Non-solitary non-employed	936	188	20.0%

Source: The table was created from *The Survey on Time Use and Leisure Activities (2011)*, Statistics Bureau, Ministry of Internal Affairs and Communications, Japan.
Note: Estimated populations were rounded to the nearest thousand.

IV. No Social Interactions for over a Year

Some readers may feel that it is rather extreme to label people who did not spend any time with anyone other than family members for just two days as "solitary." Some likely think that seeing no acquaintances for two days has no major significance.

However, that is not the case. In fact, differences in overall daily life among non-employed people can be highlighted rather clearly by focusing on personal interactions during two consecutive, randomly specified days. Indeed, the importance of the SNEP concept lies in the fact that it identified this distinction for the first time.

For example, Table 1 shows the percentage of people who did not engage in sports, travel, or volunteer activities in the past 12 months, according to the STULA conducted in 2011. All of these activities are done by leaving one's home. Of all non-employed, unmarried individuals between the ages of 20 and 59 years (excluding those in school), 33.3% did not engage in these activities in the foregoing 12 months. Among non-solitary non-employed individuals, the percentage was 20.0%. However nearly double that proportion, or 41.0%, of solitary non-employed individuals, did not engage in those social activities in the foregoing 12 months.

In particular, 52.4% of lone-type SNEPs did not engage in those activities. Whether travel, sports, or volunteering, such activities typically include interaction with people. Almost half the number of all lone SNEPs have been cut off from such social interactions for as long as one year.

Notably, not spending time at all with anyone other than family members during the survey period of two consecutive days was not uncommon among non-employed married

Table 2. SNEPs and Their Social Activities among the Several Kinds of Non-Employed Individuals

Several kinds of non-employed individuals	Estimated non-employed population (in thousands)	Non-employed individuals who did not spend time with anyone other than family members in the two consecutive days (in thousands)	(2) as a percentage of (1)	Those who did not engage at all in sports, travel, or volunteer work in the past 12 months	
				Population (in thousands)	(3) as a percentage of (2)
	(1)	(2)	(2) ÷ (1)	(3)	(3) ÷ (2)
Unmarried non-employed (ages 20 to 59 years, excluding those in school) <our analysis population>	2,559	1,623	63.4%	665	41.0%
All non-employed persons (all ages, all marital statuses, including those in school)	41,174	19,805	48.1%	5,669	28.6%
Married non-employed (ages 20 to 59 years)	7,638	4,382	57.4%	536	12.2%
Divorced/widowed non-employed (ages 20 to 59 years)	499	274	54.9%	99	36.2%
Non-employed (ages 60 years or older)	24,260	12,842	52.9%	4,254	33.1%
Teenagers or in school, non-employed	6,292	698	11.1%	114	16.3%

Source: The table was created from *The Survey on Time Use and Leisure Activities (2011)*, Statistics Bureau, Ministry of Internal Affairs and Communications, Japan.
Note: Estimated populations were rounded to the nearest thousand.

individuals in the same age group. Table 2 shows that the percentage of people who did not spend time with anyone other than family members was slightly lower in the non-employed married population overall, than in the non-employed unmarried population. In contrast, the percentage of people who did not engage in travel, sports, or volunteer activities in the past 12 months was only 12.2% among the non-employed married population—less than

one-third of the rate among non-employed singles. Predominantly, non-employed *singles* lose social interactions and become actually isolated; the table also shows that isolation is also a serious issue among non-employed individuals who are divorced or widowed, as well as older people over the age of 60.

V. Who Becomes a SNEP?

The next question is who among non-employed singles in their prime age are most likely to become SNEPs.

First, men are more likely to become SNEPs than women are. This tendency may relate to the notion that males are more prone to becoming socially withdrawn. In Japan, the social norm demanding that individuals be self-reliant is stronger for males, making it harder for them to enter the workforce. The same probably applies to SNEPs.

Age also affects one's chances of being a SNEP. It has been relatively less likely for individuals to become SNEPs in their 20s, when there are many occasions to see friends. The probability for non-employed individuals to become isolated increases after their 30s; The SNEP status has been a more serious problem among middle-aged and older people than among youths.

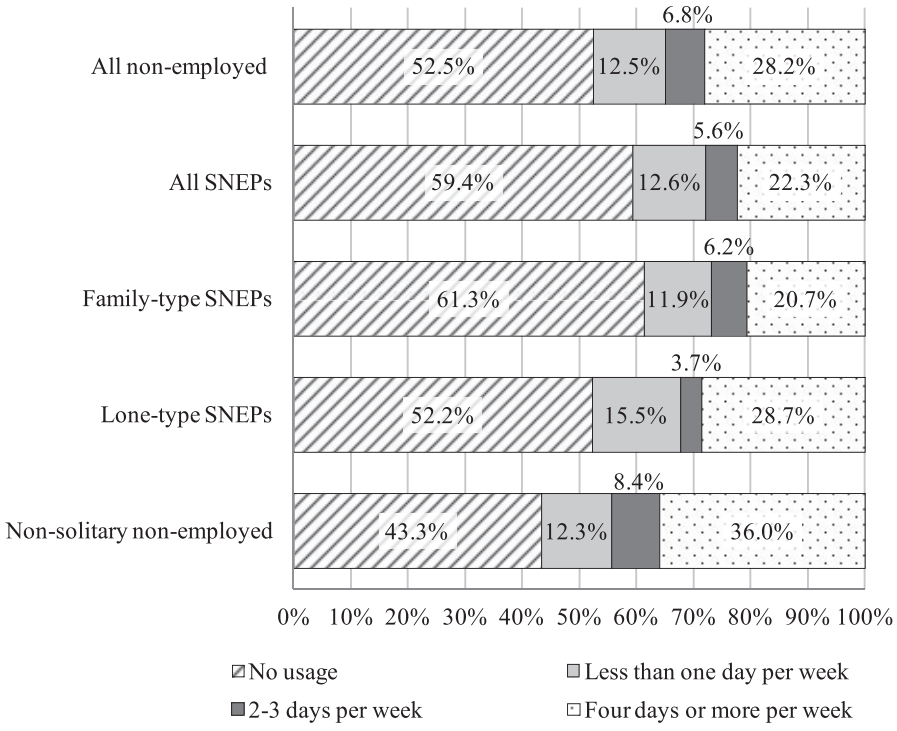
Between 2001 and 2011, however, the most noticeable increase in SNEP percentages was in young people in their 20's. In 2001, the percentage of SNEPs in their 20's, which had fallen to 40.4%, recorded a drastic increase of over 20 points to 62.2% by 2011. SNEPs in their 20's account for approximately 40% of non-employed unmarried people under 60, and the fact that the SNEPs percentage rose in the younger demographic is clearly a contributing factor in the overall increase in SNEPs in the 2000s.

Another factor influencing people's probability of becoming SNEPs is their educational background. There is a definite tendency for those who have only graduated from junior high school including high school dropouts to become SNEPs. High school dropouts often face difficulties developing relationships with friends. Furthermore, the fact that dropping out of school causes previous friendships to wane might have a large impact on this finding. High school dropouts are not only prone to struggle to become non-employed, but also likely to find themselves isolated in life in general.

VI. Everyday Lives of SNEPs

How do people who shut themselves in at home spend their time? Might they be in a state we would call "Internet-dependent" or "Internet-addicted?" Such a concern has become a popular topic of conversation.

However, data from the STULA provides no indication that SNEPs tend to indulge themselves in the Internet or video games for an extended period of time. Even SNEPs who did not engage in sports, travel, or volunteer activities in the past 12 months did not



Source: The figure was created from *The Survey on Time Use and Leisure Activities (2006)*, Statistics Bureau, Ministry of Internal Affairs and Communications, Japan.

Note: The population includes non-employed, unmarried individuals between the ages of 20 and 59 years (excluding those in school). The percentages may not add to 100 because of rounding.

Figure 2. The Frequency of E-Mail Usage

frequently play home video games either. Thus, the notion that SNEPs are isolated from society because they are Internet addicts is not true.

Many SNEPs are not close to being Internet addicts—they do not even use e-mail (including cell-phone texting). Some readers may expect everyone to use e-mail; however, as shown in Figure 2, over half of non-employed individuals do not use e-mail. The use of email is especially low among SNEPs, and in particular, about 60% of family-type SNEPs do not use e-mail at all. SNEPs are isolated—not just in their daily lives, but also in the virtual world of the Internet.

SNEPs are often not eager to utilize or obtain information on the Internet. 58.4% of SNEPs did not search or obtain information on the Internet, at least as of 2006. The rate of Internet use is also the lowest among family-type SNEPs.

Instead of the Internet, SNEPs tend to simply watch TV. They spend long hours watching TV because it does not cost money and occupies their time. It is rare for SNEPs to

focus on any certain type of study or research. Meanwhile, SNEPs sleep as much as they watch TV. Compared to non-solitary non-employed individuals, SNEPs are not particularly more likely to be under medical treatment due to illness or injury; they end up sleeping long hours simply because they cannot find anything else to do (however, some SNEPs spend very long hours for medical treatment although they are not so many.) As they continue to distance themselves from the society, they become less engaged in every type of activity.

VII. SNEPs and Work

There are various attitudes toward work among non-employed individuals. Many of them wish to work and aggressively look for jobs by going to the government employment service center, which is called Hello Work, or private job placement companies. Some ask acquaintances for referrals or directly contact companies. On the other hand, there are people who are unable to take specific action for certain reasons although they do wish to become employed, and there are also people who do not wish to work at all.

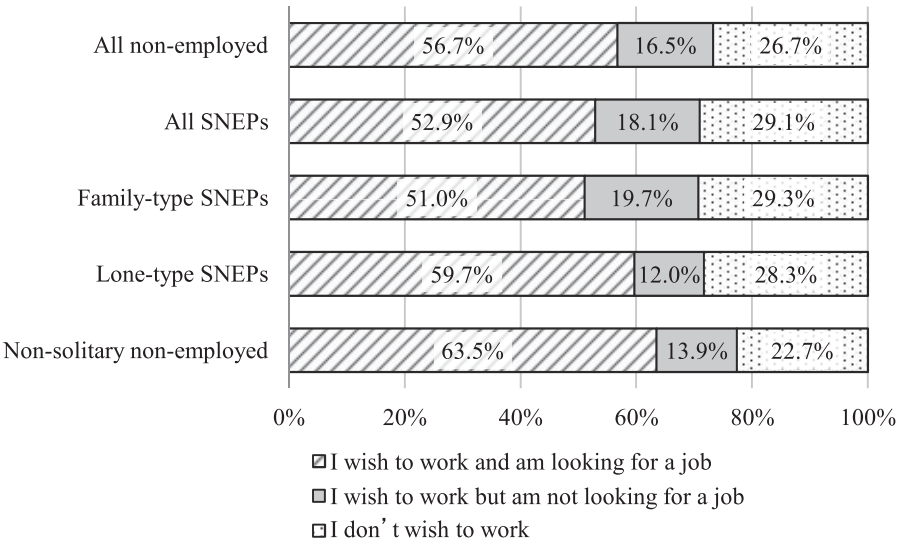
Figure 3 illustrates job search activities and the desire to work by type of non-employed primed-aged individual. Overall, more than half the number of non-employed primed-aged people desire to work, and are actually looking for jobs. One-fifth of the non-employed population wants to work but are not looking for jobs; one-fourth do not wish to work at all.

Meanwhile, non-solitary non-employed individuals who interact with friends and acquaintances are more eager to work: 63.5% of these are searching for jobs. Some can ask acquaintances to help them find jobs. They might also become interested in work or obtain knowledge regarding the job search process through conversations about work with their friends.

In contrast, SNEPs have been placed in a situation that is far from work. Figure 3 illustrates that the percentage of people who are actively looking for jobs is almost ten points lower among SNEPs compared to non-solitary non-employed individuals; for SNEPs, who are passive towards life in general, job search activities also tend to stall. The increase in the non-labor-force, that is those who do not search for jobs, among primed-aged population in recent years has been driven largely by the increased number of SNEPs.

Family-type SNEPs are an especially serious issue. Lone-type SNEPs are often desperately looking for jobs in order to make a living. However, the proportion of those actively pursuing jobs is considerably lower among family-type SNEPs, who spend time with their families and are often protected by them. Thus, the motivation to become employed itself is already weak among family-type SNEPs. It is possible that the generous protection of family hinders the prospects for employment to result in independence for family-type SNEPs.

It is highly likely that SNEPs are driving the growing number of welfare recipients in Japan. Unless we halt the rise in the number of SNEPs, higher social security costs due to



Source: The figure was created from *The Survey on Time Use and Leisure Activities (2011)*, Statistics Bureau, Ministry of Internal Affairs and Communications, Japan.

Note: The population includes non-employed, single individuals between the ages of 20 and 59 years (excluding those in school). The percentages may not add to 100 because of rounding.

Figure 3. Job-Search Activity and Desire to Work

increased welfare will become more difficult to avoid in the future. Family-type SNEPs currently do well in general, because they still have families who can support them. However, after their aged parents pass away, they will be left in a serious situation unable to make their own living.

VIII. Discussion

What is required to halt the increase in the number of SNEPs? The "outreach" is required to meet this end. By "outreach," we mean support initiatives in which care providers are sent to visit the homes of people who cannot travel to medical or welfare facilities despite their need for care. A supporter visiting a *hikikomori* at home to help him/her and his/her family members is another form of outreach.

Observing and measuring SNEPs is difficult because SNEPs do not make any contacts with others. Apart from the fact that there are limited opportunities to meet them in person, they also encounter difficulties providing information via the Internet. That is why we need to set up "encounters." As long as SNEPs themselves cannot come forward for help, others must encourage them to seek help or skillfully "meddle in."

The Ministry of Health, Labour and Welfare is currently working on a "Local Youth

Support Station Business," in cooperation with the local government. It provides comprehensive support aiming to help non-employed young people with issues related to work in order for them to become vocationally independent. As of May 2013, they have established 149 Support Stations throughout the country and launched a wide variety of support activities such as technical consultation, provision of support programs, and referrals to Hello Work. Outreach is another activity of the program; they are currently providing support through home visits in many locations throughout the country. In particular, they focus on home visits for high school dropouts.

To halt the increase in the number of SNEPs, securing people with technical knowledge and experience in handling outreach, and training such people is more important than anything else. Tenacious negotiation and delicate support skills are required in order to conduct support outreach targeting SNEPs and their families.

In order to mitigate the increase in social security costs, it is necessary to allocate an appropriate budget to develop support personnel who have practical knowledge and experience to handle outreach. It is also necessary to develop public programs for generating skilled supporters. The details of such "support for supporters" needs to be considered and translated into official policy as soon as possible.

This short paper has highlighted the grave realities of non-employed individuals who are becoming isolated. Do everything possible to stop increasing isolation among non-employed individuals. Unless we expand such efforts steadily, we will be unable to end the decrease in the number of working individuals in their prime age.

Leisure

Sachiko Kuroda
Waseda University

I. Introduction

Some people may think leisure is the time left over after market work is subtracted from the 24 hours in a day. From this standpoint, it may be questionable whether statistics on leisure per se need to be collected at all. However, we spend considerable amounts of time on other activities besides market work such as housework, child care and nursing care. This means that if outsourcing and more advanced household appliances help to reduce the amount of time spent on household labor, it is possible for leisure to increase even if hours spent on market work also increase.[1] On the other hand, when an aging society causes more people to cut market work so as to care for family members, the decrease in working hours may appear to improve work-life balance, but if the people in question are spending the bulk of their time providing nursing care, they may have little or no actual leisure time.

In recent years there has been a lively debate over what sorts of statistics should be collected in order to assess quality of life (for example, Stiglitz, Sen, and Fitoussi [2009], OECD [2011, 2013]). Researchers have varying opinions on whether there is any viable replacement for the GDP (gross domestic product), which has long been the conventional yardstick for prosperity, and on whether it is necessary or appropriate to attempt to quantify happiness. Few would deny that GDP statistics alone do not provide a complete picture of public well-being. For instance, countries where the income effect has led to a decrease in time spent on market work, and people devote a portion of the economic benefits they have reaped to leisure-time activities that do not entail consumption, will lag in terms of GDP behind countries where continually increasing working hours fuel rising consumption. However, the former may well be ahead in terms of well-being. Thus, researchers who examine only statistics on market work to gauge public well-being may end up with a distorted picture of reality. In the future, as we seek to improve quality of life at all levels of society, it will become ever more important to perform comprehensive, multifaceted measurements and examinations of people's lifestyles.

With this in mind, section II examines Japanese statistics useful in assessing leisure from multiple angles, and section III discusses the types of information that can be gleaned from time-use surveys, the most frequently employed method of collecting leisure statistics.

[1] See, for example, Aguiar and Hurst (2007). In Japan, Kuroda (2010) found that while women's weekly market work remained virtually unchanged between 1986 and 2006, weekly hours spent on household labor fell by three hours over the same period, indicating that women's leisure per week increased by three hours.

II. Statistics on Leisure

This section introduces two methods of measuring leisure. One is to measure leisure over shorter units of time, such as one day or one week, while the other measures relatively longer periods of time such as one month or one year.

1. Leisure Time in One Day or One Week

The statistical method most often used to measure leisure is the time-use survey. A time-use survey reports data on how individuals spend their time within a 24-hour period. Generally the day is divided into 10- or 15-minute blocks, and the subjects write the activities they engaged in during each of those blocks. The resulting data is sometimes referred to as time diary data, as the survey resembles a diary of time use. There are two types of time-use surveys, one employing a pre-coding system (multiple-choice style) in which respondents select the type of activity from a list of options prepared in advance, and the other employing an after-coding system (free-answer style) in which respondents write freely on the questionnaire and their responses are then classified according to predefined criteria and assigned a code during tabulation.

In Japan, the Bureau of Statistics of the Ministry of Internal Affairs and Communications has been conducting a survey known as the Survey on Time Use and Leisure Activities since 1976. It is conducted every five years, in the year following the national Population Census (also conducted by the Ministry of Internal Affairs and Communications), and two types of questionnaires are currently in use: Questionnaire A, using a pre-coding system, and Questionnaire B, using an after-coding system. Below is a brief explanation of the characteristics of Questionnaires A and B.

With Questionnaire A, 6,000 or 7,000 “enumeration districts” (blocks of 50 or so households) are selected out of the nearly one million districts demarcated for the Population Census, and from these, between 200,000 and 270,000 individuals aged 10 and up (until 1991, aged 15 and up) from between 70,000 and 100,000 households are selected. The scale of the survey is quite large, though the number of households and individuals varies from year to year. This survey was first conducted in 1976, and then in 1981, 1986, 1991, 1996, 2001 and 2006. The latest available survey data is from the eighth survey in 2011. With the exception of the 1981 survey,[2] all surveys were conducted over a nine-day period from late September to October, with each enumeration district assigned two consecutive days during which each individual respondent was to keep track of his or her own activities. This means the total number of samples (each covering a 24-hour period) is approximately double the number of respondents. All days of the week are covered, so with a sufficient number of samples, the data can be used to assess meta-patterns over a one-week period as

[2] The 1981 survey was conducted over only three days, October 1 (Thursday), October 3 (Saturday), and October 4 (Sunday), and each household was only asked to keep track of its activities for a single day.

well.

In addition to the large-scale survey using pre-coded Questionnaire A, since the sixth survey in 2001 a survey using after-coded Questionnaire B has been performed as well. It is a smaller survey, covering approximately 10,000 individuals. However, Questionnaire B has advantages in that it features a greater number of more precisely defined activity categories allowing more detailed monitoring of time use, and it is well suited to international comparisons of time use patterns, as the majority of time use and leisure activities surveys conducted overseas employ the same type of after-coding system.[3] Also, while Questionnaire A tabulates only the "primary activity" when the respondent is engaged in two or more activities at once, Questionnaire B allows for simultaneous activities, and is also geared toward contemporary lifestyles with survey items such as whether or not the activity in question entails Internet use. Thanks to these two types of surveys, Japan possesses a wealth of statistics on time use. The data from pre-coded Questionnaire A enables chronological tracking of time-use trends since the 1970s, while Questionnaire B provides more in-depth information and enables international comparisons. Detailed information on the Survey on Time Use and Leisure Activities and survey results can be viewed on the Bureau of Statistics website (http://www.stat.go.jp/english/data/shakai/index.htm).

Questionnaire A designates a total of 20 time use classifications. These are: sleep, personal care, meals, commuting to and from school or work, work, schoolwork, housework, caring or nursing, child care, shopping, moving (excluding commuting), watching TV, listening to the radio, reading newspapers or magazines, rest and relaxation, learning, self-education, and training (except for schoolwork), hobbies and amusements, sports, volunteer and social activities, social life, medical examinations or treatments, and other activities. In addition to time use, it tabulates other basic data such as respondents' age, educational background, marital status, number of children (if any), number of members in household, and household income (from the 2011 survey onward, a separate entry is provided for individual income), number of employees in workplace, occupation, general health condition, and number of hours worked per week.

On the basis of these categories, "work" and "commuting to and from work" are designated as market work, while "housework," "caring or nursing" and "child care" are designated as household labor, with time spent on the remaining 15 categories deemed to be leisure time. When respondents engage in cooking or gardening as a hobby, in some cases it is difficult to judge whether these activities constitute household labor or leisure time, but the pre-coding system employed in Questionnaire A calls on respondents to designate the activities in question as either "housework" or "hobbies and amusements," meaning that classification difficulties can be avoided to a certain extent.

[3] These include the American Time Use Survey (http://www.bls.gov/tus/) conducted by the U.S. Bureau of Labor Statistics, and the Harmonized European Time Use Survey (https://www.h2.scb.se/tus/tus/Default.htm), designed to allow the greatest possible ease of comparison between 15 European nations.

In Japan, in addition to the governmental statistics, there is another time-use survey, the NHK Japanese Time Use Survey (conducted by the national public broadcaster NHK). This survey was launched in 1941 to keep track of trends among radio listeners, modeled on a survey conducted by the British Broadcasting Corporation (BBC) in the UK. Since then it has been carried out every few years, and is a highly valuable source of data on the Japanese public's time use prior to the 1970s.[4]

2. Leisure Time in One Month or One Year

Leisure time can also be measured in terms of the number of vacation days or periods of leave taken within longer periods such as one month or one year. The following paragraphs discusses statistics on number of vacation days or periods of leave taken within these longer periods.

In Japan, the most frequently cited source of public statistics on vacation days and periods of leave is the General Survey on Working Conditions conducted by the Ministry of Health, Labour and Welfare. Carried out annually since the 1960s, albeit under different names, the survey brings together a range of statistics on wage systems, work time systems and related topics, serving as a valuable resource for tracking the progression of vacation-day data over the years. The General Survey on Working Conditions provides information on the number of paid vacation days allotted per year and the number actually used, number of days off per week, and special leave systems (such as volunteer service leave and refreshment leave.) Figures cited for the percentage of annual vacation days actually used in Japan are generally derived from the results of this survey.

However, this survey's scope is limited to enterprises with at least 30 regular employees, and there are some caveats regarding its results. The vacation day usage rate is calculated by dividing the total number of vacation days actually taken by full-time employees by the total number of vacation days allotted to them, meaning that the outcome only indicates the average for all workers. This means that if the figure for percentage of allotted vacation days actually used stands at 50%, it is impossible to judge whether all workers are roughly equal, taking about half of their allotted vacation days, or whether there is a polarity with around half of them taking nearly 100% of the days while the other half take almost none. Also, while the number of companies providing a five-day work week has been increasing since the late 1980s, some employers may call on employees to work on their days off during extremely busy periods, but this state of affairs is not reflected in the survey results.

For these reasons, to gain a clear picture of vacation days and leave periods at the individual level, it is necessary to amass statistics on households and individuals in addition to

[4] However, it is necessary to exercise caution when examining data from the NHK Japanese Time Use Survey chronologically, as in some survey years, all the time people spend on various activities is added up even when they are engaged in two or more activities at once, meaning that in these survey years the number of hours in a day adds up to more than 24 hours.

corporate surveys and employment system surveys like the one described above. However, until recently, public household-by-household statistics on individuals' number of vacation days or periods of leave have been largely unavailable. To address this, a survey item on annual number of vacation days taken was added to the Survey on Time Use and Leisure Activities in 2011. In addition, in January 2013 the new survey items "Number of days worked during the final week of the month" and "Number of days worked per month" were added to the Labor Force Survey (conducted by the Bureau of Statistics of the Ministry of Internal Affairs and Communications), which will enable tabulation of individuals' number of days off per month. Until now, Japan has lacked public statistics on number of vacation days for any period shorter than a year, but with the new Labor Force Survey items, it will be possible to assess the number of days off Japanese people take per week or per month.

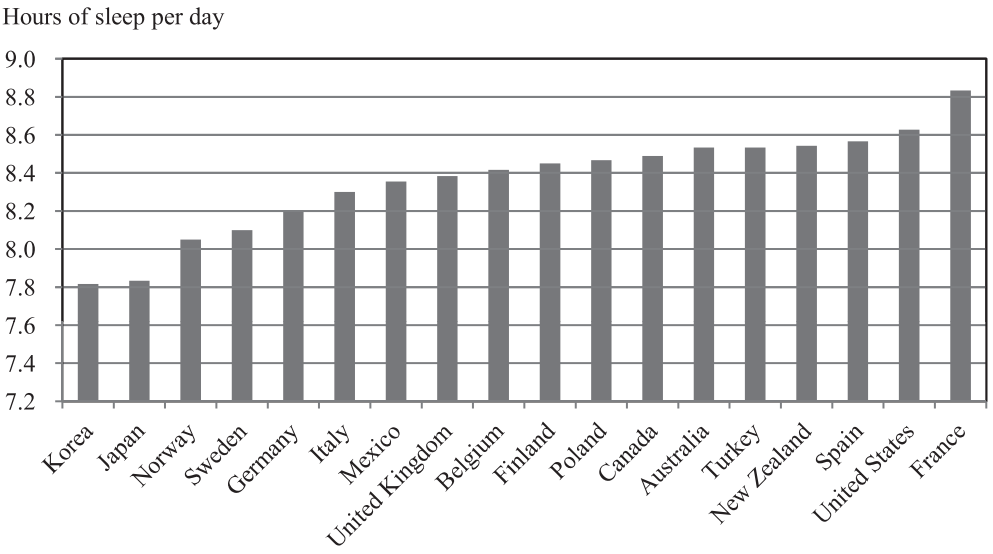
It should be noted that as in Japan there are no provisions for sick leave separate from paid vacation leave, it is common for workers to use paid vacation days when they have colds or other brief illnesses. This means that to gain a more accurate picture of public well-being, in the future it will be necessary to consider gathering statistics that divide vacation day use into pure leisure, such as travel, and sick days or other non-leisure applications.

III. Other Leisure-Time Indicators

The remainder of this article discusses various aspects of leisure, besides the total amount of leisure, which can be gauged from the results of time-use surveys.

1. Breakdown of Leisure Time Use

The results of time-use surveys tell us not only about change in the total amount of leisure time taken, but also in how people use it. For example, Kuroda (2010) examined individual data for the "sleep" category, which is one of the classifications of leisure time in the Survey on Time Use and Leisure Activities, and reported that Japanese people's average hours of sleep have been trending continually downward since the 1970s. Compared to 30 years ago, the average Japanese man sleeps four fewer hours per week, and the average Japanese woman sleeps three fewer hours. There is also a report (OECD 2009) that compares average hours of sleep internationally, an excerpt of which is shown in Figure 1. The figures should be viewed with reservations, as countries differ in various aspects such as population demographics, but they show Japan's average hours of sleep as the second shortest, after South Korea, out of 18 countries, with Japanese people sleeping approximately one hour less per day than people in countries with the longest sleeping hours. The data on Japan in the OECD report comes from the Survey on Time Use and Leisure Activities, and this is an example of how time-use survey data can be used to make international comparisons. Cross-referencing statistics like these with public welfare statistics on health conditions and so forth is seen as an effective means of gauging the impact of time use patterns on public health.



Source: OECD (2009).

Note: Prepared on the basis of time-use survey data from each country available as of 2006. Note that in France the definition of sleep differs somewhat from that of other nations, as long break periods are included in sleep time.

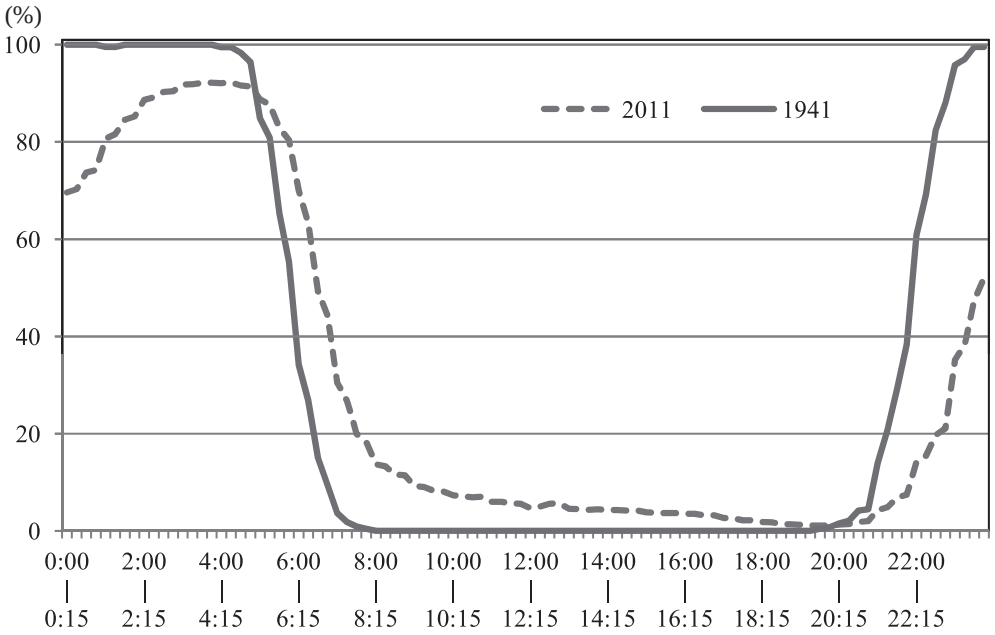
Figure 1. International Comparison of Average Daily Hours of Sleep

2. Times of Day When Activities Are Conducted

To obtain a statistical picture of public well-being, it is essential to track not only the total amount of leisure time people have, but also what activities they engage in at what times of day. As previously stated, the length of time Japanese people sleep has been trending downward for several decades, but has the timing of day when people sleep changed as well? As we can see in Figure 2, which compares the percentages of people sleeping at certain times of day[5] as measured by the 2011 Survey on Time Use and Leisure Activities and the 1941 NHK Japanese Time Use Survey, people's lifestyles have drastically changed over the last 70 years.

Also, information related to work time systems (including flextime systems and discretionary work systems, etc.) has been newly included in the 2011 Survey on Time Use and Leisure Activities, and it is now possible to analyze the effects different work time systems have on behavior at various times of day, as well as on household labor, leisure time use patterns and so on.

[5] The NHK Japanese Time Use Survey (November 1941) limits people to one primary activity at a time and ensures that the lengths of time spent on various activities in a day will add up to 24 hours. In terms of survey timing it is similar to the Survey on Time Use and Leisure Activities, which is conducted each time in or around October.



Sources: *1941 NHK Japanese Time Use Survey* (NHK), *2011 Survey on Time Use and Leisure Activities* (Bureau of Statistics, Ministry of Internal Affairs and Communications).

Note: Both surveys sample men of working age on weekdays (1941: aged 30–45, 2011: aged 30–39).

Figure 2. Percentage of People Asleep, by Time of Day

3. Who People Spend Leisure Time with

Who people spend their leisure time with has a major impact on their quality of life. From the results of the Survey on Time Use and Leisure Activities it is possible to see with whom people engaged in various activities. Based on this information, Genda (2013) ascertained that in Japan the number of SNEP (Solitary Non-Employed Persons, defined as "people aged 20–59 who are not undergoing education, are unmarried and unemployed, and have no social contacts to speak of outside their families") has topped 1.6 million, an increase of over 500,000 since 2006. In Japan, as in many other countries with a low birthrate and aging population, the number of single-person households is expected to continue growing. Henceforth it will be necessary to turn attention to indicators such as these in order to gain an accurate picture of public well-being.

References

Aguiar, Mark, and Erik Hurst. 2007. Measuring trends in leisure: The allocation of time

over five decades. *Quarterly Journal of Economics* 122, no. 3:969–1006.

Genda, Yuji. 2013. Koritsu mugyosha (SNEP) no genjo to kadai [current status and challenges surrounding solitary non-employed persons (SNEP)]. Institute of Social Science, the University of Tokyo.

Kuroda, Sachiko. 2010. Do Japanese work shorter hours than before? Measuring trends in market work and leisure using 1976–2006 Japanese time-use surveys. *Journal of the Japanese and International Economies* 24, no. 4:481–502.

OECD (Organisation for Economic Co-operation and Development). 2009. *Society at a glance 2009: OECD Social Indicators*. Paris: OECD. http://www.oecd-ilibrary.org/social-issues-migration-health/society-at-a-glance-2009_soc_glance-2008-en.

———. 2011. *How's life? Measuring well-being*. Paris: OECD Publishing.

———. 2013. *OECD guidelines on measuring subjective well-being*. Paris: OECD Publishing.

Stiglitz, Joseph E., Amartya Sen, and Jean-Paul Fitoussi. 2009. *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Commission on the Measurement of Economic Performance and Social Progress, http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf.

Introduction to Wage Statistics in Japan

Daiji Kawaguchi
Hitotsubashi University

I. Introduction

The gender pay gap in Japan narrowed with the average wage of women reaching 70% of that of men, the *Nihon Keizai Shimbun* reported in February 2012.[1] We often see these kinds of news reports on wage trends, and when you open a labor economics textbook you will probably see a chart of long-term wage trends. There are approximately 55 million wage workers in Japan. How is their average wage calculated? Some people may think that the government, which collects taxes and therefore should know how much individual workers earn, calculates the average wage based on such income amounts. It may be surprising, but a database that would enable such calculations is not available in Japan, where a taxpayer identification number system is not yet in place. As such, average wages and other pertinent figures are calculated based on statistical survey data.

In this article, I would like to introduce some major statistical surveys conducted by the Japanese Government on wages. Since these surveys are all based on randomly-selected probability samples, average wages calculated from their collected data do not represent the average wage of the entire population of wage workers in Japan. Therefore, the average wage and wage distribution of a sample are subject to deviations from those of the entire population of wage workers, depending on which individuals are selected into the sample. In statistics terminology, such deviations are called "sampling error." In the case of the government statistics on wages to be introduced in this article, the problem of sampling error is not so serious, because samples used in the surveys include a large number of workers. What is more important is to understand the process in which statistical data is collected, and because of that process, what types of wage workers may be excluded from the samples to cause deviations. We call this type of deviations "non-sampling error."

In statistical surveys, information is collected by means of questionnaires, which are typically delivered by hand or downloaded in the Excel file format by individual respondents, who would complete the questionnaires by filling in their answers or entering selected item numbers. Thus, in order to clearly understand exactly what is being surveyed, it is also important to look at how the questions in the questionnaire are worded. By imagining how and in what process raw data are collected and processed into final data, you can have a better idea of the implications of statistical figures you handle. Those who have just started studying labor economics often fail to pay attention to basic questions concerning statistical

[1] "Danjo no Chingin Kakusa Saisho—Sakunen no Josei Heikin, Dansei no 7 wari ni [Gender pay gap shrinks to record low with average wage for women reaching 70% of that of men last year]," *Nihon Keizai Shimbun*, February 12, 2012.

figures, i.e., what kind of survey they are derived from and how they are calculated. It is important to start by looking at the very basics.

Before explaining specific government statistics, I would like to touch on the question of the time frame in which to measure wages, i.e., an amount paid to employees in return for their work. In Japan, full-time permanent direct employees usually receive salaries fixed on a monthly basis, whereas others such as part-timers and casual workers are typically paid on an hourly basis. Because of the presence of the two different time units, it is necessary to adopt a uniform time frame in measuring wages. In many cases, wages are measured on an hourly basis. Hourly wages are also referred to as hourly wage rates. The hourly wage for an employee paid on a monthly basis can be calculated by dividing the monthly salary by the number of hours worked per month. The use of such hourly wages enables a comparison of wages between full-time permanent direct employees and others, and solves problems that may arise from the fact that working hours differ even among full-time permanent direct employees. However, in order to calculate hourly wages, statistics need to include data on the number of hours worked per month or per year, along with those on monthly or annual wages.

It is also necessary to take bonuses into account when considering wages for full-time permanent direct employees. On average, Japanese full-time permanent direct employees receive bonuses equal to 2.7 months' salary per year. Suppose someone receives bonuses equal to three months' salary per year. This means that 20% of his or her annual income comes from bonuses. Ignoring the amount received in bonuses would significantly underestimate his or her wage level. Given the fact that the ratio of bonuses to yearly earnings tends to be higher for men than for women, ignoring bonuses would also result in the underestimation of the gender pay gap. Likewise, the wage gap by age would be underestimated as well because the bonus ratio is higher for middle-aged and senior employees than for young employees. Furthermore, a closer look at the recent declines in nominal wages, which surfaced as a serious problem in the 2000s, reveals that while monthly salary levels have remained almost unchanged, bonus levels have dropped by about 15%. This also points to the importance of including bonuses in the calculation of hourly wages in understanding the actual status of wages.

II. Basic Survey on Wage Structure

If you want to do research on wages, the Ministry of Health, Labour and Welfare (MHLW)'s Basic Survey on Wage Structure is the first thing you should look at. The purpose of this survey is to find out the actual status of wages of workers employed in major industries by type of employment, engagement (full-time or part-time), occupation, as well as gender, age, educational background, years of service, experience, and so forth. The survey asks business establishments to provide information as of June on the number of hours worked, and the amount of wages paid on an individual employee level. The survey popula-

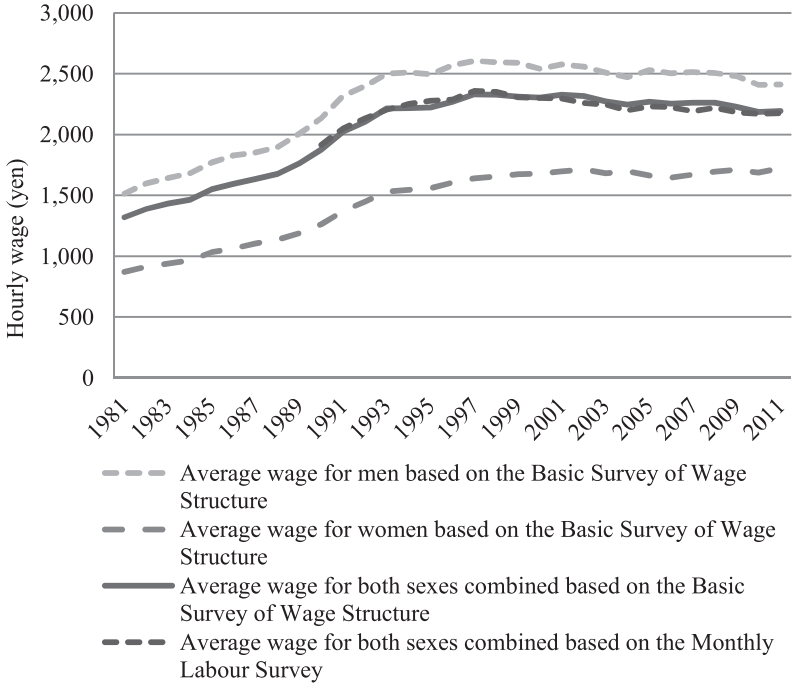
tion comprises a total of some 1.29 million business establishments with five or more "regular employees" (defined as those falling under any of the following: (i) permanent employees, (ii) employees contracted for a period exceeding one month, (iii) employees contracted on a daily basis, or for one month or less who were employed for 18 days or more in both April and May of the survey year) in 16 major industries, covering a total of about 36.53 million employees, from which about 77,000 business establishments with a total of about 1.57 million employees are probabilistically sampled. It should be kept in mind that employees working at business establishments with four employees or fewer and those working in the public sector are outside the sampling frame of the survey. In drawing a probabilistic sample, the targeted population is stratified into multiple groups based on the location (prefecture), type of industry, and size of respective business establishments. Then, a designated number of business establishments are chosen from each group. The questionnaire is distributed to the selected business establishments, each of which would then be asked to probabilistically select a sample of employees from those listed on the directory of employees or payroll register. The business establishments are asked to provide the following information for each of their sampled employees: type of employment defined by whether the individual is regarded as *seishain* (i.e., a member of the regular staff) within the organization and whether the employment is permanent or for a fixed period; type of engagement defined by the length of his or her regular working hours; educational background (except for temporary workers and part-timers); age; number of years of tenure; type of workers classified by production workers or not; class of position (applicable only when the responding business establishment belongs to a company with 100 employees or more); type of occupation; number of days worked; number of scheduled hours worked; number of overtime hours worked; amount of cash wages paid regularly; and amount of extra compensation such as semi-annual and end-of-year bonuses. Of these, the amount of cash wages paid regularly is the amount of salary per month, and includes the amounts of overtime pay, commuting allowance, attendance bonuses, and family allowance as its components.

Readers are advised to refer to the MHLW website for further details of the statistics. For those who want to download data for processing in Excel or other applications, an online search system for labor statistical data developed by the Japan Institute for Labour Policy and Training (JILPT) would be quite useful. Using data downloaded from the JILPT site, I calculated the average hourly wages for men and women by the formula below and plotted the results in Figure 1.

Hourly wage = (Amount of cash wages paid regularly + Annual amount of extra compensation in the previous year/12) / (Number of scheduled hours worked + Number of overtime hours worked)

In the above calculation, 1/12 of the amount of extra compensation such as bonuses is regarded as extra compensation applicable to work performed in June, the surveyed month.

From this, we can see that the average hourly wage in June 2011 was 2,412 yen for



Sources: Calculated by the author using data from the *Basic Survey on Wage Structure* and those from the *Monthly Labour Survey*.

Note: The amount of hourly wage, as defined in the Basic Survey on Wage Structure, is calculated as: *(Amount of cash wages paid regularly + Annual amount of extra compensation/12) / (Number of scheduled hours worked + Number of overtime hours worked)*. In contrast, the Monthly Labor Survey calculates the hourly wage as: *Total cash wages paid (including bonuses) / Total hours worked*.

Figure 1. Hourly Wage Trends for Men, Women, and Both Sexes Combined

men and 1,724 yen for women. The average hourly wage for men peaked at 2,605 yen in 1997 and has since generally followed a downward trend, reflecting the severe state of the Japanese economy.

Being based on a large sample, the Basic Survey on Wage Structure allows for a fairly accurate estimation of average values by age group, industry, and size of company, which is a major advantage of the survey. Because of the large size of the sample, the Basic Survey on Wage Structure is often called “Wage Census” in Japan. However, this is misleading and the use of such terms should be avoided because the English term “census” refers to a survey that collects data on the entire population, whereas the Basic Survey on Wage Structure is a sample survey and obtains information only from a subset of the population.

III. Monthly Labour Survey

The Basic Survey on Wage Structure inquires about the situation in January, and the results of the survey are published in or around February the following year. As such, the use of a large sample necessitates a compromise in timeliness. Thus, when we want to identify short-term economic trends, we often turn to the MHLW's Monthly Labour Survey, which can be defined as a simplified version of the Basis Survey on Wage Structure. The Monthly Labour Survey is also targeted at business establishments with five or more regular employees in the 16 major industries, but only about 33,000 establishments are selected as a sample in a probabilistic manner. That is, the size of the sample is less than half of that for the Basic Survey on Wage Structure. However, the Monthly Labour Survey is conducted monthly and the preliminary survey results are made available the following month. The biggest difference between the two surveys is that the Monthly Labour Survey asks about the overall situation of each business establishment and not the situation of each sampled individual, thereby reducing the burden on the part of responding business establishments. The questionnaire asks business establishments to provide the following information on the employees as a whole: number of regular employees in total and by gender, total number days worked, total number hours worked, and the total amount of cash wages paid. In other words, the Monthly Labour Survey asks respondents to provide information aggregated at the establishment level for both working time and wages. The number of hours worked is the total of the number of scheduled hours worked and the number of overtime hours worked, and the breakdown figures are provided as well. The amount of cash wages paid is the total of the amount of cash wages paid regularly and the amount of special pay (including bonuses), plus the breakdown figures.

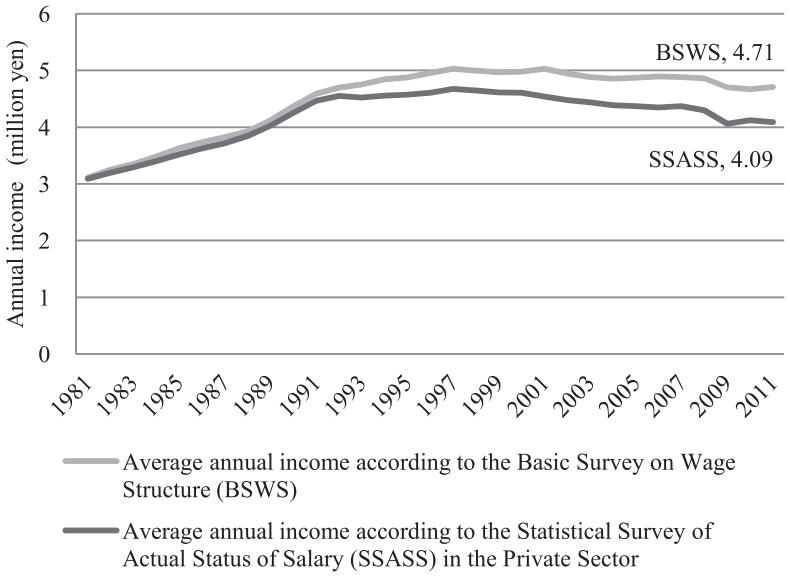
When we search for the Monthly Labour Survey using the JILPT's online system for labor statistical data, we can obtain not only monthly data but also data for calendar years. Plotted in Figure 1 as representing the average hourly wage based on Monthly Labour Survey are the values calculated for both sexes combined using data obtained through this system. The average hourly wage peaked in 1997 and has since declined as is the case for that based on the Basic Survey on Wage Structure. The amount of hourly wage in 2011 is calculated to be 2,176 yen. While data provided by the Monthly Labour Survey are full-year data, those collected in the Basic Survey on Wage Structure basically represent the situation in June. Therefore, it is no wonder that the amount calculated based on one survey is not identical to that based on the other. Rather, the very fact that the average hourly wages calculated based on data from the two separate surveys have been both stabilized around 2,180 yen, demonstrates that these surveys have only a small sampling error. In the case of the Monthly Labour Survey, the MHLW also releases indices adjusted for the effect of changes in sample composition and recommends their use in making comparisons over time.

IV. Statistical Survey of Actual Status of Salary in the Private Sector

Next, let's take a look at the Statistical Survey of Actual Status of Salary in the Private Sector conducted by the National Tax Agency (NTA). The purpose of this survey is to find out the actual status of private-sector salaries in each year by wage level, size of business establishment, size of company, and so forth, thereby preparing data to serve as a basis for the estimation of tax revenue, examination of the tax burden, implementation of tax administration, and so forth. The target population of the survey is wage earners working in private-sector business establishments. The scope of the target population, which includes the top managers of companies, is greater than that of the Basic Survey on Wage Structure, which is targeted at those falling under the definition of "workers" under the Labor Standards Act. The NTA's survey is also targeted at a broader spectrum of business establishments, including all those having at least one wage earner, whereas only those with five or more regular employees are targeted in the Basic Survey on Wage Structure. Business establishments are classified into 14 industry categories in the Statistical Survey of Actual Status of Salary in the Private Sector, compared to 16 in the Basic Survey on Wage Structure. This is because those falling into the single category of "services" in the former are classified into three separate categories—i.e., "accommodations, eating and drinking services," "living-related and personal services and amusement services," and "services, not elsewhere classified"—in the latter. Meanwhile, agriculture, forestry, and aquaculture, which are outside the scope of the Basic Survey on Wage Structure, are included as part of "agriculture, forestry, fisheries, and mining" in the NTA's survey.

The sampling method employed in the survey is the same as that of the Basic Survey on Wage Structure, in that the government probabilistically selects a sample of business establishments, and each of the sampled business establishments is asked to probabilistically select a sample of individuals (workers). First, all business establishments in Japan are stratified into multiple groups based on their size and other attributes, and a sample of business establishments are probabilistically selected from each group. Then, each sampled business establishment is asked to probabilistically select individuals as subjects for the survey from those listed on the payroll. Here, all workers whose annual income from employment exceeds 20 million yen are to be included in the sample. In the case of the 2011 survey, a total of 275,710 wage earners working in 20,238 business establishments were sampled, respectively 18% and 26% lower compared to approximately 1.57 million employees in approximately 77,000 business establishments sampled in the Basic Survey on Wage Structure. The number of individuals sampled in the NTA's survey is small relative to that of sampled business establishments, suggesting that its sample includes a greater proportion of small-sized business establishments than that of the Basic Survey on Wage Structure.

The NTA's survey asks respondents to provide the following information on sampled wage earners: gender, age, number of years of service, number of months for which salaries



Source: Created by the author based on data from the MHLW's *Basic Survey on Wage Structure* and the NTA's *Statistical Survey of Actual Status of Salary in the Private Sector*.

Note: For the Basic Survey on Wage Structure, the amount of annual income is calculated as: *Amount of cash wages paid regularly × 12 + Amount of extra pay*. For the Statistical Survey of Actual Status of Salary in the Private Sector, the amount of annual income is the average income for those who worked throughout the year and calculated as: *Total amount of annual salaries / Number of workers.*

Figure 2. Time-Series of Annual Income According to the Basic Survey on Wage Structure and the Statistical Survey of Actual Status of Salary in the Private Sector, in Million Yen

were paid during the surveyed year, status or function (e.g., company's top representative, directors, officers, etc.; family employee of a sole proprietor filing "blue-form" income tax returns; part-timer; other salaried employee), subject or not subject to year-end tax adjustments, status of spousal exemptions, number of dependents, personal deductions applicable to the surveyed individual, amount of private pension insurance premiums paid, amount of salaries received, miscellaneous deductions, and amount of tax on the income earned in the year. The "amount of salaries" referred to above is the total sum of "salaries, allowances, etc." and "bonuses." Since this survey does not include any question regarding working hours, we cannot calculate wages per hour. As such, while having the advantage of providing extensive information relating to taxes, the NTA's survey has its disadvantage in that it does not allow for the calculation of per-hour wages. In order to enable comparison with the Basic Survey on Wage Structure, I calculated annual income amounts separately based on data from these two surveys and plotted the results in Figure 2. While the two time-series

are similar in trend with the annual income heading downward after peaking in 1997, they gradually deviate from one another to show a gap of 620,000 yen in 2011. This deviation may be attributable to the fact that business establishments with four employees or less are included in the Statistical Survey of Actual Status of Salary in the Private Sector, but not in the Basic Survey on Wage Structure.

V. Survey of Job-by-Job Pay Rates in the Private Sector

Lastly, I would like to introduce the Survey of Job-by-Job Pay Rates in the Private Sector conducted by the National Personnel Authority (NPA). The purpose of this survey is to collect data to serve as a basis for the comparison and assessment of salary levels for national and local government servants against those for private-sector employees, in line with the relevant provisions of the National Public Service Act and the Local Public Service Act. It is targeted at private-sector employees working in business establishments with 50 or more employees belonging to a company with 50 or more employees, whereby business establishments are asked to provide the amounts of gross pay, overtime pay, commuting allowance, etc. paid to individual employees for the month of April. For the purpose of this survey, “employees” refer to full-time employees employed for an indefinite period of time (including those age 61 or above) and exclude those employed on a temporary basis. Business establishments are also asked to provide the aggregate totals of bonuses and regular pay for the month, the number of employees on the payroll, as well as information about various allowances and benefits. In the 2012 survey, a stratified probabilistic sample of 11,085 business establishments were selected from the targeted population of 50,187 business establishments which were stratified into multiple groups based on their location, type of industry, size of the company to which they belong, and so forth. The survey collected information on a total of 441,066 employees engaged in the types of jobs surveyed other than those designated for new employees. The numbers of employees and business establishments sampled in this survey are respectively 28% and 14% lower compared to approximately 1.57 million employees in approximately 77,000 business establishments sampled in the Basic Survey on Wage Structure. As such, the number of individuals sampled in the NPA’s survey is large relative to that of sampled business establishments, suggesting that its sample includes a greater proportion of large-sized business establishments than that of the Basic Survey on Wage Structure.

As indicated by its name, the Survey of Job-by-Job Pay Rates in the Private Sector aims to find out the levels of pay for private-sector employees by type of jobs, which are also highlighted in survey results released on the Internet. For the purpose of comparison, I have selected some types of jobs/occupations and calculated the average age of sampled individuals engaged in each type of job/occupation and the average amount of regular pay they receive using data from the Survey of Job-by-Job Pay Rates in the Private Sector and the Basic Survey on Wage Structure. The results are shown in Table 1. In order to control

Table 1. Comparison of Two Statistics for 2011

Type of job/occupation	Survey of Job-by-Job Pay Rates in the Private Sector		Basic Survey on Wage Structure (Business establishments belonging to companies with 1,000 employees or more)	
	Age	Amount of regular pay (yen)	Age	Amount of cash wages paid regularly (yen)
University professor	56.5	742,171	56.9	694,100
University associate professor	47.0	587,492	46.2	551,500
University lecturer	42.3	505,314	42.7	501,400
Physician	42.4	934,342	35.7	696,100
Dentist	39.4	736,198	35.2	433,900
Pharmacist	34.7	343,064	33.6	343,400
Nurse	36.6	345,233	33.7	346,500
Chauffeur	52.0	415,652	55.2	246,400
Guard	52.7	394,952	55.9	284,100
Janitor	52.4	335,997	52.5	221,600

Sources: Table 5 of the NPA's *2011 Survey of Job-by-Job Pay Rates in the Private Sector* and Table 1 for occupation-by-occupation data of the MHLW's *2011 Basic Survey on Wage Structure*.

for the difference in the targeted population (consisting of business establishments with 50 employees or more of companies with 50 employees or more in the case of the former, and business establishments with five or more in the case of the latter), the average figures for the Basic Survey on Wage Structure were calculated by limiting the scope of business establishments to those belonging to companies with 1,000 employees or more. Average amounts of regular pay differ significantly for some types of jobs, probably reflecting differences in the sampling process between the two surveys. Survey of Job-by-Job Pay Rates only includes workers with indefinite contract, but BSWS includes workers with fixed-term contracts as far as the workers satisfy the BSWS's definition of "regular workers."

VI. Other Surveys Conducted with Households as Respondents

I have introduced the four most-used governmental statistics in capturing the state of wages in Japan. All of them are conducted with business establishments as respondents. Meanwhile, as those targeted at households as respondents, I would like to cite the Labour Force Survey, a monthly survey by the Statistics Bureau of the Ministry of Internal Affairs and Communications (MIAC), and the Employment Status Survey, another MIAC survey

conducted every five years. They provide data on annual income and the number of hours worked, allowing the calculation of hourly wages. One major advantage of these surveys is that they include data on public servants and the self-employed. In order to take this advantage, data obtained from these surveys are often used in wage studies. Meanwhile, their disadvantage is that they ask respondents to provide interval category for the amount of wages received and the number of hours worked during a specified period of time. Although this is inevitable considering the need to alleviate the burden on the part of responding households, we need to use the median value for the period, etc. for the calculation of hourly wages. Due to the word limit, I cannot explain this theme in sufficient detail, but the use of these household surveys is recommendable depending on the purpose of studies.

VII. Relationship to the Wage Data on International Database

Wage and earnings data of Japan are available from several international organizations including Organisation of Economic Co-operation and Development (OECD) and International Labour Office (ILO). The OECD's Stat Extracts system reports that annual wages in 2011 are about 4.11 million yen, which is below the estimate from BSWS's 4.71 million yen. The average annual wage is defined as the average annual wages per full-time equivalent dependent employee calculated based on National Accounts across countries. The System of National Account of Japan estimates the earnings of employees using Labour Force Survey of MIAC and Monthly Labor Survey of MHLW. The ILO's LABORSTA reports earnings per month by industry based on the Monthly Labor Survey of MHLW.

Satisfaction Levels (Qualitative Data)*

Akihito Toda
Recruit Works Institute

I. Introduction

Qualitative data, which represents the subjective viewpoints of survey respondents, has long been employed in various types of analysis in fields such as sociology and psychology. In recent years qualitative data analysis has been performed with increasing frequency in economics as well.

In Japan, people's values are diversifying, and a single word—such as "freeter"—can prompt a wide range of reactions. "Freeter" is a Japanese neologism combining the English word "free" (in the sense of "freelance") with the German *arbeiter*, meaning laborer (in Japan *arubaito*, from the German *arbeit*, is a loan word referring to part-time work). A freeter is a young person who lacks steady employment and subsists on a series of short-lived part-time jobs. When the word was coined in the late 1980s, it had positive connotations of freewheeling bohemianism, but as the job market worsened thereafter, it took on an increasingly negative cast as more and more young people adopted this sort of lifestyle not out of choice but because they were unable to find full-time jobs. In a case like this, where a single word is the subject of varying impressions and interpretations, qualitative data analysis has the potential to aid greatly in gauging people's true attitudes toward persons lacking fixed employment.

In Japan, "Lost Two Decades" of economic stagnation followed the burst of an asset price bubble in 1991, and the outlook for future economic growth remains dim. Under that situation, there is an increasing concern to the happiness levels under the low economic growth, focused on the questions of which factors contribute to happiness or subjective well-being, and what sort of yardsticks should be used to measure it.[1]

In the current research environment, qualitative data is dramatically increasing in importance. In this paper, I will present qualitative-data statistics on satisfaction levels in two areas, namely job satisfaction and life satisfaction. Also, I will outline precautions to be kept in mind when handling qualitative data.

II. Statistics Used to Survey Satisfaction Level

Table 1 summarizes key statistical surveys containing questions pertaining to

* The views expressed in this paper are those of the author, and do not necessarily reflect those of the Institute.

[1] Refer to Ohtake, Shiraishi and Tsutsui (2010) for further information on research into happiness levels.

Table 1. Major Statistical Surveys with Questions Pertaining to Satisfaction Level

	Job satisfaction	Life satisfaction	Happiness level	Specific character of statistics
National Survey of Lifestyle Preferences (2008) (Cabinet Office, Government of Japan)	How satisfied are you with the following aspects of your work? Respond with a number from 1 (satisfied) to 5 (almost completely unsatisfied) or 6 (don't know / can't answer) ・My job is rewarding and suits my abilities ・I am free from fear of losing my job ・I am able to take a sufficient amount of vacation time each year etc.	Question: Are you generally satisfied or dissatisfied with your lifestyle? Respond with a number from 1 (satisfied) to 5 (dissatisfied) or 6 (don't know / can't answer)	*Survey contains items pertaining to happiness level from 2009 onward. Question: How happy are you currently? Respond with a number from 0 (extremely unhappy) to 10 (extremely happy)	6,000 males and females aged 15 to 75 are surveyed. Survey was conducted every three years from 1978 to 2008. Happiness level has been surveyed since 2009.
Japanese General Social Surveys (JGSS) (2010)	Question: How satisfied are you with your current job? Respond with a number from 1 (satisfied) to 5 (dissatisfied)	How satisfied are you with the following aspects of your lifestyle? Respond with a number from 1 (satisfied) to 5 (dissatisfied) ・Home life ・Area of residence ・Leisure time usage etc.	Question: Are you currently happy? Respond with a number from 1 (happy) to 5 (unhappy)	9,000 males and females aged 20 to 89 are surveyed. Two types of surveys conducted, face-to-face interviews and questionnaires handed to respondents and collected later. Surveys conducted continuously since 2000.
Japanese Panel Survey of Consumers (9th survey, 2011) (Institute for Research on Household Economics)	—	Question: Are you generally satisfied or dissatisfied with your lifestyle? Respond with a number from 1 (satisfied) to 5 (dissatisfied)	Question: Do you consider yourself happy or unhappy? Respond with a number from 1 (very happy) to 5 (very unhappy)	Panel survey of females aged 24 to 34, first conducted in 1993 with several follow-ups thereafter.
Japanese Life Course Panel Survey on Youth (2009) (University of Tokyo Institute of Social Science)	Question "How satisfied are you with the following aspects of your life?" includes the item "Job." Respond with a number from 1 (satisfied) to 5 (almost completely unsatisfied) or 6 (not applicable).	Question "How satisfied are you with the following aspects of your life?" includes the item "Lifestyle in general." Respond with a number from 1 (satisfied) to 5 (almost completely unsatisfied) or 6 (not applicable).	—	Panel survey of males and females aged 20 to 34, conducted in 2006.

Note: The statistical surveys shown above are only some of the relevant statistics available, and should not be seen as covering all of the territory.

satisfaction level. The first thing that strikes us about this table is the paucity of official statistics on a subjective topic such as satisfaction level. Indeed the only governmental survey we can use to track changes over time is the Cabinet Office's "National Survey of Lifestyle Preferences."

A second point is that there are two approaches to surveying job and life satisfaction. One seeks to assess overall job satisfaction or overall life satisfaction, while the other seeks to assess various individual factors that affect satisfaction level. For example, the Cabinet Office's "National Survey of Lifestyle Preferences" inquires into various aspects of job satisfaction such as motivation (i.e. degree to which a job is found rewarding), stability of employment, and vacation time. Meanwhile, the Japanese General Social Surveys (JGSS) breaks life satisfaction down into various survey items such as family life, area of residence, and ways of spending leisure time. As we shall see later, simply surveying overall level of job or life satisfaction does not lead to a clear picture of actual conditions. It is also essential to determine whether people consider themselves satisfied or not in each specific area. At the same time, there are studies that combine the results for various surveyed factors into comprehensive indicators of life satisfaction, happiness or subjective well-being. For example, since 2011 the OECD (Organisation for Economic Co-operation and Development) has been compiling the BLI (Better Life Index) as an assessment of life satisfaction and happiness in each of its member nations.

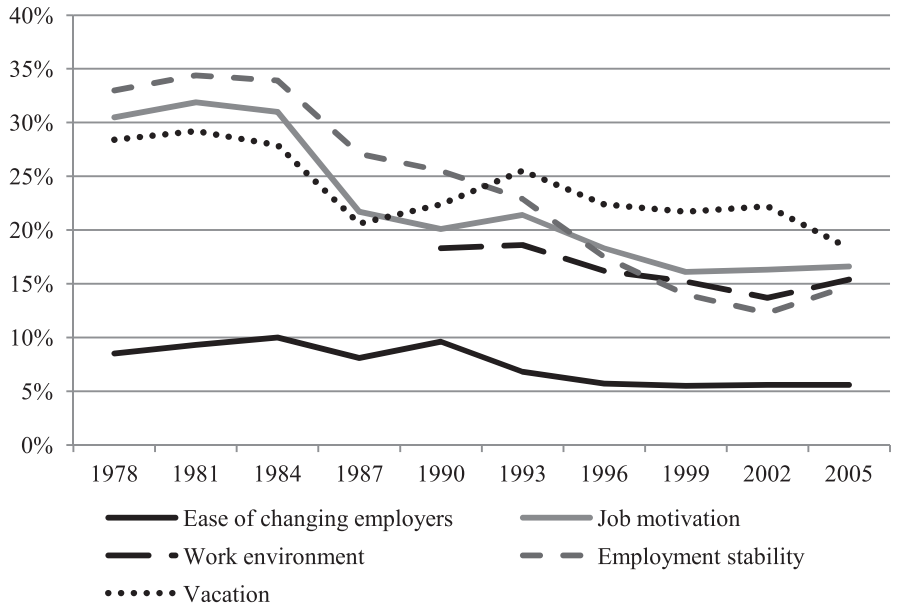
Third, it is important to note that in recent years, panel surveys evaluating satisfaction level have been carried out in Japan. Table 1 shows the Japanese Panel Survey of Consumers conducted by the Institute for Research on Household Economics and the Japanese Life Course Panel Survey on Youth performed by the University of Tokyo Institute of Social Science, but there are other panel surveys covering satisfaction level, happiness or subjective well-being, including those of the Global COE programs at Osaka University and Keio University. A panel survey enables researchers to track the progression of a certain individual's happiness level over time, and from a statistics perspective, is somewhat less difficult to analyze than purely subjective data. Difficulties with analysis will be discussed in detail later in this paper.

III. What Data on Satisfaction Level Tells Us

Thus far I have mentioned several surveys pertaining to job and life satisfaction. What do the results of these surveys tell us? Let us examine several issues in greater detail.

1. Job Satisfaction

The Cabinet Office's "National Survey of Lifestyle Preferences" features chronological data on job satisfaction. Figure 1 shows the percentages of people responding that they were



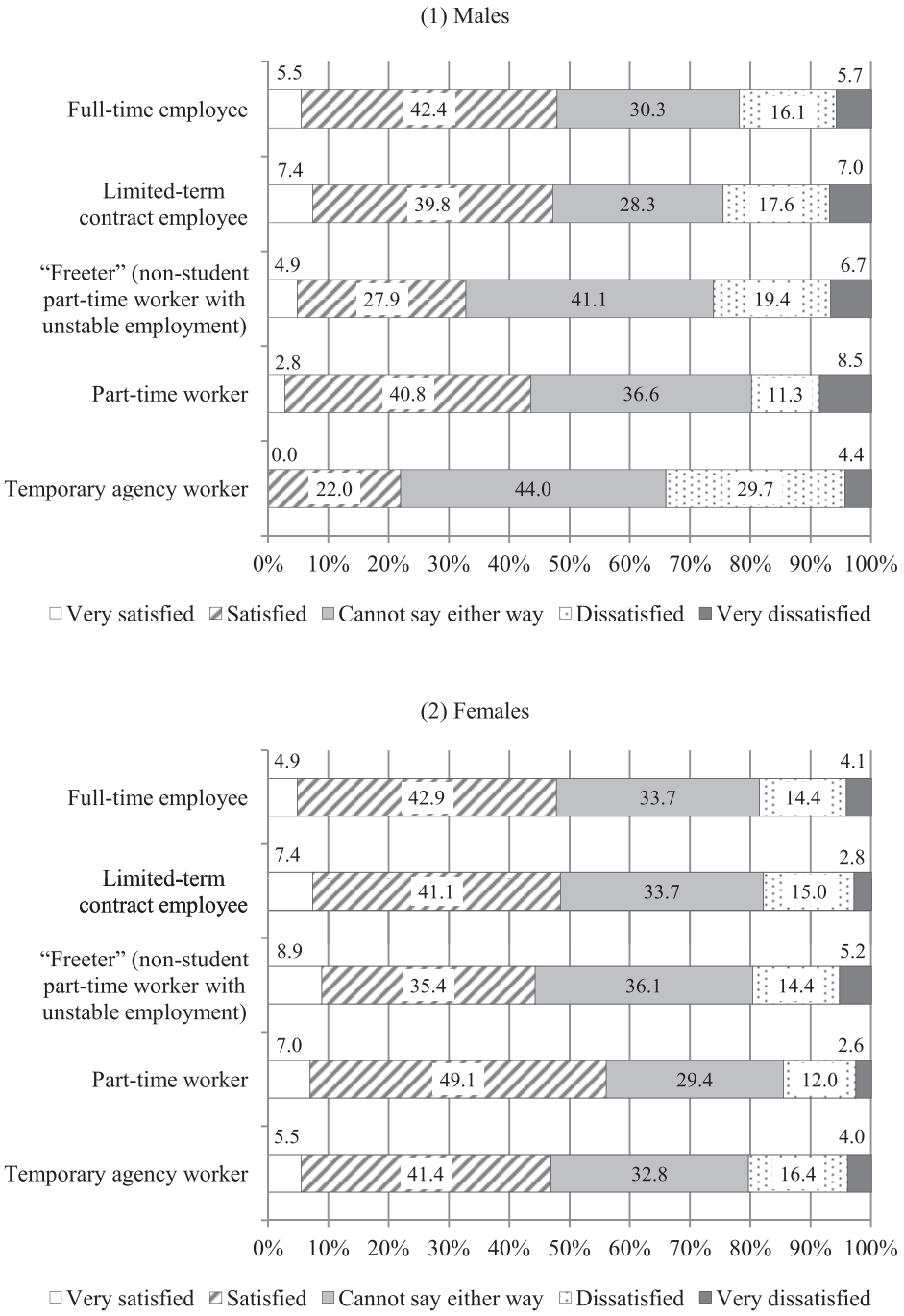
Source: Cabinet Office, Government of Japan, *National Survey of Lifestyle Preferences.*
Note: Percentages are the total of respondents who indicated they were "satisfied" or "pretty satisfied." For each aspect, the respective questions were: Job motivation: "My job is rewarding and suits my abilities," Work environment: "My work environment is consistently comfortable," Employment stability: "I am free from fear of losing my job," Vacation: "I am able to take a sufficient amount of vacation time each year," Ease of changing employers: "I feel it would be easy to change to an occupation of my choice."

Figure 1. Percentage of People Who Consider Themselves Satisfied

"satisfied" or "very satisfied" with their work.[2] During the 1970s, when the survey was first launched, and the 1980s, figures for motivation, employment stability and vacation time were all high, but all of these dropped off steeply thereafter, and overall job satisfaction has been trending continually downward. Over the past 30 years, the greatest drop has been in employment stability. At the same time, "ease of changing employers" has remained at more or less the same low level over the same 30 years. Looking back over these three decades, we find satisfaction levels declining across a wide range of aspects.

The Ministry of Health, Labour and Welfare (2004) performed a regression analysis to determine the degree to which individual factors such as wages and working hours

[2] "Job satisfaction" pertains to the subjective viewpoints of persons performing jobs, and thus the statistical target group should be limited to working persons. However, no data limited to working persons has been released, and the statistics cited here are percentages of all those surveyed, working or non-working.



Source: RECRUIT Works Institute, *Survey of Working Persons (2010)*.

Figure 2. Satisfaction Levels by Employment Status

influence overall job satisfaction. The coefficients expressing these degrees of influence indicate that (i) the most influential was job motivation, followed by (ii) wages, (iii) skill development and (iv) working hours. The results also indicate that even full-time workers are losing motivation as they fail to find rewarding jobs amid a stagnant economy. The relative importance of job motivation, compared to wages, highlights the growing obsolescence of the notion that "the purpose of work is to earn money." Even when looking at job satisfaction levels comprehensively, there is a need for careful examination of each factor's impact on the whole.

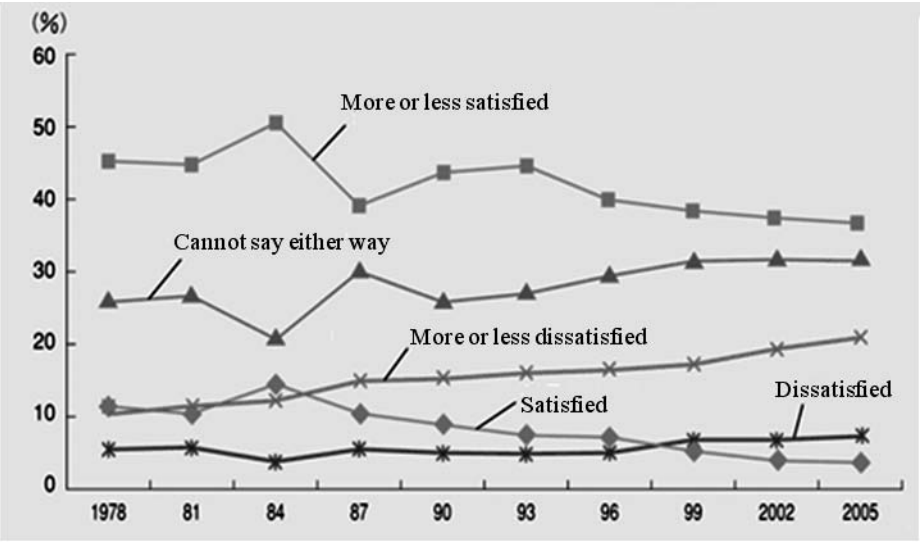
The 1990s were a decade of economic doldrums in which irregular employment grew increasingly common. Work motivation tends to be low among irregularly employed workers, and we may infer that the increasing number of workers with low motivation dragged down average job satisfaction levels across the board. Evidence to support this interpretation can be found in figures for job satisfaction level by employment status. Figure 2 shows the latest job satisfaction data broken down by gender and employment status, and we find that there are not enormous differences between full-time employees and others. Among male respondents, nearly 50% of full-time employees and contract employees consider themselves "very satisfied" or "satisfied," and the figure is above 40% for part-time workers as well. The numbers are somewhat lower for irregularly employed part-timers ("freeters") at about 30% and temporary agency workers at around 20%. Responses from female workers were much the same.

If there is not such a dramatic difference between the job satisfaction levels of full-time workers and others, it seems that the great drop in job satisfaction levels over the past 30 years is best explained by the difficulty in finding rewarding jobs that spur motivation amid a sluggish economy. With few prospects for growth, companies are faced with the tasks of cutting costs and maintaining high productivity levels, and continue to hire a bare minimum of workers even as workloads grow ever larger. Under these circumstances, even full-time workers are being sapped of motivation.

2. Life Satisfaction

Next, let us examine trends in life satisfaction levels. According to the Cabinet Office's "National Survey of Lifestyle Preferences," the percentage of people responding that they were "satisfied" was already low at 10.9% in 1978, but by 2005 had declined to a mere 3.6% (see Figure 3). Even the total for "satisfied" and "more or less satisfied" combined was only 35.8%, the lowest rate ever reported. Meanwhile, the total for "more or less dissatisfied" and "dissatisfied" rose from 15.6% in 1978 to 28.3% in 2005. The decline in percentage of people who are satisfied with their lives, matched by a corresponding rise in percentage of those who are dissatisfied, indicates a general decline in life satisfaction levels over the past three decades or so.

What characteristics stand out among people who are satisfied with their lives? Figure 4 shows differences in life satisfaction levels by gender and age group. Regardless of



Source: Prepared on the basis of the *National Survey of Lifestyle Preferences*, Cabinet Office, Government of Japan.

Notes: 1. Percentages of respondents to the question "Are you generally satisfied or dissatisfied with your lifestyle? Circle one response."

2. Percentage of respondents answering "Don't know / Can't answer" omitted.

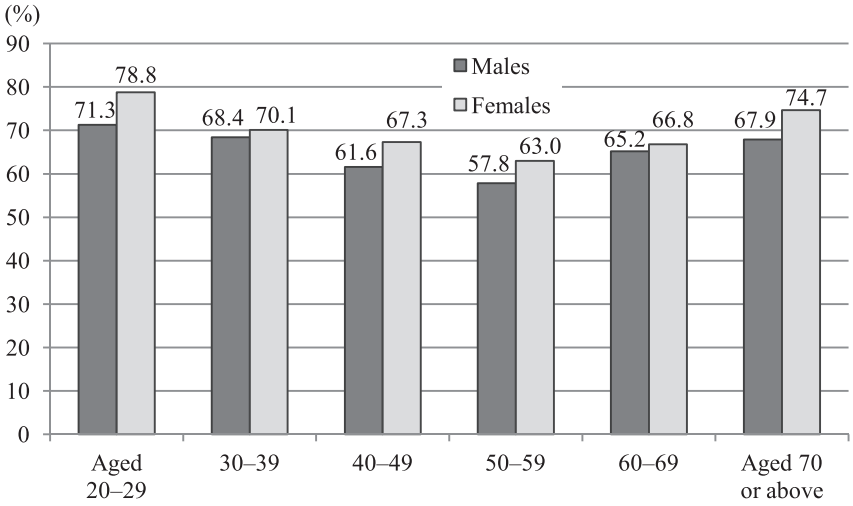
Figure 3. Overall Life Satisfaction Level

gender, satisfaction levels are lowest among people in their 50s, and get progressively higher as people grow younger or older. Satisfaction levels are slightly higher for females than for males regardless of age group. These findings provide further evidence that life satisfaction level is largely defined by factors other than income level.

Here I will note two analyses of the factors defining life satisfaction level. The Cabinet Office (2007) performed a regression analysis to elucidate factors that elevate life satisfaction, and found the following criteria to have significant positive impact on satisfaction levels:

- Sufficient time spent with family members
- Interaction with neighbors and members of the local community
- Interaction with co-workers
- Living with at least one other person
- Being married
- High income

One can intuitively grasp the correlation between higher incomes and higher levels of life satisfaction, but these findings show that other factors are also important, such as personal connections with family, neighbors and co-workers.



Source: Cabinet Office, Government of Japan, *National Survey of Lifestyle Preferences.*
Note: Percentages are the total of respondents who indicated they were "satisfied" or "pretty satisfied."

Figure 4. Life Satisfaction Levels by Age Group

Toda (2012) employed the findings of the Japanese Panel Survey of Consumers, conducted by the Institute for Research on Household Economics, to investigate the degree to which women's life satisfaction levels are affected by length of working hours and employment status. The findings indicated that among married women, those working shortened hours, non-regular employees, and those with long working hours (49 hours or more per week) had lower life satisfaction levels than full-time homemakers. The inference based on the fixed-effect model is that household income has a significant impact, but even controlling for household income, we find considerable disparities based on employment status and working hours.

3. Summary

This paper has sought to examine the chronological progression of job satisfaction and life satisfaction levels, and to clarify the factors that define these satisfaction levels. This task entails looking not only at overall job and life satisfaction, but also at levels of satisfaction with the various constituent elements of work and lifestyle. A large volume of previous research has focused on factors other than income that act to define satisfaction and happiness levels, and here as well the findings indicate that focusing on income alone is neither appropriate nor effective in a country of diversifying values such as Japan today.

IV. Precautions regarding Analysis of Qualitative Data

This paper has made a number of inferences based on comparisons of qualitative data, particularly data on satisfaction levels. However, there are several precautions to keep in mind when interpreting such data.

First, satisfaction level data is based on the subjective responses of survey respondents. Regarding the subjects and objects of perceptions in the social sciences, as discussed by Inoki (2012), interpretations depend on analysis of subjective feelings reported by studies' target groups. There are always latent questions, such as to what extent Ms. A's "very satisfied" and Mr. B's "very satisfied" should be treated as identical responses. This is particularly problematic in international surveys of attitudes and perceptions. For example, in Japan, when people are asked to choose from five options the responses tend to cluster in the middle, but in some other countries responses tend to cluster at the two extremes. When analyzing data of this sort, it is vital to keep in mind that response trends differ based on nationality.

Second, in qualitative data analysis it is difficult to pinpoint a cause and effect relationship between any two variables. The relationships between variables are rarely as simple as in economic modeling, and with any two given variables, there is generally a possibility that a third variable is influencing both. Some methods such as covariance structure analysis are well suited to analysis of collected data, but as this method depends on the collection of the data, there is a possibility that findings for surveys containing the same questions may differ radically depending on target group or timing of the survey. Regression analysis results, as well, depend on the subjective feelings of respondents and thus can be interpreted as entailing what in econometrics is known as "measurement error," making it difficult to obtain the desired estimation for the regression model. One possible means of addressing these difficulties is to gather panel data and then estimate a model with controls for individuals' specific fixed effects. Panel data ought to be effective in tracking changes in individuals' satisfaction levels resulting from significant life events, and also in specifying cause and effect relationships with a reasonable degree of precision.

References

Cabinet Office. 2007. *Kokumin seikatsu hakusho* (White Paper on the National Lifestyle). Tokyo: Jiji Gahosha.

Inoki, Takenori. 2012. *Keizaigaku ni nani ga dekiruka* [What economics can do]. Tokyo: Chuo Koron Shinsha.

Ministry of Health, Labour, and Welfare. 2004. *Rodo keizai hakusho* (Wite Paper on the Labour Economy). Tokyo: Gyosei.

Otake, Fumio, Sayuri Shiraishi, and Yoshiro Tsutsui. 2010. *Nippon no kofukudo: Kakusa, rodo, kazoku* [Happiness levels in Japan: Labor, family and disparity]. Tokyo: Nippon

Hyoronsha.

Toda, Akihito. 2012. Josei no hatarakikata to seikatsu manzokudo: Kotei koka moderu wo mochiita rodo jikan ya koyo keitai no eikyo bunseki [Labor trends and life satisfaction levels among women: A fixed-effect model analysis of the impact of working hours and employment status]. *Japanese Journal of Research on Household Economics*, no. 96:6–16

Statistics on Suicides of Japanese Workers

Yasumasa Otsuka *Hiroshima University*
Yuji Horita *Hiroshima University*

I. Introduction

In Japan, suicides increased sharply in 1998, passing the 30,000 mark. Over the next 14 years until 2011, the number remained at a high level in excess of 30,000 each year. In the meantime, measures to prevent suicides were promoted at national level through the Basic Act on Suicide Prevention (enforced from October 2006) and the Outline of Comprehensive Suicide Measures (formulated in June 2007). The FY 2012 draft budget for suicide prevention measures was around 18.7 billion yen, including sums for measures to "Clarify the facts concerning suicide," "Encourage public vigilance," "Train personnel to play a central role in early countermeasures," "Promote mental health," "Make appropriate psychiatric care available," "Prevent suicides as a social initiative," "Prevent repeated suicide attempts," "Ease the distress of surviving family members," and "Strengthen cooperation with private organizations." According to the latest statistical data released by the National Police Agency ("Monthly Suicide Statistics for 2012 [Provisional Figures as of December 31]," Jan. 17th, 2013), there were 27,766 suicides in 2012. This was the first time since 1998 that the number had fallen below 30,000. The reasons behind the decrease in suicides will doubtless be discussed from various angles as time goes on. There is a suggestion, however, that enhanced public awareness and increased knowledge of suicide resulting from these nationwide measures, via practical activities by local authorities, private organizations and others, could have been one factor in helping to prevent suicides.

In Japan, there are several forms of statistical data on the subject of suicide. The most representative of these are *Jisatsu no Gaiyo Shiryo* [Overview data on suicides] published by the National Police Agency every year (co-published with the Cabinet Office as *Jisatsu no Jokyo* [The state of suicides] since 2011) and *Jinko Dotai Tokei* (Vital Statistics) published monthly by the Ministry of Health, Labour and Welfare. There are also some independent survey data produced by private organizations and others. These statistical data differ in various ways (for example, in their survey method and definition of terms), leading to discrepancies in figures such as the total number of deaths by suicide.

In view of these points, this paper will provide a commentary on interpreting the various statistical data on suicide in Japan, differences between the various data, and other issues, focusing mainly on workers.

II. Differences in Suicide Statistics Published by NPA and MHLW

Figure 1 and Figure 2 show trends in total deaths by suicide as published by the

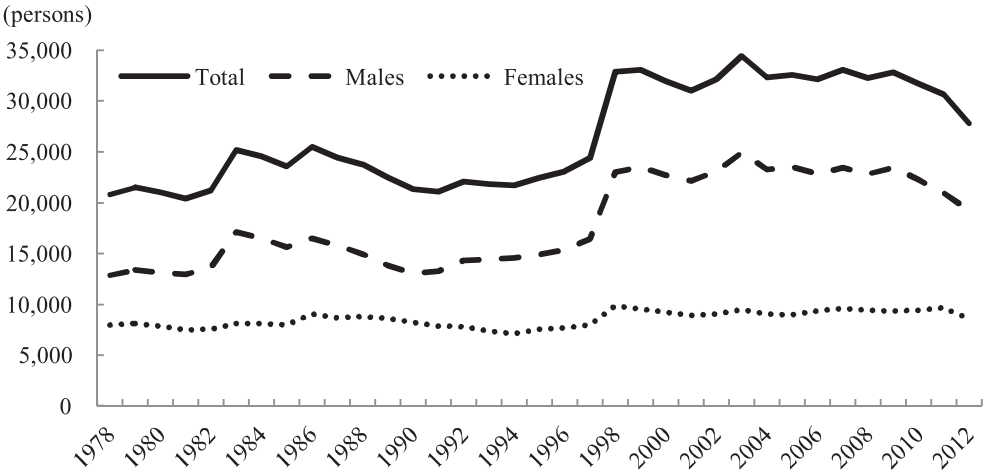


Figure 1. Trends in Deaths by Suicide According to NPA Suicide Statistics

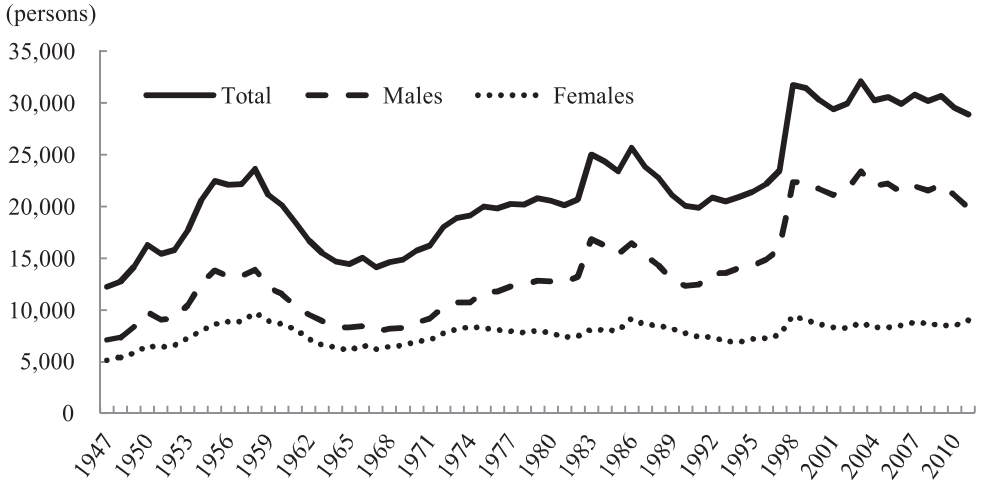


Figure 2. Trends in Deaths by Suicide According to MHLW Vital Statistics

National Police Agency (NPA) and the Ministry of Health, Labour and Welfare (MHLW), respectively. As noted above, suicides in Japan increased sharply in 1998, remaining on a par thereafter. Although this trend can be observed in both figures, overall, the MHLW data indicate fewer deaths by suicide than those published by the NPA. Two reasons may be given for this (Cabinet Office 2012).

The first is the difference in survey targets. For while the MHLW's Vital Statistics are concerned with Japanese nationals in Japan, the NPA suicide data cover the whole population, including foreign nationals in Japan. Since the MHLW statistics do not include foreigners, they inevitably record fewer deaths by suicide than the NPA statistics do.

Table 1. Comparison of Total Deaths by Suicide According to the WHO Mortality Database and MHLW Vital Statistics

	A. WHO Mortality Database	B. MHLW Vital Statistics	Difference (A-B)
2005	30,557	30,553	4
2006	29,923	29,921	2
2007	30,829	30,827	2
2008	30,236	30,229	7
2009	30,714	30,707	7

The second reason is the difference in administrative procedures. In the MHLW's Vital Statistics, cases are processed as "other than suicide" if it is unknown whether the cause of death was suicide, homicide or accidental death. These are not counted as suicide unless the person writing the death certificate makes an amended report to the effect that the cause was suicide. In the NPA suicide statistics, conversely, a suicide statistics form is created as soon as the cause is known to have been suicide mainly as a result of police investigation. The cause is thereafter counted as suicide. This leads to a greater probability that the cause of death will be judged as suicide in the NPA statistics, making the number of deaths by suicide larger than in the MHLW statistics.

III. Comparison of Suicide Statistics by International Agencies

International suicide statistics are published by the OECD and WHO. The former publishes numbers of Japanese deaths by suicide in its OECD Health Data: Health Status. The figures given there are the same as those in the MHLW Vital Statistics. Meanwhile, WHO publishes numbers of Japanese deaths by suicide in the WHO Mortality Database. Although the figures published there are more or less the same as the MHLW Vital Statistics, the figures are slightly different, as shown in Table 1. This is because, in the MHLW Vital Statistics, deaths by suicide are counted only when falling under ICD-10 codes X60-X84 (Intentional self-harm), while the WHO data also include Y87.0 (Sequelae of intentional self-harm) as well as ICD-10 codes X60-X84 in their totals.

IV. Difference in Numbers of Worker Suicides According to NPA and MHLW

Similarly, when limiting deaths by suicide to those of workers, the figures published by NPA and MHLW differ, for the reasons given in II above. Differences between the two statistical data can also be found in their methods of classifying occupations.

In the MHLW Vital Statistics, occupations are classified as "Specialist and technical workers," "Administrative and managerial workers," "Clerical workers," "Sales workers," "Service workers," "Security workers," "Agriculture, forestry and fishery workers,"

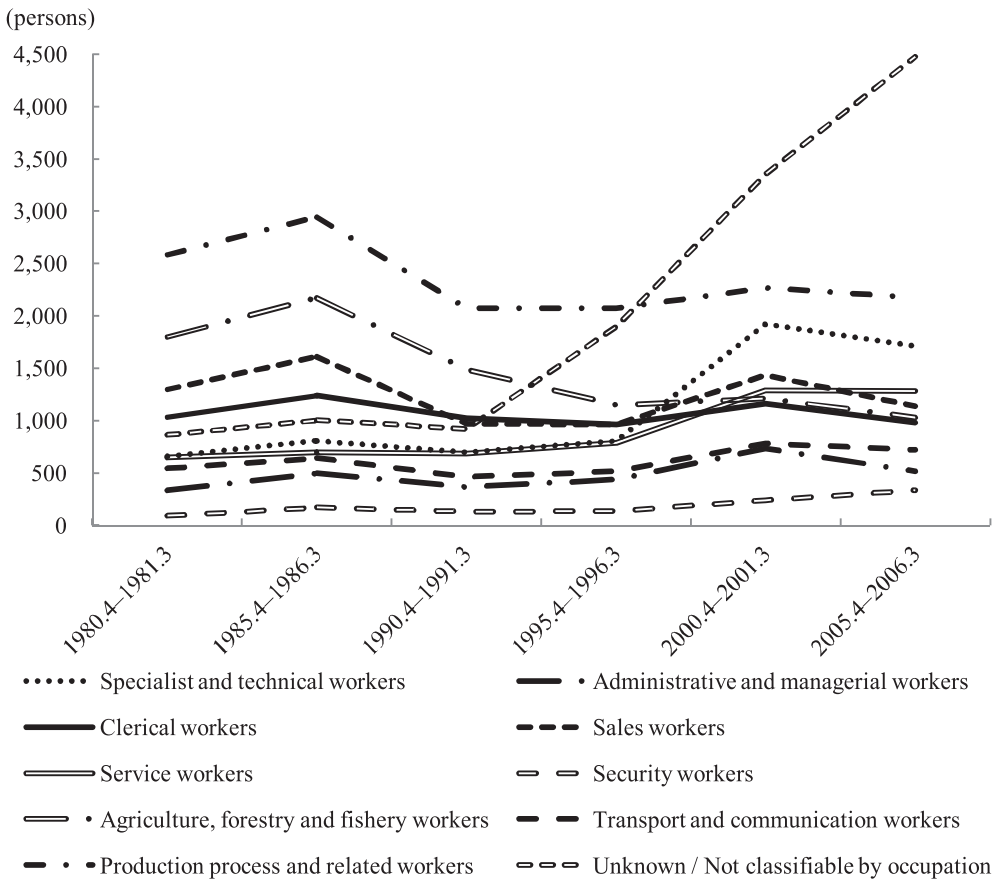


Figure 3. Trends in Deaths by Suicide among Workers According to MHLW Vital Statistics

"Transport and communication workers," "Production process and related workers," and "Workers not classifiable by occupation." However, since persons of unknown employment status are included among "Workers not classifiable by occupation," this could also include people who have no job. Figure 3 shows trends in worker suicides by occupation, according to the MHLW Vital Statistics.

Until 2006, the NPA suicide statistics only divided occupations into two categories, namely "Management workers" and "Employees." However, subcategories were given for each of these; specific occupations for "Employees," for example, included "Agriculture, forestry and fishery workers," "Factory workers" and "Vehicle operators." In 2007, the NPA revised its suicide statistics forms, changing its occupation categories to "Specialist and technical workers," "Administrative and managerial workers," "Clerical workers," "Sales workers," "Service workers," "Skilled workers," "Security workers," "Communication and transport workers," "Laborers" and "Others." There are also subcategories for each of these.

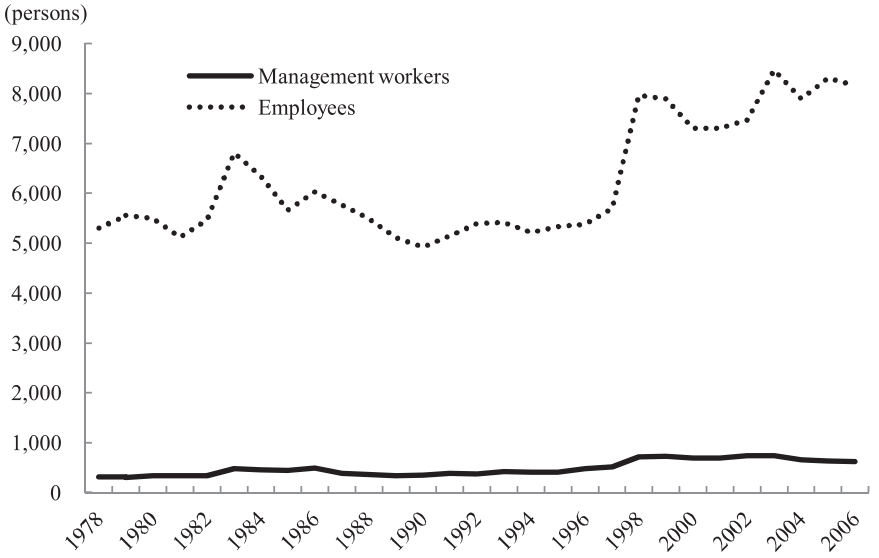


Figure 4. Trends in Deaths by Suicide among Workers According to NPA Suicide Statistics (up to 2006)

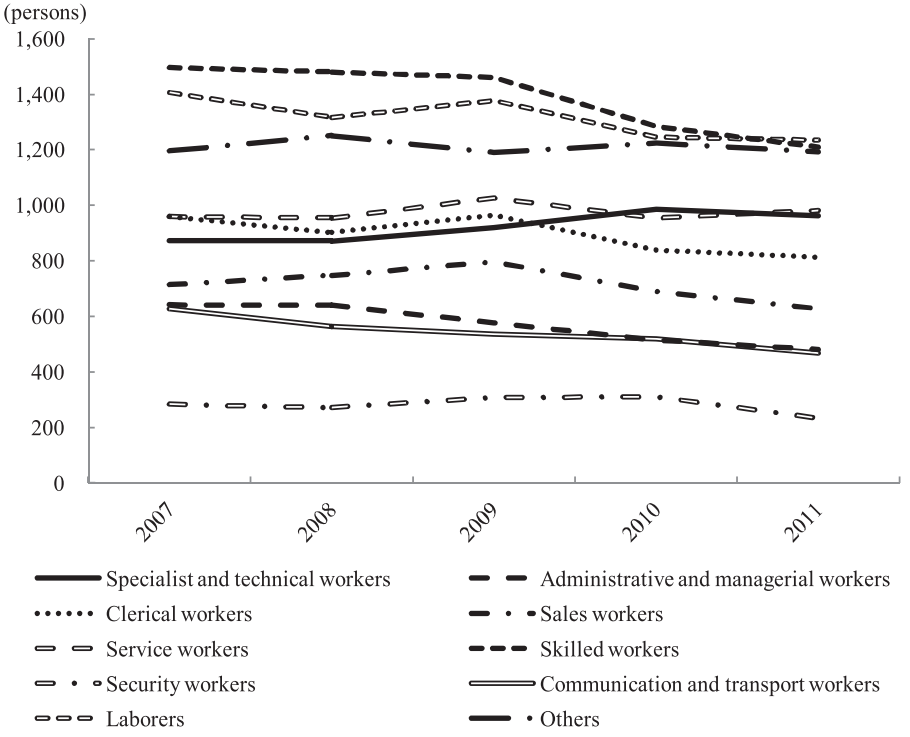


Figure 5. Trends in Deaths by Suicide among Workers According to NPA Suicide Statistics (2007 onwards)

For example, the occupation classified as “Management workers” up to 2006 included “Elected representatives,” “Civil servants and others in management positions,” “Officers of companies and organizations,” and “Management workers other than officers of companies and organizations.” By contrast, “Administrative and managerial workers” after 2007 included “Civil servants at elected representative, governor or division manager level and above,” “Officers of companies, public corporations, etc.,” and “Department and division managers of companies and public corporations.” Thus, it should be borne in mind that a simple comparison cannot be made between the NPA occupation categories up to 2006 and after 2007. Figure 4 shows trends in suicides among workers by occupation up to 2006, as reported by the NPA, while Figure 5 shows trends after 2007.

V. Workers’ Accident Compensation for Mental Disorders

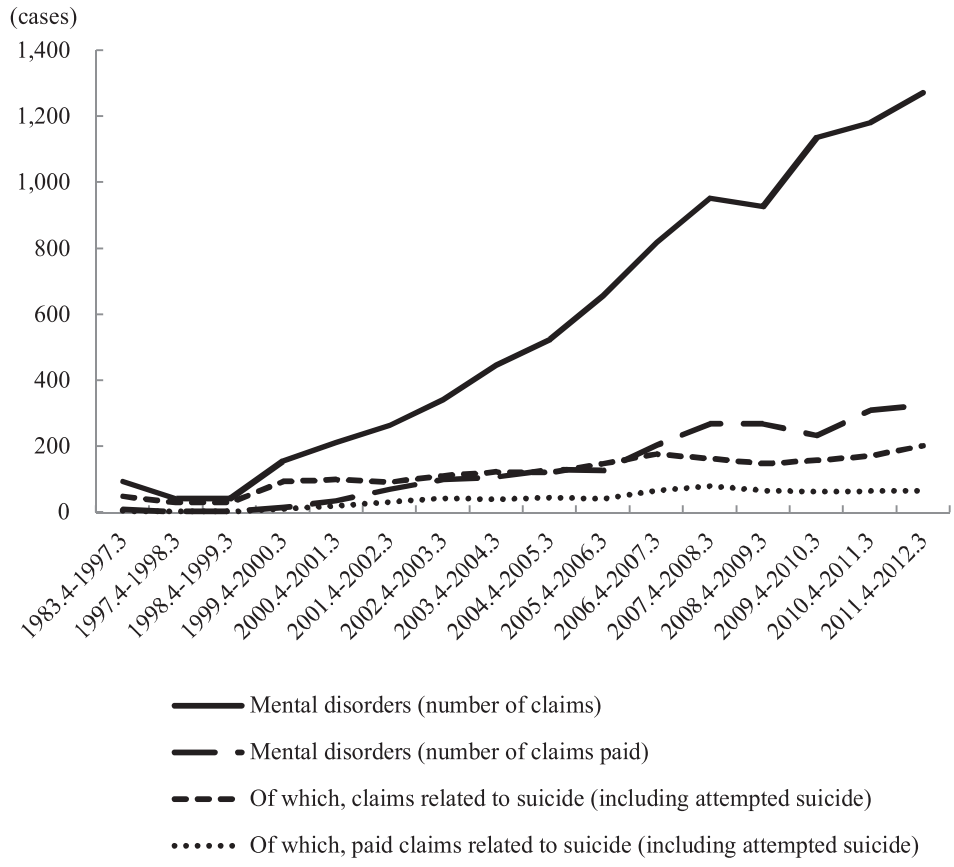
In Japan’s system of certifying occupational injury related to mental disorders, “Judgment Guidelines on Work-Related and Non-Work-Related Mental Disorders Caused by Psychological Stress” were published in 1999. The severity of psychological stress caused by work used to be evaluated by referring to “Workplace Psychological Stress Evaluation Table” in the Guidelines, which was also used to judge whether a disorder was work-related or not. Before these Guidelines were published, there was hardly any certification of workers’ accidents related to mental disorders, as Figure 6 shows.

The Guidelines were partially revised in 2009, when new events were added to the Workplace Psychological Stress Evaluation Table, among other changes. Then, in December 2011, “Certification Criteria for Mental Disorders Caused by Psychological Stress” were published, whereupon the Guidelines were abolished. The Certification Criteria differ from the Guidelines in a number of respects. For example, specific cases illustrating the severity of psychological stress are given in a “Work-Related Psychological Stress Evaluation Table,” and specific evaluation methods are stated for cases with multiple events. For certain events such as sexual harassment, moreover, the Certification Criteria made it possible to backdate the evaluation by six months or more.

Viewing trends in workers’ accident compensation for mental disorders as shown in Figure 6, the “Number of Claims” for workers’ accident compensation is generally increasing year by year; these include around 100 to 200 cases of suicide each year. However, since “suicide” in Figure 6 includes cases of attempted suicide, the latter are not included in statistical data on deaths by suicide published by the NPA and MHLW.

VI. Causes of Suicide

The primary source of statistical survey data on causes of suicide is the “Overview Data on Suicides” published every year by the NPA. Until 2006, a single cause or motive was registered for each suicide. Causes or motives were categorized as “Domestic

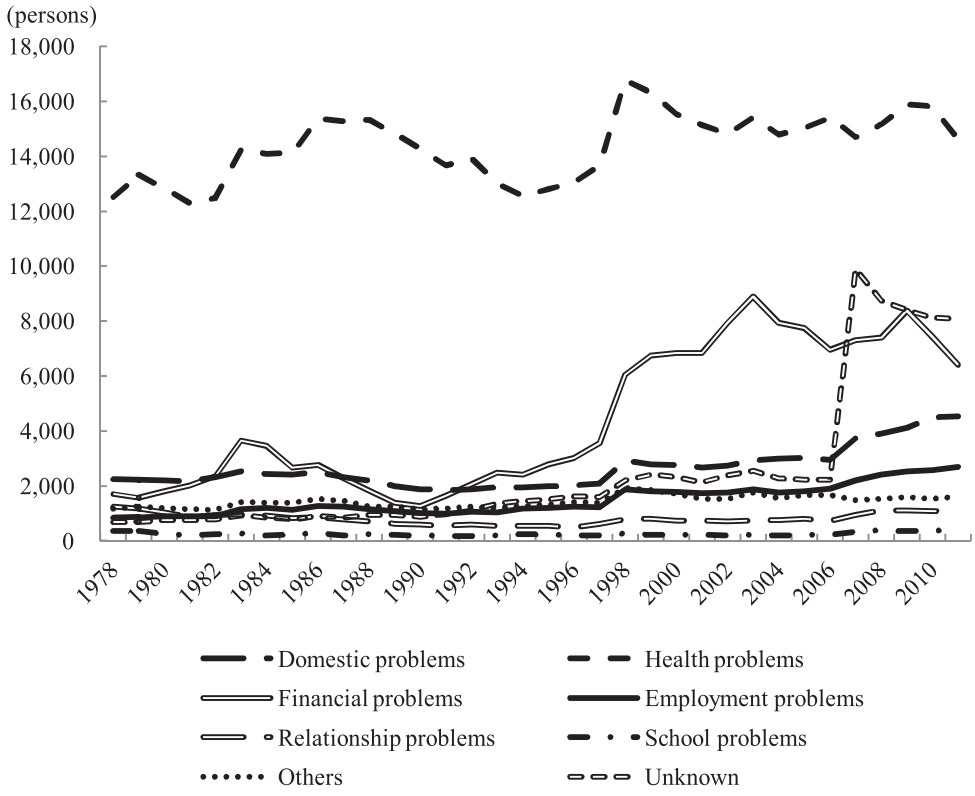


Note: For 1983–1996, the total figures are shown.

Figure 6. Trends in Workers' Accident Compensation for Mental Disorders According to MHLW's "State of Workers' Accident Compensation for Brain and Heart Disease and Mental Disorders"

problems," "Health problems," "Financial problems," "Employment problems," "Relationship problems," "School problems," "Others" or "Unknown." After the revision of suicide statistics forms in 2007, it is now possible to register up to three causes or motives that can be clearly surmised from evidence supporting a single suicide (e.g. suicide notes). This change included the introduction of more detailed subcategories. It should therefore be borne in mind that, since 2007, the total number of deaths by suicide does not tally with the total number of causes or motives.

Figure 7 shows trends in deaths by suicide by cause or motive, according to the NPA. Despite the difference in aggregation method between pre- and post-2007, the most commonly cited cause is "Health problems." Also, ever since deaths by suicide passed the 30,000 mark in 1998, "Financial problems" have been an increasing cause of suicide.



Note: Following a revision of suicide statistics forms, up to three causes or motives per suicide have been counted from 2007 onwards.

Figure 7. Trends in Deaths by Suicide Categorized by Cause or Motive According to NPA Suicide Statistics

"Employment problems" have also been in an increasing trend since 2007. This is thought to reflect the change whereby up to three causes or motives can be registered per suicide, following the revision of suicide statistics forms mentioned above.

The "Suicide Analysis Project Team," formed by an initiative between the NPO corporation Lifelink and the University of Tokyo, conducted an interview survey with 305 relatives of suicide victims between July 2007 and June 2008. For the survey, 56 "risk factors" were selected, through reference to the 52 factors used by the NPA when compiling the "Overview Data on Suicides." The results of the survey are reported in *Jisatsu Jittai Hakusho 2008* [White paper on suicides 2008] (Suicide Analysis Project Team 2008). This includes the statement that "risk factors were certified by members of the Suicide Analysis Project Team, based on the results of the interview survey with surviving family members." All conceivable causes of the suicide were counted, rather than counting a single risk factor per suicide. Among other facts clarified after aggregating the data, it was proved that each victim had been troubled by an average of four risk factors at the time of the suicide; the

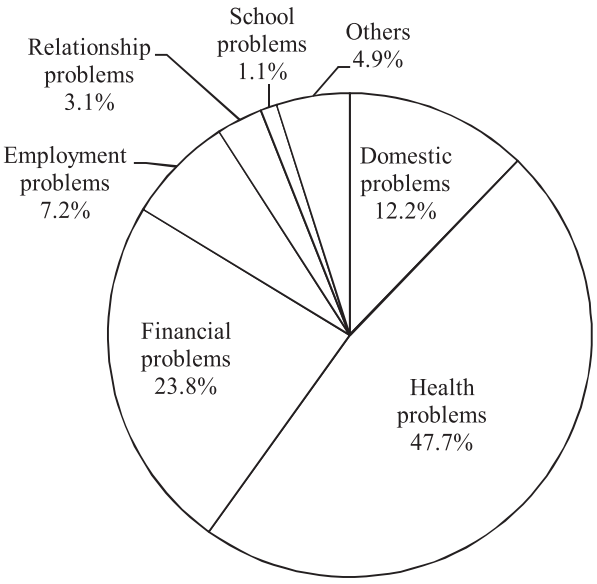


Figure 8. Ratios of Suicides by Cause and Motive According to NPA Suicide Statistics (2007)

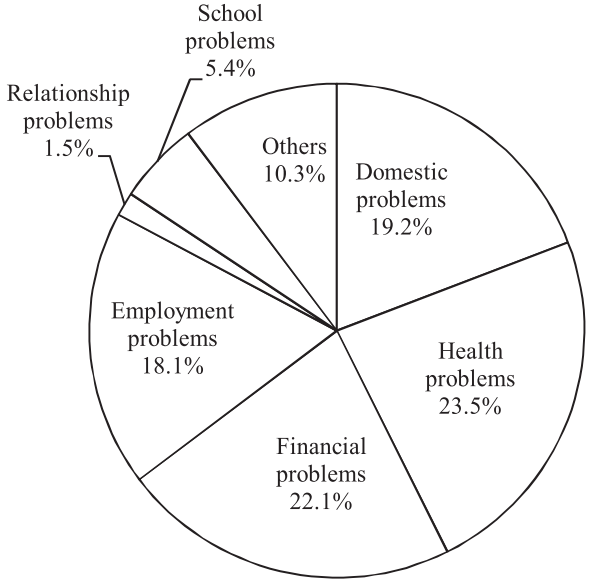


Figure 9. Ratios of Suicide Risk Factors According to the Suicide Analysis Project Team (July 2007 – June 2008)

more common risk factors included depression, domestic discord, debts, physical illness, financial difficulties, human relations in the workplace, changes in the workplace environment, unemployment, business troubles, and overwork.

Figure 8 shows ratios of suicides by cause or motive in 2007 according to NPA statistical data, and Figure 9 ratios of suicide risk factors according to the Suicide Analysis Project Team, for each type of problem. Comparing the two, "Health problems" account for around half of the total in the NPA statistical data, while the ratios of "Domestic problems," "Employment problems" and "School problems" are higher in the data presented by the Suicide Analysis Project Team. This divergence in ratios is thought to arise from differences in the timing and targets of the survey, the person evaluating the cause, and the number of causes available for evaluation.

VII. Conclusion

This paper has mainly discussed statistical data on suicide in Japan. The most representative of such data are those published by the National Police Agency (NPA) and the Ministry of Health, Labour and Welfare (MHLW). However, these do not provide consistent figures, as differences can be seen in their survey method, definition of terms and other features. Moreover, since neither of these statistical data are limited only to workers, the data first need to be processed within the range available in order to study the characteristics and trends of suicides among workers. In the survey results on causes of suicide according to the NPA and Lifelink, the possibility is suggested that employment-related problems have a significant impact on suicide. It is not possible, at the present time, to consult the raw data for the statistics of either the NPA or MHLW, making it difficult to extract and analyze data limited to workers only. In future, however, it will surely be necessary to analyze the backgrounds and characteristics of deaths by suicide limited to workers only, in order to devise more effective countermeasures for suicides and mental health among workers. In the report by the Suicide Analysis Project Team (2008), moreover, psychiatrist Dr Satoru Shima conducted "An analysis of risk paths related to suicide." Though the quotation is rather long, Dr Shima makes the following observation. "It has already been pointed out that a number of factors are involved in suicide. The existence of numerous factors has necessitated a diversity of initiatives to combat them. Often, however, such factors do not exist randomly, but are mutually interrelated. That is, a negative spiral can be seen, whereby one factor gives rise to others. This would seem to suggest that suicide prevention measures should not be implemented piecemeal, but in "linked" fashion as far as possible, going beyond the realms of "cooperation." Not only that, but as in the example of multiple debts, as the negative spiral continues, the force of negative factors seems to increase like a snowball. And once a vicious cycle has started, it develops into a bottomless pit, and it is often difficult for the sufferer to escape from the spiral independently. . . . In many cases, a variety of factors accumulate, until finally depression or some other mental illness occurs. Some of those who

suffer this mental illness contemplate suicide; sometimes, sadly enough, they go as far actually committing suicide. . . . Because the degree of risk complexity in depression is high, this means that a realistic response against the accumulated factors is also required, in addition to drug therapy, mental therapy (psychotherapy, counseling) and other psychiatric treatments. Multi-faceted, multi-dimensional countermeasures also need to be implemented. These include a response to home and workplace environments, financial support, support for multiple debts, appropriate treatment of physical ailments, and employment or re-employment support. At the same time, the use of diverse social resources is also required. To this end, it is thought very important to carry out case work activities, not only by psychiatrists and other doctors, nurses, public health practitioners and counselors, but also by psychiatric social workers (PSW) and others."

This paper has discussed the diversity and cumulative nature of causes of suicide in Japan. Strict psychological autopsies of suicide are still hardly ever conducted in Japan, as they are in other countries. This perpetuates a situation in which it is difficult to narrow down the focus of countermeasures. In future, however, it will be imperative to reduce the number of deaths by suicide, and to that end, as posited by Dr Shima, a need is also seen to focus on the synergistic effects of diverse factors.

References

Cabinet Office. 2012. *Heisei 24 nenban Jisatsu taisaku hakusho* (2012 White Paper on Suicide Prevention in Japan). Tokyo: Shinkosoku Printing.

Suicide Analysis Project Team. 2008. *Jisatsu jittai hakusho 2008 (Dai 2 han)* [White paper on suicides 2008 (2nd edition)]. Tokyo: Suicide Prevention Measures Support Center Lifelink.

Differences in Definitions of Non-Regular Employees in Government Statistics

Ryo Kambayashi
Hitotsubashi University

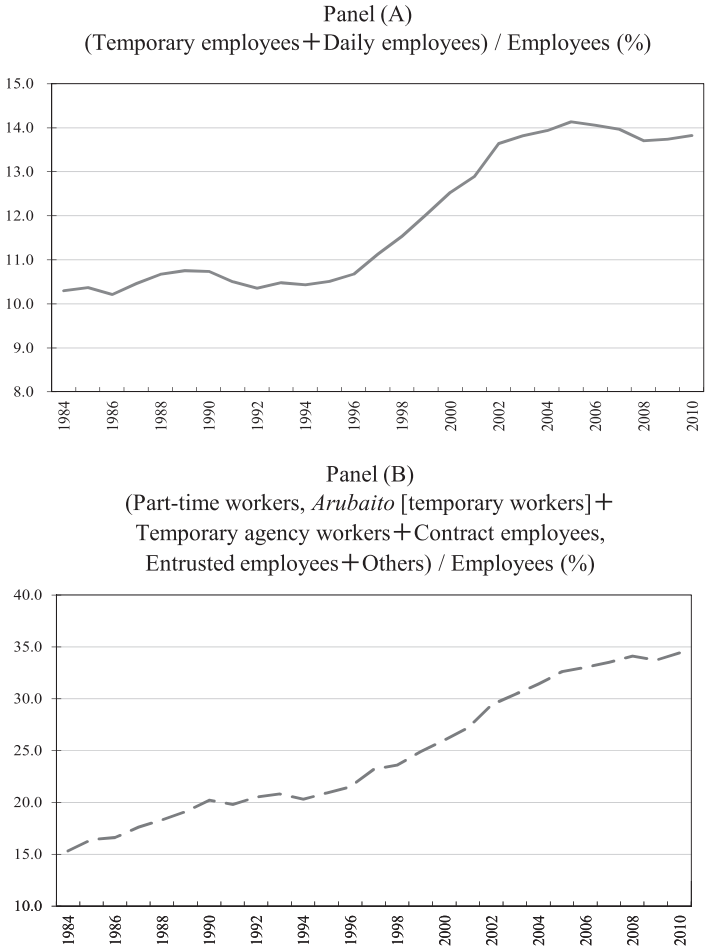
I. Introduction

For anyone involved in labor issues in Japan, it must already be common knowledge that there are several definitions of non-regular employees. What may be less well-known, however, is that different definitions will produce different trends for historical increases in this category. Figure 1 shows trends in the ratio of non-regular employees to employees in general, based on two typical definitions found in the Labour Force Survey by the Ministry of Internal Affairs and Communications (MIC).

In Panel (A), the definition of non-regular employees is based on "employment status," determined according to the length of the labor contract. It shows the ratio of "Temporary employees" (with labor contracts of up to 1 year) and "Daily employees" (contracts of less than 1 month) to all employees. As the maximum length of labor contract was one year by 2005, these categories show the whole of fixed-term contracted workers at least by 2005. In Panel (B), the definition is based on the "type of employment," determined according to descriptions and/or titles used in the workplace. It calculates the ratio of employees not described as "full" or "regular" employees. The resultant figure is normally quoted in expressions like "non-regular employees have passed the 30% mark."

While both Panels show the same general trend in the share of non-regular employees, one cannot fail to notice a clear difference between the two. For example, while the share of non-regular employees in Panel (A) is between around 10% and 15%, in Panel (B) the share is much larger, between 15% and 35%. Of course, although these two figures are based on the same sample, it should not be surprising that the two show different ratios just because they are based on different definitions. What is more noteworthy is that they also differ in the time-series trend for increases in non-regular employees. Under the definition in Panel (A), the ratio of non-regular employees only increased for a relatively short period from around 1996 to 2002; it did not continue to rise throughout the "Lost Two Decades." By contrast, the increase in non-regular employees according to Panel (B) had already started in the 1980s, long before the "Lost Two Decades," and the trend remained relatively constant over a quarter of a century. According to the former definition, the increase in non-regular employees is seen as related to temporary economic change, such as deregulation. Under the latter definition however, it is suggested that the increase in non-regular employees should rather be understood as longer term and more continuous changes in economic structure.

Thus, the definition of non-regular employees is not merely an issue of statistical



Note: Compiled by the author from the Labour Force Survey (Basic Tabulation Historical Data 4 and Detailed Tabulation Historical Data 9). Data from 2011 has been omitted, as results for three prefectures affected by the Great East Japan Earthquake are missing.

Figure 1. Trends in Ratios of Non-Regular Employees According to the Labour Force Survey (1984–2010)

measurement, nor of some futile academic discussion. It needs to be seen as an important economic issue closely related to the role played by non-regular employees in the labor market. This paper sets out to briefly organize the definitions of non-regular employees mainly found in labor statistics administered by the government, and to clarify some economic aspects behind the differences between them.

II. Definitions Based on Working Hours

The definition of non-regular employees in government statistics could be broadly di-

vided into three types. Two of these have already been discussed, namely (A) a distinction based on length of the labor contract and (B) a distinction based on workplace title/description. The remaining is (C) a distinction based on working hours. Even here, there are several differences; in one statistic for example, the definition is based on an absolute level of less than 35 hours per week, while in another, a comparative standard is set, in that "working hours are shorter than those of ordinary workers." Nevertheless, these can be summarized as defining non-regular employees as employees who only work short hours.

Generally speaking, Japanese Government statistics have hardly shown any great enthusiasm in differentiating between regular and non-regular employees as a way of classifying workers. Nevertheless, the oldest of the three definitions must be (C), the distinction based on working hours. At least in the postwar Population Census, the Labour Force Survey[1] (which started in 1947), and other statistics managed by MIC, actual hours worked per week were ascertained. As a result, it was already known very soon after the war that not all employees worked a 48-hour week. That is to say, Japan's low unemployment rate was suspected to result from widespread use of intermediate employment status ("partial employment") by those without full-time work. Therefore, the surveyors in those days intended to measure such phenomena as expressed in phrases like "*shanai shitsugyo*" (unemployment within a company). In recent years, however, these definitions are actually closest to what we would call "part-time workers."

On the other hand, statistics managed by the Ministry of Health, Labour and Welfare (MHLW, formerly the Ministry of Labour [MOL]) have not adopted a simple distinction based on absolute hours worked per week. Their definitions are mainly based on whether or not an individual works shorter hours than ordinary employees, as prescribed in the work rules of the establishment where the individual is employed. In the Basic Survey on Wage Structure, for example, a part-time worker (short-time worker) is defined as "a worker who has fewer scheduled hours worked per day, or who has the same scheduled hours worked per day but fewer scheduled days worked per week than ordinary workers of the establishment." This definition has existed since 1970. It draws directly on the legal definition of short-time workers, as found in the 1968 amendment to the Employment Insurance Act, for example.[2] This relative definition has also been adopted in statistical surveys by MHLW such as the Employment Trend Survey since 1975 and the Monthly Labour Survey since 1989. By contrast, it has still not been used in household surveys managed by MIC. This

[1] The Labour Force Survey itself was first conducted in June 1946, but underwent major changes between November 1947 and March 1948, including sample design. Therefore, it is usual to trace the continuous series back to 1948. For more detail on historical changes in the Labour Force Survey, see MIC (2011).

[2] The plan was originally that the Employment Insurance Act would not apply to workers "employed temporarily on a part-time basis." However, standards based on a comparison with working hours in work rules were presented, following a clarification of standards for application to short-hour workers in a 1968 notification by the Director of the Unemployment Insurance Division (Hamaguchi 2010, 35–36).

Note: Compiled by the author from the Labour Force Survey (employees in non-agricultural industries) and the Employment Trend Survey. For the latter, the number of full-time employees at the start point in Historical Data 1 was used. Between 1975 and 1978, the number of part-time workers was not given in Historical Data 1. The figure was therefore obtained by reverse-calculation from the hiring ratio of part-time workers reported in the Outline. Data from 2011 has been omitted, as results for three prefectures affected by the Great East Japan Earthquake are missing.

Figure 2. Trends in Ratios of Non-Regular Employees Based on Working Hours (%): 1975–2010

shows how much statistical definitions devised by MOL/MHLW have been in line with Japanese labor law.

Figure 2 compares the ratio of non-regular employees based on the absolute definition of 35 hours per week, with that based on the relative definition of working hours in work rules. In reality, therefore, these two definitions may not be so markedly different. However, the actual reason why the figure of 35 hours is often used is thought to be one of convenience, because the Labour Force Survey publishes aggregated data using 35 hours as a dividing line. To be fair, ILO and other international organizations have set 35 hours per week as some kind of defaults (such as the definition of part-time workers) in international arrangements, but not many of these existed back in 1947. One speculation is that the Current Population Survey in the U.S., developed in tandem with Japan's Labour Force Survey, also sets 35 hours per week as the standard for short working hours. This could have affected the

definitions of other countries and institutions.

The graph shows the ratio of employees in non-agricultural industries who actually worked less than 35 hours per week, according to the Labour Force Survey. Alongside this is the ratio of part-time employees to full-time employees calculated as of January 1st every year, according to the Employment Trend Survey.[3]

Overall, it would appear that the ratio of short-hour workers was not so high immediately after the war, but entered a gradually rising trend from the second half of the 1960s, with the speed of this rise accelerating somewhat in the 1990s. Comparing the time-series trends with those in Figure 1, they resemble Panel (B) (title/description definition) rather than Panel (A) (contract term definition). We should be careful that the population of the Employment Trend Survey is limited to establishments employing five or more full-time employees; its coverage therefore differs from that of the Labour Force Survey (a household survey). As such, it would be natural for there to be a discrepancy between the two standards in the figure.

But it is interesting that the time-series trends resemble each other so closely, even though the role of the absolute level of 35 hours per week changed, in relative terms, from representing around 70% of full-time hours to representing around 90% due to an amendment to the Labor Standards Act. The maximum weekly working hours shifted from 48 hours to 40 hours during this period. In spite of the change in relative importance of the 35 hour system, there is not such a great difference between the two trends in the figure. This implies that, for short-time workers, the very fact of working shorter hours than ordinary workers is in itself the major difference, giving rise to the doubt that how many hours they are behind the working rules may not be so terribly important.

III. Definition Based on Contract Length or Workplace Title/Description

A definition as old as that based on working hours is the definition based on the length of the labor contract. This has been in continuous use under the statistical term “employment status” since the Labour Force Survey was launched in 1947. Within this, categories frequently used today are “full-time employee” (open-ended contract, or an excess of 1 year), “temporary employee” (a limit of 1 year or less), and “daily employee” (a limit of less than 1 month). However, it was only in 1959 that these three categories were first used in the Labour Force Survey and its supplements. Until then, there were only two catego-

[3] Things would be simpler if the definition based on a comparison with working hours in work rules were incorporated in the Basic Survey on Wage Structure. However, the only figures published in this Survey for part-time workers until 1987 were those aggregated for women; it is not possible to calculate the ratio of part-time workers and ordinary workers including men, except for the years 1970 to 1973. Figures for men were reported between 1988 and 1994 in the totals for business scale in all industries, but figures for male part-time workers have only been published in all aggregate tables since 1995. It should be noted, moreover, that the Contents and Title of reports between 1988 and 1994 use the somewhat misleading expression “Part-time female workers.”

ries—daily employees with a contract period of less than 1 month, and others (i.e. the total of full-time and temporary employees).[4] This is probably because, until the 1950s, the focus of classifying employment status rested on the distinction between self-employed workers or family workers on the one hand, and employees on the other. Relatively little emphasis was placed on finer distinctions within the category of employees. This made it more important to set aside seasonal or temporary workers with extremely short labor contracts. It was therefore more useful to investigate whether the length of the labor contract was extremely short, as with daily employees, rather than a distinction based on whether the length of the labor contract was fixed or not.

Of course, distinctions based on the contract term have also been incorporated in establishment surveys managed by MOL/MHLW. Here again, however, there are not three categories but two (full-time employees and temporary/daily employees). Generally, the distinction between the two could be said to lie in whether the labor contract is fixed-term or open-ended. In the Employment Trend Survey, for example, the two categories of full-time employees and temporary/daily employees were adopted from its launch in 1964. And in the Basic Survey on Wage Structure, microdata included the distinction between fixed-term and open-ended contracts from 1967 onwards. In the first place, a clear distinction is made between fixed-term and open-ended labor contracts in labor law. For example, there is said to be a big difference between the two in the final phase of a labor contract. In the case of a fixed-term labor contract, the contract is automatically terminated in principle at the end of the specified term. With an open-ended labor contract, conversely, the contract remains in force unless either the employer or the employee gives notice of cancellation. Some claim that the very disparity between regular and non-regular employees is the problem when it comes to restrictions on dismissal. This claim could be said to derive from a rationale, grounded in labor law, that emphasizes this difference between fixed-term and open-ended contracts. Although the MOL/MHLW statistics took account of distinctions between employees from an early stage, they could rather be summarized as adopting the administrative perspective of fixed-term or open-ended contracts in direct response to regulation under the Japanese labor law. In this respect, they were unlike the MIC household surveys, which placed emphasis on identifying partial employment in reality.

Of the main definitions of non-regular employment, the statistically most recent is the distinction based on title/description in the workplace. The adoption of this definition in the 1982 Employment Status Survey provided the impetus for its incorporation in the Labour Force Survey (Detailed Tabulation). More recently, it was adopted by the Basic Survey on Wage Structure in 2005.

Table 1 gives a brief summary of these three definitions as they appear in each of the main statistics.

[4] The Employment Status Survey, which used three categories from the start of surveys in 1956, was earlier than this.

Table 1. Definitions of Non-Regular Employees According to Statistical Surveys

		Population and sample size[a]		Survey frequency	Definition of non-regular employees			
					Distinction based on length of labor contract[b]	Distinction based on title/ description	Distinction based on working hours	
							Weekly working hours (less than 35 hours)	Comparison with working hours in work rules
Population Census	Household survey	All households	Census	Every 5 years	1950–	×	1950–	×
Labour Force Survey	Household survey	All households	40,000 households	Monthly	1947–	×	1947–	×
Detailed Tabulation (formerly Special Survey)	Household survey	All households	10,000 households	Monthly	1953–	1984–	1953–	×
Employment Status Survey	Household survey	All households	450,000 households	Every 5 years	1956–	1982–	1956–	×
Basic Survey on Wage Structure	Establishment survey	5 or more employees	77,000 businesses	Yearly	1967–	2005–	×	1970–
Monthly Labour Survey	Establishment survey	5 or more employees	33,000 businesses	Monthly	×	×	×	1989–
Employment Trend Survey	Establishment survey	5 or more employees	15,000 businesses	Yearly	1964–	×	×	1975–

Notes: [a]Based on the latest version of each survey. Note that some surveys may have changed.

[b]Note that both household surveys and establishment surveys started with two categories (the former with full-time/temporary employees and daily employees, the latter with full-time employees and temporary/daily employees).

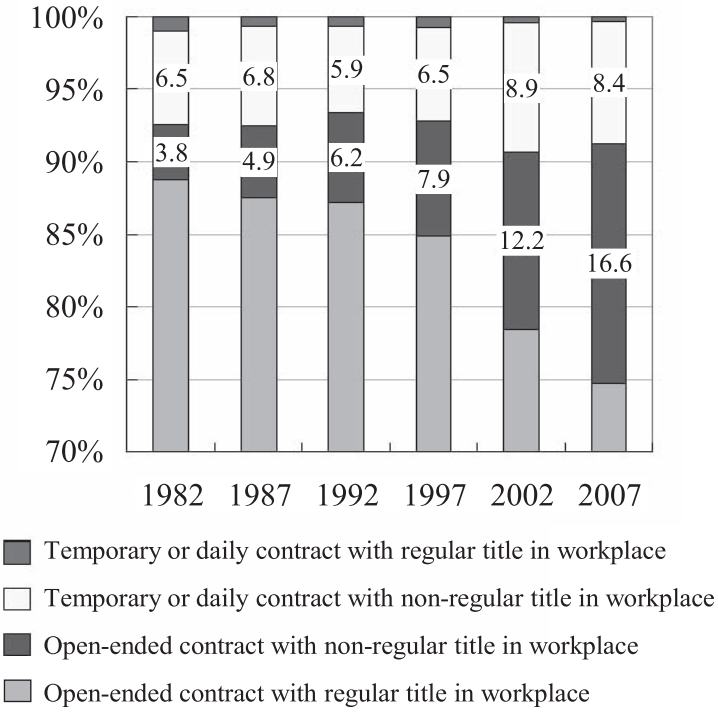
In general, household surveys have commonly adopted definitions based on actual working conditions (e.g. the workplace title/description or weekly working hours). But in establishment surveys, the definition more often revolves along with the legal term in law, such as the length of the labor contract or whether hours worked are shorter than those specified in work rules. Also, several of the government statistics use more than one definition simultaneously, suggesting that we can exploit the relationships between definitions. In the next section, as one attempt, I would like to introduce some research that examines the relationship between definitions.

IV. Correlation between Definitions

As already shown in Figure 1 above, the two definitions explained in the previous section (i.e. distinctions based on the length of the labor contract and on the workplace title/description, respectively) provide different aggregations for non-regular employees in both ratios and increasing trends. In that case, we may predict that not all non-regular employees based on title/description have fixed-term contract, and that, particularly up to the first half of the 1990s and from the 2000s onwards, the increase in non-regular employees mainly involved the former rather than the latter. At present, the Ministry does not provide the cross-tabulation in public; however, Figure 3 from Kambayashi (2010) shows the relation between the two definitions by using the microdata of the Employment Status Survey.

In Figure 3, employees aged 18 to 70 who are mainly working are divided into four categories of contract-based "open-ended contract employees," versus "temporary or daily contract employees," and title/description-based "regular employees," versus "non-regular employees." The graph shows ratios of each combination between the years 1982 and 2007, clearly showing how the declining ratio of regular employees in the 1990s was offset by an increase in employees classified as "Open-ended contract with non-regular title in workplace." This highlights an increase in employees who still have open-ended or minimum one-year labor contracts, but are not titled as regular employees in the workplace. Although the ratio of contract-based non-regular employees (i.e. fixed-term contract employees) increased in the second half of the 1990s, the size of this increase was evidently smaller than the increase in description-based non-regular employees. Kambayashi and Kato (2012) point out that the scale of this increase in open-ended contract non-regular employees is more or less offset by a decrease in self-employed or family workers. As such, it should also be noted that the ratio of regular employees as a proportion of the population (not of the employee) barely changed between the 1980s and the 2000s.

On this point, "Open-ended contract employees" have been truly divided between those with fixed-term contracts and those with open-ended contracts in Labour Force Surveys since January 2013, because the adamancy of the Labor Standard Law in 2005 extends the maximum of contracting terms from one year to three years. Although the Ministry does not publish the cross-tabulation, the difference between numbers of employees with



Note: Kambayashi (2010), Figure 4. For more details on the graph, see Kambayashi (2010).

Figure 3. Ratios of Non-Regular Employment in Employment Status Surveys (1982–2007)

open-ended contracts and those not described as regular employees in their workplace averaged 4.04 million between January and April, or around 7.4% of all employees in non-agricultural industries. This is about half of the 16.6% shown under "Open-ended contract with non-regular title in workplace," according to the Employment Status Survey in Figure 3. This is probably the result of blurred measurement due to changes in survey items, as well as differences in the original measurement concepts of the Labour Force Survey and the Employment Status Survey (the former being based on "actual standards" and the latter on "usual standards").[5]

Next, Kambayashi (2010), Kawaguchi, Kambayashi, and Hara (2011), and Kambayashi and Kato (2012) carried out a simple regression analysis to ascertain whether the distinction based on labor contracts is more strongly correlated to the working

[5] The average ratio of regular employees to employees in 2007 Labour Force Surveys was around 86%, lower than in the Employment Status Survey where it exceeded 90%. Even within Labour Force Surveys between December 2012 and January 2013, the ratio of employees to persons in employment was little changed at around 87%, but that of regular employees to employees jumped from 86% to 91%. This proves that changes in survey items do have an impact.

Table 2. Impact of Contract Term and Title/Description on Hourly Wage

Sample	(1)	(2)	(3)	(4)	(5)	(6)
	1987		1997		2007	
	Males	Females	Males	Females	Males	Females
Dependent variable	Log of hourly wage					
Estimation method	OLS					
Contract/Non-regular (BASE=Contract/Regular)	-0.011 (0.005)	-0.008 (0.006)	-0.019 (0.006)	-0.009 (0.005)	-0.032 (0.005)	-0.012 (0.005)
Description/Non-regular (BASE=Description/Regular)	-0.187 (0.004)	-0.151 (0.005)	-0.122 (0.005)	-0.243 -0.004	-0.221 (0.004)	-0.185 (0.004)
Observations	253691	105560	207336	139923	214729	131832
Adj. R-squared	0.53	0.42	0.54	0.43	0.46	0.35

Note: Quoted directly from Kawaguchi, Kambayashi, and Hara (2011), Table 4. Figures in parentheses are the standard error. Besides the constants, age, age squared, tenure, tenure squared, educational attainment dummy, industrial classification dummy (1 digit), occupational classification dummy (1 digit), and firm size dummy and prefecture dummy were introduced as control variables. The sample for analysis was limited to persons in employment mainly engaged in work. Hourly wages were calculated as follows. First, the median value of annual incomes in each category was taken. Next, the median value of the annual working days category was divided by seven to calculate the number of annul working weeks, and this was multiplied by the median of the working hours per week category to obtain working hours per year. Finally, annual income was divided by working hours per year to obtain the wage rate.

conditions of non-regular employees than that based on title/description. As a result, they report that the distinction based on title/description shows a more important role in actual working conditions (such as hourly wages) than that based on labor contract. As an example of this analysis, Table 2 directly quotes the results of Kawaguchi, Kambayashi, and Hara (2011) on the relationship between definitions and hourly wage.

In the Table, "Contract/Non-regular," is a dummy variable with value 1 if the employment status is "temporary employee" or "daily employee," and 0 for "open-ended contract employee." "Description/Non-regular" is a dummy variable with value 1 if the workplace title/description is not "regular employee," and 0 if it is "regular employee." Taking column (1), for example, for male employees in 1987, the hourly wage was about 1.1% lower if the labor contract had a fixed term compared to an open-ended one. If the workplace description was "non-regular," there was an hourly wage difference of 18.7% compared to regular titled employees, which clearly shows the importance of title/description in workplace rather than contract term. This relationship is consistently observed, regardless of the survey year or gender. Kambayashi (2010), Kawaguchi, Kambayashi, and Hara (2011), and Kambayashi and Kato (2012) point out that the same relationship is generally observed

not only for hourly wage, but also for working hours, employee turnover propensity, and participation in training. This estimation result means that workplace title/description is more closely related to the determinants of working conditions. On the contrary, the slackness of the contract term suggests the weak effectiveness of labor law regulations, because it can be predicted that if labor law regulations strongly regulate working conditions, the length of the labor contract will show a stronger correlation than workplace title/description would.[6]

V. In Lieu of a Conclusion

This paper has given an overview of how several definitions of non-regular employees have been handled by government statistics in Japan. It has also suggested that an employee's title/description in the workplace is more closely connected to working conditions than the length of the labor contract, based on Kambayashi (2010), Kawaguchi, Kambayashi, and Hara (2011), and Kambayashi and Kato (2012). Particularly, the negligent role of contract term compared to the title/description will indicate the effectiveness of legal assignment in the Japanese labor markets.

Of course, the subject of how to define non-regular labor has been discussed *ad infinitum*, and cannot be reduced to the three definitions in government statistics introduced in this paper. In recent years, jobs with good qualities have come to be distinguished from those with bad ones by studying the various aspects of jobs, or in other words, the actual facts of working conditions. And some researchers have come to emphasize that so-called non-regular labor is concentrated in the latter.[7] On the other hand, it is not necessarily easy to convert the actual facts of working conditions into data; authorities in various countries could be seen as being at the trial and error stage in this respect.

References

Hamaguchi, Keiichiro. 2010. Rodo shijo no sefuti netto [The safety net of the labor market]. JILPT Labour Policy Report vol.7, the Japan Institute for Labour Policy and Trainin, Tokyo.

Kalleberg, Arne L. 2011. *Good jobs, bad jobs: The rise of polarized and precarious employment systems in the United States, 1970s–2000s*. New York: Russell Sage Founda-

[6] Kambayashi (2010) confirms the same trend using the Basic Survey on Wage Structure, as an addendum.

[7] Kalleberge (2011), among others. In recent years, OECD has put its weight behind the creation of a compound indicator called the Better Life Index. The purpose of this is to take a pluralistic view of social welfare from multiple angles, one of which is a compound indicator related to jobs. While this kind of index does not tackle the dichotomy of regular versus non-regular, it could be seen as one attempt to measure the quality of jobs.

tion, American Sociological Association Rose Series in Sociology.

Kambayashi, Ryo. 2010. Joyo, hiseiki rodosha no shoso [Aspects of full-time, non-regular employees]. Global COE Hi-Stat Discussion Paper Series no. 120, Hiotsubashi University, Tokyo.

Kambayashi, Ryo, and Tako Kato. 2012. Good jobs, bad jobs, and the Great Recession: Lessons from Japan's lost decade. IZA Discussion Paper Series no. 6666, IZA, Bonn.

Kawaguchi, Daiji, Ryo Kambayashi, and Hiromi Hara. 2011. Seishain to hiseishain wo wakatsu bunsuirei: Hiseishain wo do tokei de toraeruka? [The dividing line between regular and non-regular employees: How to perceive non-regular employees in statistics?]. Mimeograph.

MIC (Ministry of Internal Affairs and Communications). 2011. Rodoryoku chosa no kaisetsu (dai 3 pan) [Commentary on the Labour Force Survey (3rd Edition)]. http://www.stat.go.jp/data/roudou/pdf/hndbk.pdf.

Labor Turnover and Movement

Masahiro Abe
Chuo University

I. Introduction

As of January 2011, the number of employed persons in Japan was 44.44 million. Of this number, 14.4%, or 6.41 million people, separated from their jobs during 2011.[1] The fact that 14.4% of employed persons left their jobs in the course of one year supports the perception that Japan is a country in which few people leave their jobs, even when compared to other developed countries.

The general view concerning Japan's labor market is one that sees a low unemployment rate and stable employment. Even as stability in the labor market fluctuates in line with economic fortunes, this view may still be valid in the case of Japan.

Nonetheless, the number of job changers in Japan's labor market is growing compared to past years, and even large enterprises, which previously only hired new school graduates, have become actively involved in mid-career hiring in recent years. Moreover, dismissals by enterprises, and particularly small- and medium-sized enterprises (SMEs), happen more frequently than is thought.

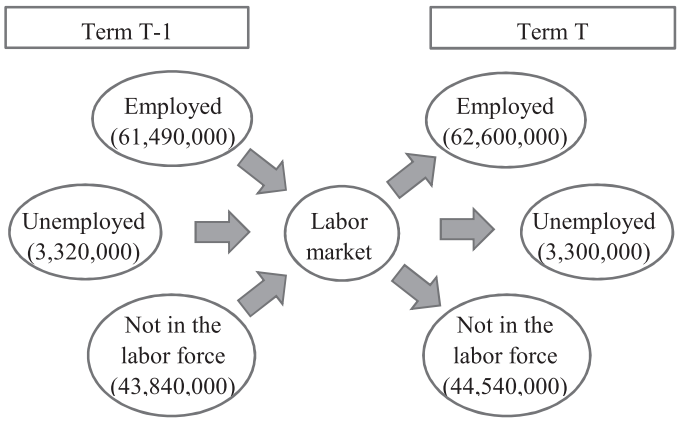
This manuscript presents the Labour Force Survey (Statistics Bureau, Ministry of Internal Affairs and Communications [MIC]) and Survey on Employment Trends (Ministry of Health, Labour and Welfare [MHLW]), which are the main statistical surveys that provide clues to understanding job turnover and movement in Japan.

II. The Stock and Flow of Employment

Figure 1 provides an illustration of job movement in the labor market. The figure shows the labor force status[2] of people in term T and term T-1. People in each of the terms are employed, unemployed, or not in the labor force. The possibility of change in labor force status from T-1 to T is high. The arrows in the figure signify movement in labor force status. For example, given that it is common in Japan for new school graduates to enter companies in April, these people will move from "not in the labor force" to "employed." At the same time, given that many people who have reached mandatory retirement age will retire in March, those that are retiring will move from "employed" to "not in the work

[1] Here, "separate from job" includes cases of workers' leaving their jobs voluntarily and cases of workers' leaving their jobs at the convenience of the company, such as due to dismissal or closure of a business office.

[2] The term "labor force status" as it is used here does not refer to an individual's status during employment. Instead, it refers to the status of people included in the working-age population in terms of one of three categories: "employed," "unemployed," and "not in the labor force."



Source: Statistics Bureau, MIC, *Labour Force Survey 2010.*
Note: Figures in parentheses are actual numbers of people.

Figure 1. Illustration of Labor Movement

force." Generally speaking, it is possible that people who were employed in T-1 are continuing employment in T, or that they are unemployed because they quit or lost their job. It is also possible that they are no longer in the labor force. On the other hand, it is possible that people who were unemployed or not in the labor force in T-1 are now employed in T, or that they remain unemployed or not in the labor force.

In this way, changes in labor force status from T-1 to T can be identified in three tracks each for employed, unemployed, and not in the labor force. This results in a total of nine tracks. The numbers of people in the labor movement of these nine tracks are estimated in the Labour Force Survey.[3] An indicator called "transition probability" that is calculated using these estimates is presented in Table 1. For example, the probability that people who were employed in T-1 would still be employed in T is 98.2%. This figure is arrived at by dividing the number of employed people in T by the number of employed people in T-1.

Incidentally, the Labour Force Survey is positioned as the most basic of statistical surveys when analyzing the labor market. This statistical survey is conducted at the end of each month for the purpose of ascertaining the number of employed people, number of unemployed people, and the size of the labor force, and it estimates the labor force participation rate, unemployment rate, etc. The labor force participation rate and unemployment rate respectively show the percentage of people participating in the labor force among people aged 15 years or older and percentage of unemployed people in the labor force participation rate at the time of the survey. They are called stock indicators because they show percentages that reflect labor force conditions at a particular point in time. On the other hand, the above-mentioned transition probability shows the degree of movement of workers from one

[3] There are some who claim that figures indicating transition in labor conditions as surveyed in the Labour Force Survey are problematic. For a detailed discussion, see Ota and Teruyama (2003).

Table 1. Transition Probability of the Labor Market

Current employment status (term T)	Employment status of previous year (term T-1)			
	Employed persons	(Employees)	Unemployed persons	Not in the labor force
Employed persons	6001 (98.2%)		36 (10.0%)	81 (1.8%)
(Employees)		5149 (98.5%)	31 (8.6%)	55 (1.2%)
Unemployed persons	33 (0.5%)	28 (0.5%)	257 (71.4%)	30 (0.7%)
Not in the labor force	80 (1.3%)	50 (1.0%)	36 (10.0%)	4240 (96.2%)

Source: Statistics Bureau, MIC, *Labour Force Survey (Detailed Tabulation) 2012*.
Note: Figures on the top row are actual number of people (10,000 people). Figures in parentheses are transition probability.

term to another term. Thus, it is called a flow indicator. The labor force participation rate and unemployment rate, which are stock indicators, are highly significant as statistical indicators; however, transition probability, which is a flow indicator, is no less significant.

This is because using transition probability makes it possible to analyze movement in the unemployment rate in terms of "employment to unemployment," "unemployment to unemployment," and "not in the labor force to unemployment." For example, when the unemployment rate is rising, a case in which "employment to unemployment" rises and in which "unemployment to unemployment" rises would represent a completely different set of labor market conditions. If only "employment to unemployment" rises, this could suggest that, although many people have lost their jobs, the possibility exists that employment will be created when the economy recovers, thus eliminating unemployment. On the other hand, rising "unemployment to unemployment" would mean that the number of long-term unemployed people is increasing, and this may suggest that creation of employment will be smaller than loss of employment, or that forces that adjust supply and demand in the market are not functioning and therefore generating a growing mismatch. Accordingly, using this flow indicator makes it possible to roughly identify whether variations in the unemployment rate are caused by variations in lost employment and created employment or result because adjustment of supply and demand in the labor market is not functioning correctly.

III. Reasons for Job Separation

Why does labor movement occur? Let us examine this question by first looking at the reasons why people leave their jobs.

One reason people leave their jobs is movement due to the circumstances of their companies. For example, if a company closes a factory as part of a restructuring program and dismisses employees as a result, the people who worked at that factory would be forced to undergo labor movement. Even if the factory's closure does not result in dismissal, there are likely cases in which employees must move to another business office. Additionally, employees who have reached a mandatory retirement age set independently by the company must undergo labor movement.

On the other hand, there are some who resign from their jobs to search for other jobs that offer better conditions. Such cases represent movement due to personal circumstances. And even today there are still many women who leave their jobs for marriage or childbirth; such cases are also movement due to personal circumstances.

So then, which happens more often, movement due to circumstances of the company or movement due to personal circumstances? Two statistical resources are useful in examining this question. One is the Labour Force Survey (Detailed Tabulation) and the other is the Survey on Employment Trends.

First, the special questionnaire[4] of the Labour Force Survey asks workers directly for the reason they left their previous job. Respondents are permitted to choose from the following as the reason they left their job: "Bankruptcy or close down of office," "personnel retrenchment or encouraged retirement," "slump in business and uncertain future," "retiring age or the term of your employment agreement ended," "to find a better job," "for marriage or childbirth and child-rearing," "for caring aged or sick family member," "for housework or schooling, and because of poor condition of health," and "other." Of these, "bankruptcy or close down of office," "personnel retrenchment or encouraged retirement," "slump in business and uncertain future," and "retiring age or the term of your employment agreement ended" represent job separation due to circumstances of the company. All of the other reasons represent job separation due to personal circumstances.

Figure 2 shows calculated percentages of reasons given for job separation by people whose previous employment was "non-agricultural employee" and who resigned within the past three years, using Labour Force Survey (Detailed Tabulation), which summarizes the results of the Special Questionnaire. According to the figure, some 40% of all resigned workers resigned due to circumstances of their company, and the remainder did so due to personal circumstances.

On the other hand, the Survey on Employment Trends surveys the numbers of the entrances of new employees or resigned workers, circumstances concerning job accession and job separation, and circumstances of unfilled vacancies at targeted business offices in order to clarify the actual circumstances of labor movement and unfilled vacancies. As for

[4] The questionnaire for the Labour Force Survey comes in two forms, a Basic Questionnaire and a Special Questionnaire. The former surveys the same two months in two successive years, while the latter is used in the second month of the second year. For details, see Annual Report on the Labour Force Survey and the website of the Statistics Bureau, MIC.

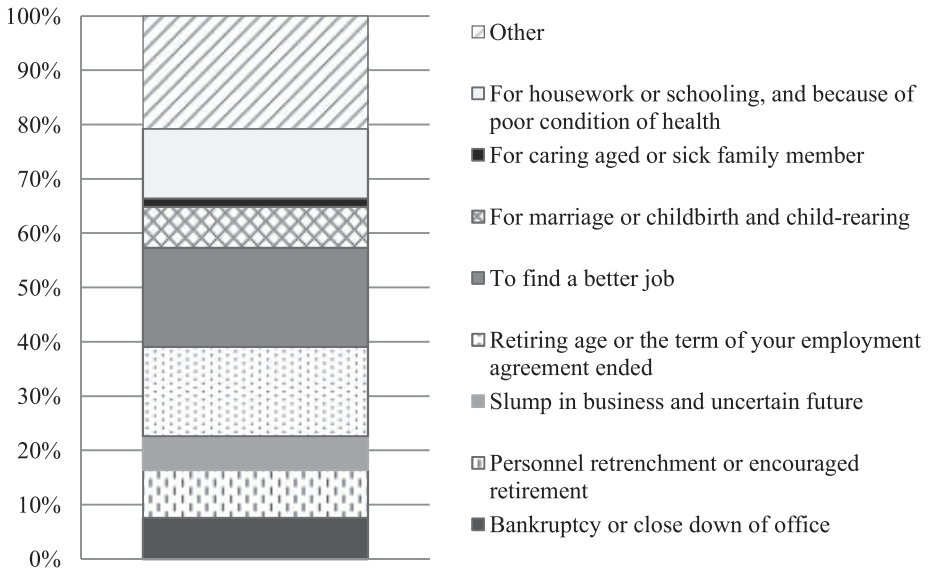


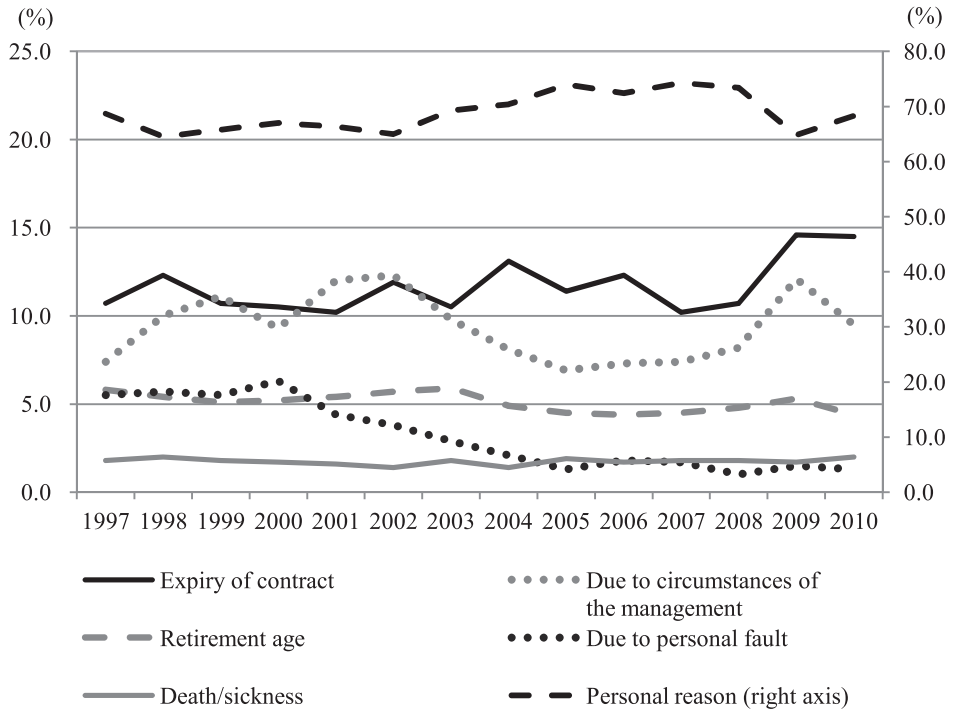
Figure 2. Percentages of Separation Reasons of People Who Resigned from Previous Job within the Past Three Years (Totals of Men and Women)

job separation reasons given by people who left an establishment,[5] respondents[6] selected from "expiry of the contract," "due to circumstances of the management (including management circumstances, secondment, reinstatement, etc.)" "retirement age," "due to personal fault," "personal reasons (including marriage, maternity/child care, long-term care, and others)," and "death/sickness." The options offered here differ slightly from those of the Labour Force Survey. Looking at options that are not included in the Labour Force Survey, "due to personal fault" assumes punitive dismissal and thus is not considered to be leaving a job due to circumstances of the company, and "death/sickness" is considered to be neither due to the circumstances of the company nor due to personal circumstances.

Figure 3 shows changes in percentages of job separation reasons since 1997. The percentage of job separation due to circumstances of the company, which is the total of "expiry of contract," "due to circumstances of the management," and "retirement age," is slightly lower than that of the Labour Force Survey, while "personal reasons" is slightly higher than those due to personal circumstances of the Labour Force Survey. This appears to be because the Survey on Employment Trends is a survey of business offices, and thus responding persons at the targeted business offices may have hesitated to say that a separation

[5] The questionnaires used by the Survey on Employment Trends are a questionnaire for business offices, a questionnaire for resigned workers, and a questionnaire for new employees. The questionnaires for business and resigned workers are filled out by businesses. For details, see the Survey on Employment Trends Summary Report and MHLW website. Notations in this section are based on the questionnaire for resigned workers.

[6] Respondents are not workers but rather personnel officers of targeted enterprises.



Source: MHLW, *Survey on Employment Trends 2010*.

Figure 3. Change in Percentages of Job Separation Reasons

was due to circumstances of the company or did not know the actual circumstances because they did not pursue the reason for separation to the point of discovering that it was for personal reasons.

IV. After Job Separation

After people leave their jobs, their status should be one of the following: They have looked for a new job and become "employed," are looking for a new job but are currently "unemployed," or are not looking for a new job and are "not in the labor force."

So what influences people to look for a job or not?

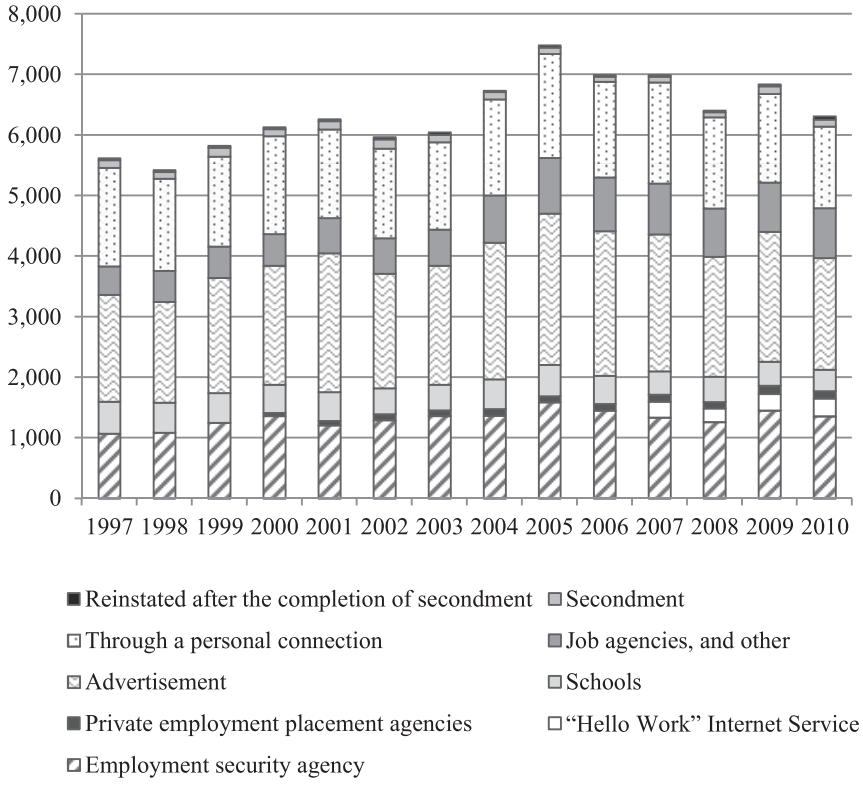
Figure 4 uses the Labour Force Survey to show the percentages of each labor force status after job separation by reason for separation. The reason with the highest percentage of employed people is "to find a better job," followed by "slump in business and uncertain future." The percentages of people who are employed in "bankruptcy or close down of business" and "personnel retrenchment or encouraged retirement" are slightly lower. However, when people who are currently looking for employment are included, the percentages of people in the labor force for people whose reason for job separation was "slump in

Source: Statistics Bureau, MIC, *Labour Force Survey (Detailed Tabulation) 2010*.

Figure 4. Percentages of Separation Reasons of People Who Resigned from Previous Job within the Past Three Years (Totals of Men and Women)

business and uncertain future," "bankruptcy or close down of office," and "personnel retrenchment or encouraged retirement" are high compared to those who resigned for other reasons. Conversely, the percentage of the status "not in the labor force" is extremely high for people whose reason for separation was "for marriage or childbirth and child-rearing." The percentage of "not in the labor force" is also high for people whose reason was "for housework or schooling, and because of poor condition of health."

Thus, there is a connection between reason for job separation and labor force status, and this connection is consistent with results predicted by (economic) theory. In other words, the reservation wages (paid for work) of people who left employment for reasons of marriage, childbirth, or long-term nursing care are predicted to be relatively higher than market wages, and consequently the labor force participation rate of such people is low. On the other hand, the reservation wages of people who left employment to find a better job or



Source: MHLW, *Survey on Employment Trends 2010*.

Figure 5. Changes in Number of New Employees by Route to New Employment (1,000 people)

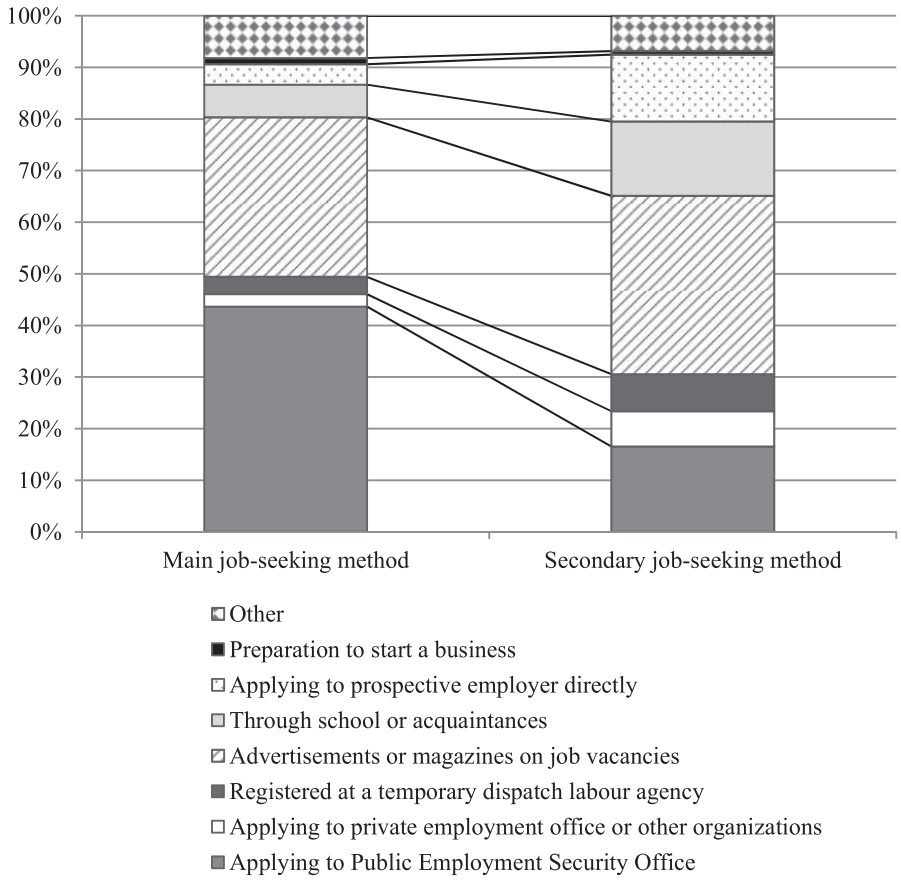
were forced to leave employment due to circumstances of the company are predicted to be lower than market wages, and thus the labor force participation rate of such people is high.

Incidentally, what forms of job-searching do people who have found employment and people who are looking for employment use after job separation?

The Survey on Employee Trends surveys the routes people who successfully found employed used to find employment.[7] The routes surveyed are use of job agencies in the forms "employment security agencies," "Hello Work Internet Service," "private employment placement agencies," "schools," "advertisement," and "others," and use of personnel connections or secondment in the forms of "through a personal connection," "secondment," and "reinstated after the completion of the secondment."

Figure 5 shows changes in the number of new employees by the route used. Here, the

[7] Notations in this section are based on the questionnaire for new employees. Please note that the questionnaire for new employees is filled out personally by new employees who have been selected for sampling.



Source: Statistics Bureau, MIC, *Labour Force Survey (Detailed Tabulation) 2010*.

Figure 6. Percentages of Methods Used to Search for Employment

most commonly used route is "advertisement" followed by "through a personal connection" and "employment security agencies." Since 2000, the percentage of people who found employment through approved private employment placement agencies is growing but still remains extremely small.

On the other hand, the ways in which job-seekers look for employment can be seen in the Labour Force Survey (Detailed Tabulation). The Special Questionnaire Form asks job-seekers to indicate their method of searching for employment by selecting from the following choices: "Applying to Public Employment Security Office," "applying to private employment office or other organizations," "registered at a temporary dispatch labour agency," "advertisements or magazines on job vacancies," "through school or acquaintances," "applying to prospective employer directly," "preparation to start a business," "other."

According to Figure 6, the main method for searching for employment (i.e., that having the highest percentage) is "applying to Public Employment Security Office," followed

by "advertisements or magazines on job vacancies." It is therefore reasonable to view the trends for job-searching methods identified here as being similar to those seen in the Survey on Employment Trends. It should be noted that the percentage for Public Employment Security Office is higher here compared to the Survey on Employment Trends; however, this percentage may partly be influenced by the need to use such offices in order to receive unemployment benefits.

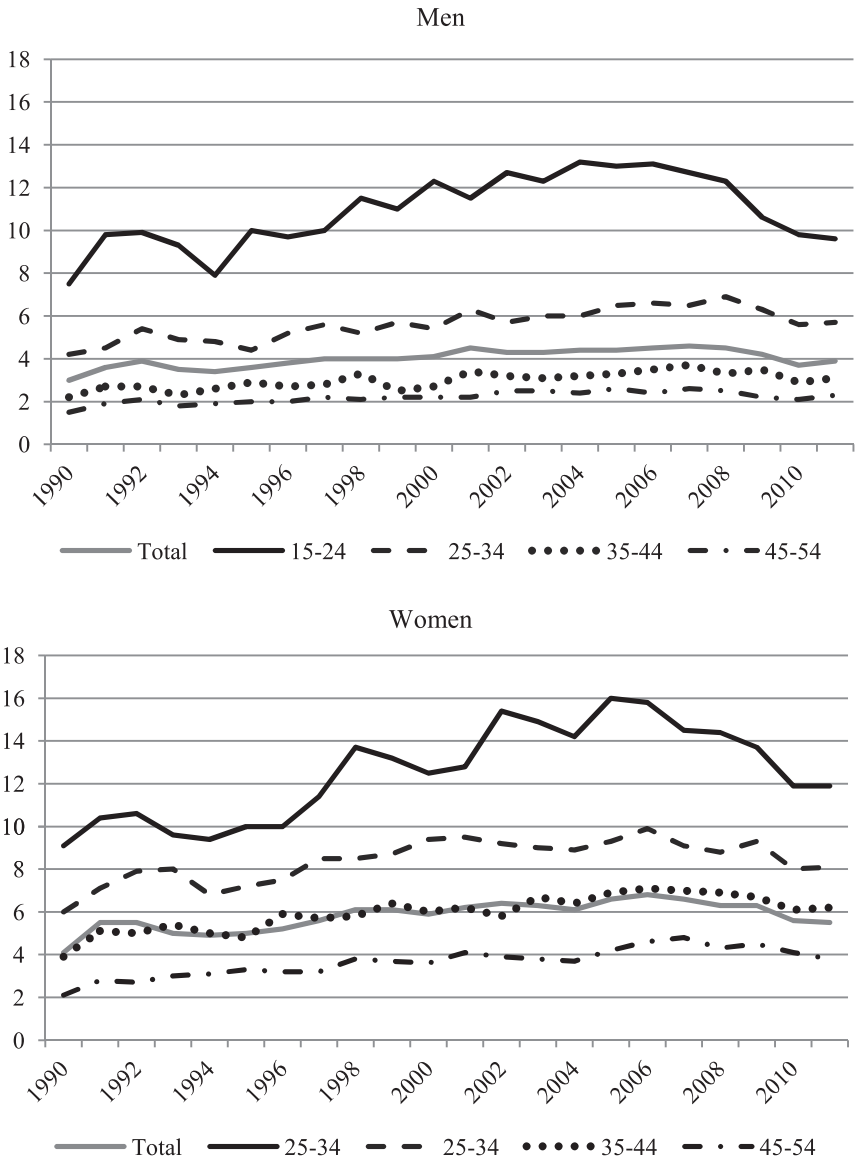
V. Resource Reallocation Functions of the Labor Market

This paper has thus far examined the actual circumstances of labor movement as seen from the standpoint of workers. We would now like to examine labor movement from the standpoint of resource reallocation in the labor market.

In the economy, businesses can go bankrupt and business offices can close at any time due to business fluctuations and changes in the economic structure. Looking at bankruptcies in Japan (liabilities of 10 million yen or more) in 2012, for example, a total of 12,124 bankruptcies with total liabilities of 3.8345 trillion yen occurred (data of Tokyo Shoko Research, Ltd.). Although it is highly likely that employees will be dismissed when companies go bankrupt, it should be possible to reduce wasted human resources if these dismissed employees can change jobs smoothly. At the same time, while it may be true that some occupations are being lost due to technical innovation and other causes,[8] allowing the people who were employed in such occupations to smoothly move on to different occupations is also important from the standpoint of effective use of human resources. Moreover, realizing smooth job turnover is also desired as a means of utilizing human sources more effectively when people who find employment later voluntarily leave it after realizing that it does not suit them. In this sense, labor movement functions to reallocate human resources so that the right people are employed in the right places. Thus, better fluidity in the labor market will mean that human resources are being reallocated to match changes in the industrial and occupational structures.

So, how well is reallocation of the labor force working in Japan's labor market? One indicator for seeing this is the job turnover rate. This rate can be calculated from data in the Labour Force Survey. Figure 7 shows changes in the job turnover rate for men, women, and specific age groups. Looking at the figure, it is apparent that the rate differs depending on sex and age. Specifically, the job turnover rate is high regardless of sex for younger age groups but falls with older age groups. Furthermore, when looking at the same age group for men and women, the turnover rate for women is higher than that of men. For example, the job turnover rate in 2011 was 9.6% for men aged 15 to 24 and 11.9% for women of the same age group. On the other hand, the rate was 2.3% and 3.8%, respectively, for the 45 to

[8] Examples of nearly extinct occupations that come quickly to mind include "telephone operator," "typesetter," and "steam locomotive engineer."



Source: *Special Survey of the Labour Force* (February of each year); from 2002: *Labour Force Survey (Detailed Tabulation)* (annual average). All issued by the Statistics Bureau, MIC.

Figure 7. Changes in Job Turnover Rate (%)

54 age group. The rate is higher for the younger age groups because they are relatively less skilled, have less experience, and receive lower wages, and tend to engage in "job hopping" to find the jobs that suit them. Furthermore, women have higher rates of non-regular

Source: MHLW, *Survey on Employment Trends* for each year.

Figure 8. Changes in Accession/Separation Rates

employment (e.g., in part-time jobs, etc.) and tend to be less skilled and have less experience compared to men, and it is thought that these are factors behind the higher job turnover rate for women. However, the important point is that, regardless of sex or age, the job turnover rate is tending to increase year by year, and this suggests that reallocation of the labor force is occurring more frequently than before.

Contrary to the results of the Labour Force Survey, the results of the Survey on Employment Trends suggests that reallocation of the labor force has changed little. The accession/separation rates that are calculated in the Survey on Employment Trends serve as one indicator for ascertaining reallocation, and these rates do not show significant change. The accession/separation rates are calculated by dividing the total number of new employees and resigned workers by the number of workers at the beginning of the term. Thus, they indicate the degree to which labor movement occurred within a particular business office during the term. It should be noted that "new employees/resigned workers" does not include people who moved among business offices within the same company.[9]

According to Figure 8, which shows changes in the accession/separation rates, the

[9] Accession/separation rates can also be calculated using the Monthly Labour Survey. Using this resource allows calculation of the rates for each month. However, care is required, as under this survey, "new employees" includes not only new hires but also transferees, and "resigned workers" includes not only people who were dismissed or retired but also transferees.

rates for part-time workers is high compared to ordinary workers[10]; however, no increasing trend in the rates is evident for either. Additionally, the difference between the job accession rate and separation rate indicates net change. In the case of ordinary workers, the separation rate is often higher than the accession rate during this period, which signifies a net decrease in ordinary workers. On the other hand, in the case of part-time workers, the accession rate is often higher than the separation rate, thus showing a net increase in part-time workers.

VI. For More Detailed Consideration of This Topic

This paper presents only a small fraction of available statistics concerning labor movement. The Employment Status Survey (Statistics Bureau, MIC) also presents detailed data on labor movement. And recently, panel surveys such as the Japanese Panel Survey of Consumers (the Institute for Research on Household Economics) that are conducted by private think tanks and universities are also useful.

Moreover, the Japan Institute for Labour Policy and Training processes existing statistical data to prepare indicators that are effective in ascertaining labor movement. Interested persons should refer to "*Yusufuru Rodo Tokei: Rodo Tokei Kako Shihyoshu* [Useful labor statistics: processed indicators for labor statistics]" and "*Gyomu Tokei wo Katsuyo Shita Shinki Shihyo* [New indicators using business statistics]" (Japan Institute for Labour Policy and Training 2008, 2012).

References

Japan Institute for Labour Policy and Training. 2008. *Gyomu tokei wo katsuyo shita shinki shihyo* [New indicators using business statistics]. Tokyo: The Japan Institute for Labour Policy and Training.

———. 2012. *Yusufuru rodo tokei: Rodo tokei kako shihyoshu* [Useful labor statistics: Processed indicator for labor statistics]. Tokyo: The Japan Institute for Labour Policy and Training.

Ohta, Souich, and Hiroshi Teruyama. 2003. Furo deta kara mita nihon no shitsugyo: 1980–2000 [A study on Japanese unemployment from flow data: 1980–2000]. *The Japanese Journal of Labour Studies* 45, no. 7:24–41.

[10] "Ordinary worker" refers to workers other than part-time workers; it does not necessarily refer to regular employees. "Part-time worker" refers to workers whose daily prescribed working hours are less than those of ordinary workers in the same business office or, if said hours are the same, whose weekly prescribed working days are less than those of ordinary workers; it does not necessarily refer to non-regular employees.

Employment of New Graduates

Mitsuko Uenishi
Hosei University

I. Career Options of Upper Secondary School Graduates and Their Advancement to Higher Education Institutions

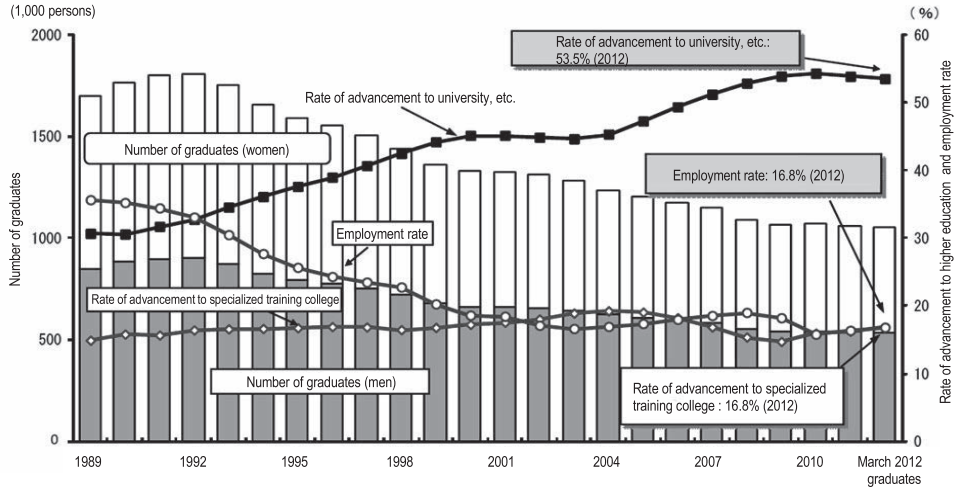
The primary purpose of this paper is to present statistics concerning employment by new graduates of higher education institutions. The following provides a backdrop by examining the career options of upper secondary school graduates and the circumstances of their enrollment in higher education institutions.

Figure 1 shows long-term trends that start with March 1989 graduates. Amid a decline in the number of upper secondary school graduates following a peak in March 1992, the percentage of graduates advancing to universities and junior colleges has risen while the employment rate has fallen. During this time, the rate of advancement to specialized training colleges, which are full-time training institutions, has remained largely unchanged.

Looking at upper secondary school graduates of March 2012, who represent the latest available data set, 53.5% went on to a university or junior college (47.6% went to a university), 16.8% went on to a specialized training college, 6.1% entered a miscellaneous school (university preparatory school, etc.), 0.6% entered a public vocational training institution (public human resources development facility, etc.), 16.7% sought full-time employment, 1.3% were in temporary work, and 4.9% neither entered an institution of higher education nor full-time employment.

Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) defines an "enrolled student of a higher education institution" as a person enrolled in a university, in a junior college, in the fourth year of a college of technology, or in a specialized training college. In the following discussion, the author wishes to present statistics illuminating the post-graduation employment circumstances of people who advanced to a university or specialized training college, which are the leading options taken by upper secondary school graduates.

It is worth noting that, according to Table C.1.5. of the OECD's *Education at a Glance 2012*, the percentage of full-time students in tertiary-type A education (which represents baccalaureate degree programs) and advanced research programs in Japan is 90.8%, which is considerably higher than the OECD average of 79.6%. Likewise, the percentage of full-time students in tertiary-type B education (which refers to higher education other than university baccalaureate degree programs) in Japan is 97.0%, which is significantly higher than the OECD average of 71.4%. In Japan, the pattern of "school-to-work transition"—whereby people with no experience with full-time employment study at universities and other types of higher education institution and then take on full-time work after



Source: Ministry of Education, Culture, Sports, Science and Technology, *School Basic Survey*.

Figure 1. Career Paths of Upper Secondary School Graduates

graduation—remains the norm. For this reason alone, post-graduation employment rate serves as an important indicator in grasping youth employment issues.

II. Employment Circumstances of Specialized Training College Graduates

MEXT's School Basic Survey does not present numerical values concerning the employment of specialized training college graduates. The School Basic Survey presents tables that individually show how graduates of lower secondary schools, upper secondary schools, colleges of technology, junior colleges, universities, and graduate schools move forward with their careers, but lacks tables concerning the employment of graduates of specialized training colleges.

However, when a reporter affiliated with the Sankei Shimbun Co., Ltd., inquired with MEXT about this situation, he found that it is possible to calculate the employment rate of graduates by accessing "specialized training colleges" of the School Basic Survey's "school survey and correspondence education survey (upper secondary schools)" via the government's statistical portal e-Stat and then using the number of graduates of the table for "specialist courses" of "number of graduates by subject" (Table 191 [4-3] in fiscal 2012) as the denominator and "number of people who obtained employment of the total" as the numerator. Calculation conducted in this manner produces an employment rate for graduates during fiscal 2011 of 77.4%.

Nonetheless, the School Basic Survey's lack of an easily comprehensible table on the employment circumstances of specialized training colleges is puzzling. Even if it is true that

ascertaining conditions in specialized training colleges is difficult due to their different program periods and other factors, the availability of data for calculating employment rate should make it possible to present easy-to-understand representations of these data.

III. Two Different Indicators Showing the Employment Circumstances of University Graduates

1. Employment Rate Calculated Using Graduates as the Denominator, and Employment Rate Calculated Using Job Seekers as the Denominator

Let us now turn our attention to employment by university graduates. Each year, two different types of university graduate employment rate are presented in government statistics. According to the results of the fiscal 2012 School Basic Survey, which was issued by MEXT on December 21, 2012, the employment rate of people graduating from university in March 2012 was 63.9%. On the other hand, according to the Survey on the Number of New Graduates Entering Employment that was issued jointly by the Ministry of Health, Labour and Welfare (MHLW) and MEXT on May 15, 2012, the employment rate of people graduating from university in March 2012 was 93.6%. Why is it that these differing values are both given the same name of "employment rate"?

The School Basic Survey's employment rate is calculated using graduates as the denominator. However, the employment rate presented by MHLW and MEXT's joint Survey on the Number of New Graduates Entering Employment is calculated using job seekers as the denominator. Consequently, the employment rates presented in these two surveys vary greatly.

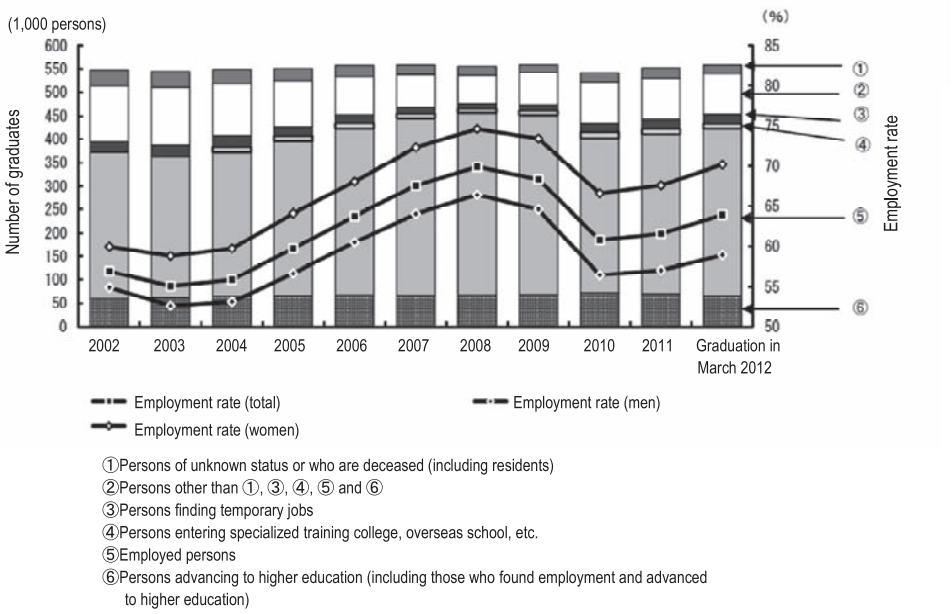
Because both of these values are presented as "employment rate" and can even appear in newspaper reports without detailed interpretation, they give people an incorrect picture of Japan's employment rate among graduates. Indeed, it is not uncommon to find cases in which people mistakenly think that more than 90% of graduates have found employment.

The following provides a more detailed interpretation of the statistics used in measuring these two employment rates.

2. The Dominator Used in Calculating the Employment Rate in the School Basic Survey: Graduates

The employment rate for university graduates that appears in the School Basic Survey is calculated using graduates as the denominator. Thus, looking at the case of graduates in March 2012, the percentage of those that found employment is 63.9%.

Figure 2 provides a breakdown of the post-graduation courses taken by university graduates. Specifically, 11.8% of graduates went on to graduate school or other forms of higher education, 63.9% found full-time employment, 2.0% went on to a specialized training college or overseas school, 3.5% were in temporary work, 15.5% were neither entering an institution of higher education nor full-time employment, 1.6% were residents, and 1.8%



Source: Ministry of Education, Culture, Sports, Science and Technology, *School Basic Survey (fiscal 2012)*.

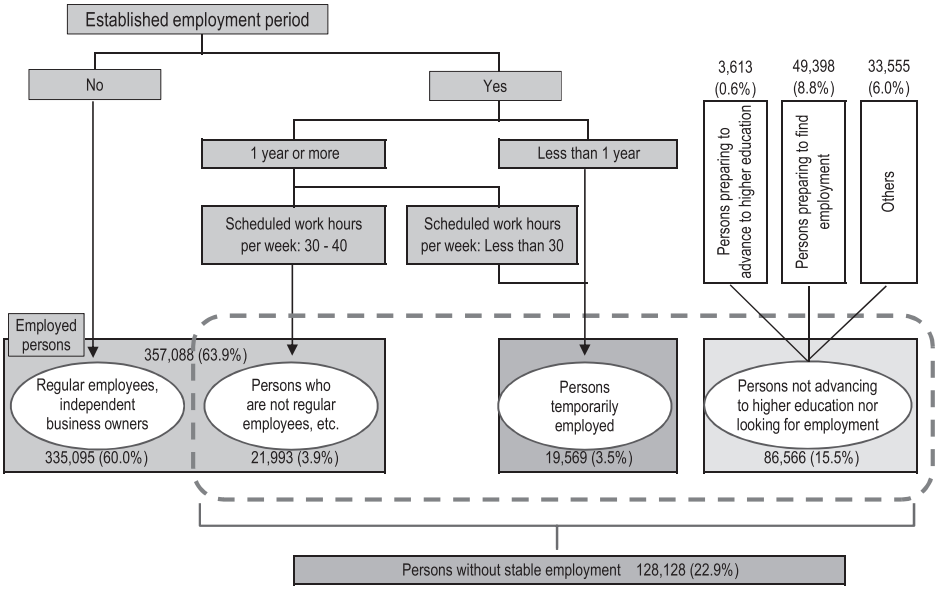
Figure 2. Career Paths of University Graduates

were deceased or of unknown status.

Such understanding of graduates' post-graduation career paths comes from a yearly compilation by MEXT of results reported by all universities. They report the paths of their students as of May 1, which is after graduation. However, because they are allowed to report the career paths of their students at time of graduation when they cannot obtain this information as of May 1, it is thought that many universities survey each student on this topic at the time of their graduation and then report those results.

Looking at trends in career paths appearing in Figure 2, it is apparent that the number of graduates going on to graduate school, etc., does not fluctuate greatly, while the share of graduates finding full-time employment varies depending on the economic circumstances of the time. In years with low percentages of graduates finding employment, the percentage of "those neither entering institutions of higher education nor full-time employment" rises. Thus, it is apparent that the general employment practice for university graduates—namely, the system of hiring new graduates—comes with a degree of fortune or misfortune that depends on the economic circumstances existing when young people first enter the workforce.

Here, however, it must be noted that Figure 2 focuses entirely on graduates. Although in reality there are people who drop out of university as well as holdovers who repeat a year, the existence of these people is not reflected in Figure 2. The percentage of graduates of four-year courses who actually graduated in four years is provided in the 2012 School Basic



Source: Ministry of Education, Culture, Sports, Science and Technology, *School Basic Survey (fiscal 2012).*

Note: Figures are number of university undergraduates; figures in parentheses are percentages among all graduates.

Figure 3. Career Path Items That Were Newly Incorporated into the School Basic Survey

Survey. It can be seen that between March 2009 and March 2010, a time when the employment rate fell rapidly, the percentage of people who graduated in four years also fell from 80.5% to 76.7%. From this, it can be assumed that, when economic circumstances mean a tough employment situation, a significant percentage of students choose to remain in school for one more year and look for employment as a new graduate in the following year, rather than look for employment after their actually scheduled graduation. The existence of such "holdovers for employment purposes" reflects the current situation in Japan, where graduating from university without securing employment as a full-time employee means a difficult road in securing good employment opportunities.

Given the above, the following should be added to discussion of the School Basic Survey's study of university graduates' career paths. Two survey design changes are made beginning with the fiscal 2012 survey.

One is the establishment of a "number of limited-term employees" category within the breakdown of people who have obtained employment. This category applies to people working on the equivalent of a full-time basis with an employment contract period of at least one year. Despite the fact that more and more people are finding employment under limited-term employment contracts even as new graduates, it has been impossible to grasp

the percentage of such people from School Basic Surveys conducted heretofore. This change makes it possible to classify people who have found jobs after graduation as "regular full-time employees," "limited-term full-time employees," and "people in temporary employment." As is shown in Figure 3, in the case of people graduating in March 2012, these percentages are 60.0%, 3.9%, and 3.5%, respectively.

And the other change is the classification of the category "those neither entering institutions of higher education nor full-time employment" into "those preparing to advance to higher education," "those preparing to find employment," and "others." This appears to be designed to identify reasons why people who have not yet determined their career paths are undecided. These results are also shown in Figure 3. However, it must be noted that "others" includes people who are preparing to acquire a certification or qualification and people who came to study at a Japanese university and then returned home. Consequently, seeing "others" as a problematic classification of people who have no desire to advance to higher education or find employment should be avoided.

3. The Dominator Used in Calculating the Employment Rate in the MHLW and MEXT Survey: Job Seekers

The employment rate in MHLW and MEXT's joint Survey on the Number of New Graduates Entering Employment shows the percentage of people who have obtained employment by using job seekers as the denominator. According to this method, the employment rate among people who graduated from university in March 2012 is 93.6%.

As opposed to the School Basic Survey, which seeks to ascertain graduates' career paths, this joint survey is for the purpose of illuminating the employment circumstances of job seekers. Targeting students in their final year of study, the joint survey is conducted four times each year; specifically, on October 1, December 1, February 1, and April 1 (after graduation). It does not target the entire number of students, but is instead a sampling survey. It tracks the same samples at four time points up to their graduation (a total of 5,690 people that include university students, junior college students, and college of technology students). The surveys conducted in October, December, and February are called Surveys of Formal Appointments for Persons Scheduled to Graduate from Universities, etc. Survey results obtained at the four time points are announced separately by MHLW and MEXT.

A point that must be borne in mind when reading the surveys' results is that the number of job seekers gradually decreases at the four time points. Accordingly, an employment rate of 93.6% does not mean that 93.6% of the initial job seekers have found employment.

Let us look at this in more detail. Looking at the results of the fiscal 2011 sampling surveys of university students, the formal appointment rate rose from 59.9% to 71.9% and then to 80.5% in October, December, and February, respectively. And the employment rate of April reached 93.6%. When these results are taken at face value, there is a tendency to think that even though the share of job seekers receiving formal appointments was only 59.9% in October, ultimately 93.6% of job seekers found employment. However, in actuali-

ty, this is not the case.

According to figures announced by MHLW as estimates taken from the sampling survey, the number of university students who are job seekers showed a decline at the four time points of October, December, February, and April (425,000, 416,000, 406,000, and 381,000, respectively). A comparison of October and April shows a 44,000-person decline in the number of job seekers. It is highly likely that this number includes many people who have given up looking for employment. Moreover, this number of 44,000 people is larger than the 25,000 people who have not received formal appointments but remain job seekers (also an MHLW estimate) as of April.

In other words, the existence of people who have given up looking for employment is not reflected in the 93.6% employment rate of April. Nonetheless, the misunderstanding that more than 90% of job seekers find employment is widely shared throughout Japan.

In light of the above, it is the author's opinion that the *School Basic Survey*, which seeks to ascertain graduates' career paths, serves as a more appropriate reference when illuminating the employment situation of Japan's university students than the results of the joint survey by MHLW and MEXT.

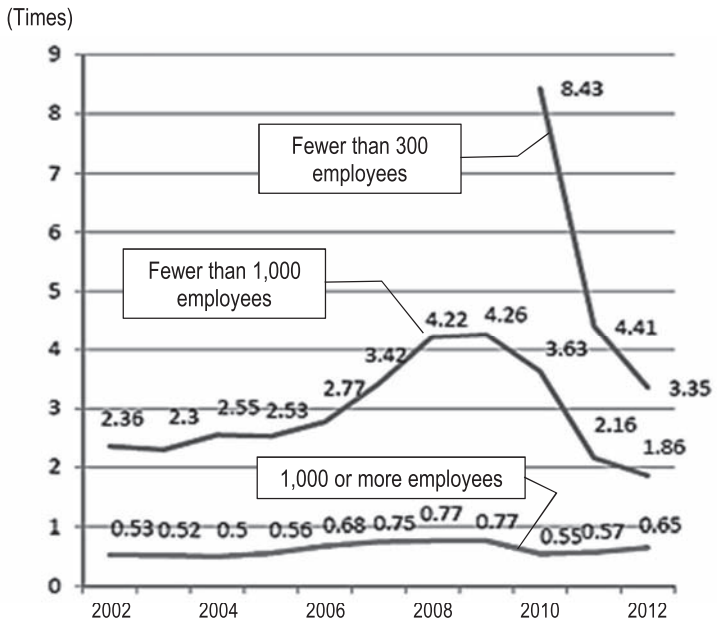
4. Necessity for Official Statistical Data for Ascertaining the Numbers of Job Openings for University Graduates and Job Seekers

Thus far, this paper has examined statistical data for ascertaining the actual labor circumstances of university graduates. However, efforts to improve the employment environment for university graduates require not only such results-based statistical data but also statistical data on the numbers of job openings and job seekers. The questions that must be answered here are: What are the sizes and industrial categories of enterprises that hire university graduates? How many graduates do such enterprises intend to hire? And how many university students are looking for employment?

However, in actuality, official statistical data concerning these points do not exist. In the case of employment among high school graduates, MHLW gathers data on the numbers of job openings and job seekers and then announces the job opening-to-application ratio. Information on job openings targeting high school students are sent to high schools through Public Employment Security Offices. Official statistical data are also obtained within this system. The result is a detailed understanding of openings for high school students by prefecture, industry, occupation, and establishment size.

On the other hand, the number of job openings for university students is not officially understood. The organization that surveys such job openings is a private-sector research body called Recruit Works Institute.

University students' job-hunting activities need not go through Public Employment Security Offices or their universities. Many companies provide information on job openings via employment-support websites that are operated by private enterprises, among them Recruit Career Co., Ltd. University students utilize these sites to apply for jobs.



Source: Cabinet Office, *Jakunen Koyo wo Torimaku Genjo to Mondai* [Current circumstances and issues surrounding youth employment]. Material No. 1 presented at the seventh meeting of the Cabinet Office's "Employment Strategy Dialogue" (March 19, 2012).

Figure 4. Job Opening-to-Application Ratio for University Graduates by Enterprize Size

Within this system, Recruit Works Institute, which is a research organ of the Recruit Group, conducts surveys to track companies' job openings and students' job-hunting trends. Each year, it announces the results as the College Graduates Job Opening Survey. According to this survey, the number of people seeking jobs with private enterprises is gradually growing each year in line with a rising university advancement rate, while the total number of job openings varies greatly depending on the economic circumstances prevalent at the time. Consequently, the job opening-to-application ratio fluctuates considerably. To illustrate, the job opening-to-application ratio for March 1991 graduates was 2.86, while that for March 2012 graduates was 1.23.

The results of the Recruit Works Institute's surveys are utilized as basic data by the government in its policy making. Figure 4 shows a portion of data that the Cabinet Office presented to a committee that it established in response to a demand by the Prime Minister. The figure shows the results of the Recruit Works Institute's survey. Even if the overall job-opening-to-application ratio is established as 1.23 times, the ratio varies when looked at in terms of enterprise size. This result is interpreted as showing that even though small and medium-sized enterprises are keen to hire university students, university students are more

interested in joining large enterprises. Given this, the government is looking to find policies that will encourage students to give more of their attention to small and medium-sized enterprises.

However, the students' desires that are shown here are based on a questionnaire that was conducted in February 2011, and thus they reflect desires that existed at the earliest stage of job-hunting activity. In actuality, many students do indeed turn their attention to small and medium-sized enterprises when faced with the reality that they cannot get a formal appointment from a large enterprise, even if that is what they originally wanted. Moreover, students often change their desired business sector. This process is not reflected in the survey's results.

Furthermore, even more important than job opening-to-application ratio are data that reveal the degree to which enterprises have demand for university graduates, with focus on their sizes and business sectors. Despite this, details regarding job opening trends cannot be grasped from data published by the Recruit Works Institute. In terms of the staff sizes of recruiting enterprises, total job openings are presented in only two classifications: enterprises of fewer than 1,000 employees and enterprises with 1,000 or more employees. Additionally, the total number of job openings by business sector is broken down into only four categories: "manufacturing," "distribution," "finance," and "services and information." The author believes that there is a need for officially ascertained statistical data on numbers of job openings.

In October 2012, MHLW announced early job separation rates for new university graduates (three years following graduation) by place of establishment size (six categories) and industry. For job separation rates by industry, early job separation rates are announced in 18 categories, including "others," in accordance with the major industry categories established by the Statistics Bureau, Ministry of Internal Affairs and Communications (MIC), while for manufacturing, early job separation rates are announced in intermediate categories. Consequently, there are significant differences in early job separation rates among business sectors; for example, "accommodations, eating and drinking services" has a rate of 48.5%, while "manufacturing" has a rate of 15.6% (both figures are for March 2009 graduates).

What university graduates who seek jobs desire is not simply an employment, but rather decent work. Today, the problem of so-called "black companies"—i.e., companies that force employees to work long hours with only partial payment for overtime and that quickly use and discard young labor—has rapidly gained attention as a social issue.[1] Thus, university graduates must also consider the possibility that they could enter such a poor working environment.

If these circumstances are considered, it becomes apparent that the government and universities must not simply strive to have students find employment somewhere as regular full-time workers. Instead, they must support students so that they can find favorable em-

[1] Konno, Haruki, *Burakku Kigyo* [Black companies] (Tokyo: Bungei Shunjusha, 2012).

ployment opportunities. In order to do this, there is a need for the number of job openings to be ascertained by size of enterprise in line with the same major industry categories used for the job separation rate.

Today, half of all high school graduates decide to go on to university because of the difficult employment environment that they face, and job hunting as a university graduate is becoming the main route to employment among young people. Given this, the author believes that preparing effective youth employment measures will require official ascertainment of the number of available job openings for university graduates in a way that is matched to the Statistics Bureau's enterprise size and industry classifications. After doing this, it will also be necessary to reexamine how higher education meets the recruitment needs of specific industries and occupations.

Determining Factors in Middle-Aged and Older Persons' Participation in Volunteer Activity and Willingness to Participate*

Xinxin Ma *Kyoto University*
Akiko Ono *The Japan Institute for Labour Policy and Training*

This paper examines the factors that determine participation in volunteer activities by older persons, as well as their willingness to take part. The examination is based on empirical analysis, using microdata from a survey on middle-aged and older persons. Many Japanese workers reach mandatory retirement at age 60, and particularly among men, retiring from the market labor force represents a major turning point. The analysis results reveal that participation in volunteer activities by older persons is in a trade-off relationship with market labor based on wages; the probability of taking part in volunteer activities tends to be lower if the market wage rate is higher. Among men, a relationship is seen between age and participation in volunteer activities, and the results reveal that the probability of their participation in volunteering forms a U-shape bottoming at age 60.

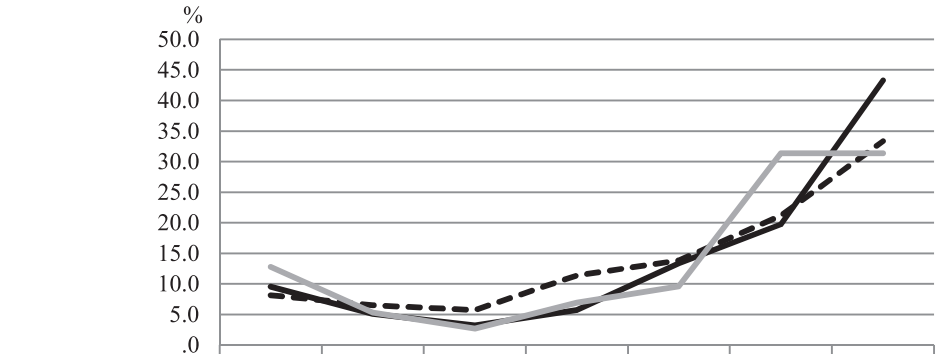
I. The Situation of Older Persons and Volunteer Activities in Japan

In Japan, the number of people taking part in volunteer activities started to increase after the Kobe earthquake of 1995—the year now known as "Volunteer Year One." Volunteer activities have grown increasingly conspicuous since then, illustrated by the promulgation of the Act on Promotion of Specified Non-Profit Activities in 1998. Figure 1 shows data on the start of volunteer activities by different age groups, taken from microdata to be analyzed later. As this clearly shows, the proportion of people involved in volunteer activities has increased in all age groups since the 1990s.

Figure 2 shows the number of people involved in volunteer activities by age groups, from the results of the Survey on Time Use and Leisure Activities in 2001, 2006 and 2011. In the 2011 survey, two spikes can be seen in the number of people involved in volunteer activities, one in the early to mid-40s and the other in the early to mid-60s. The second of these can also be seen in the 2001 and 2006 surveys. This second spike represents the first postwar "baby boomer" generation (i.e. persons born between 1947 and 1949[1]). As of 2013, people in the first baby boom generation were aged between 64 and 66. The population of Japan was significantly expanded by this generation. It was then further expanded by the

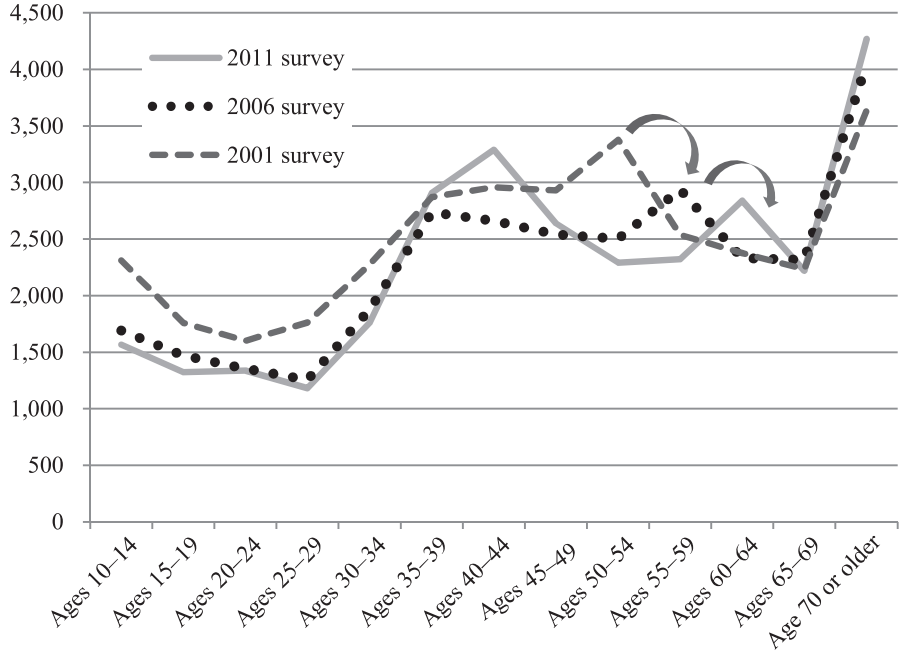
* This paper is a major reworking of *Research on Social Contribution Activities by Older Persons—From Quantitative and Qualitative Analysis* (JILPT Research Report no.142, chapters 1 to 4 [in Japanese]) (JILPT 2011). Many useful comments were received from members of the "Research Group on Social Contribution Activities by Older Persons," for which authors are deeply grateful. Any remaining errors are entirely the responsibility of the authors.

[1] Altogether, 8.04 million births were recorded in these three years. The number in 2011 was 1.06 million births, only around 40% of the 2.70 million recorded in 1949 (from annual estimates in MHLW Vital Statistics).



	< 1980	1980–1984	1985–1989	1990–1994	1995–1999	2000–2004	2005+
Up to age 59	8.1	6.5	5.7	11.4	13.8	21.1	33.3
Ages 60–64	9.6	5.1	3.2	5.7	13.4	19.7	43.3
From age 65	12.8	5.3	2.7	6.9	9.6	31.4	31.4

Figure 1. Year of First Volunteer Activity by Different Age Groups



Source: Ministry of Internal Affairs and Communications, *Survey on Time Use and Leisure Activities*.

Figure 2. Trends in Numbers Involved in Volunteer Activities by Age Group (2001, 2006, 2011)

generation of children born to this generation (the "second baby boom generation"), but entered a shrinking trend thereafter.

In many Japanese companies where mandatory retirement at age 60 is the norm, mass retirements of people in this generation were predicted to occur between 2007 and 2009. When that happened, the labor force that had supported Japan's economic boom years was expected to continue contributing to society and the community, rather than simply ceasing to exist as a labor force.

In view of the above, empirical research on determining factors behind participation in volunteer activities by middle-aged and older persons is an important issue relevant to Japan's current situation. But while many previous studies have highlighted the large proportion of older persons taking part in volunteer activities, hardly any empirical analysis has been carried out on middle-aged and older persons; the factors that influence their participation in volunteer activities remain unclear.

Besides this, there must also be people who, though not currently participating in volunteer activities, hope to do so in future. Analyzing their motivations will surely have vital implications for policies designed to promote volunteer activities. In previous studies on the volunteer labor supply, the analysis has nearly always assumed the two-way choice of taking part versus not taking part; no empirical analysis has been made of determining factors behind the willingness to take part.

In this paper, therefore, microdata from a survey conducted by the Japan Institute for Labour Policy and Training (JILPT) will be used to conduct empirical research on participation in volunteer activities by middle-aged and older persons, as well as determining factors behind their willingness to take part, which have not been analyzed in the past.

The composition of the paper is as follows. Section II will survey previous research on the volunteer labor supply, Section III will describe the econometric framework for empirical analysis, and Section IV will carry out empirical analysis and explain the measurement results. Finally, the results obtained from empirical analysis will be summarized.

II. Previous Studies and Characteristics of Analysis by This Paper

Theoretical frameworks on participation in volunteer activities include those based on the altruistic behavior of "not for oneself but for someone else" (Becker 1974, 1976, 1981, 1991; Barro 1974; Andreoni 1989, 1990; Sen 1982, 1988, 1985), and those based on selfish behavior. The latter is a consumption model based on a utility function, in which volunteer activities are treated as consumer goods (Menchik and Weisbrod 1987; Freeman 1997; Yamauchi 1997, etc.). Besides these, there is also the human investment model (Menchik and Weisbrod 1987) based on the theory of human capital (Becker 1975). Most previous empirical analysis studies have been based on selfish behavior models.

The main Results of previous studies based on microdata will be surveyed below.[2] First, it has been shown that volunteer participation is influenced by gender, age, educational background, marital status, the existence of children and other individual attributes in previous studies.

For example, previous studies have revealed that women are more likely than men to take part in volunteer activities, and that they spend more time on volunteer activities. Other trends are that people with children are more likely to take part in volunteer activities and spend more time on such activities. On the other hand, the probability of participation tends to be lower and the amount of time spent on volunteer activity less when nursing infants.[3] In a study of married women, Carlin (2001)[4] points out that the probability of taking part in volunteer activities increases but the time spent on volunteer activities decreases as the number of children increases.

On the subject of age, both the probability of taking part in volunteer activities and the time spent on such activities tend to change with age. In their analysis, Menchik and Weisbrod (1987) point out that, while the time spent on volunteering increases with age, it conversely decreases after a certain age (43). In the analysis by Vaillancourt (1994), changes with age were analyzed separately be gender. Here, it was shown that the most likely age for both males and females is 15–19, and that while men are more likely to take part in volunteer activities between the ages 25 and 54, the probability decreases between 55 and 69. For women, the probability of participation clearly decreases after the age of 70. In America and Canada, there is a particular socio-cultural background to the effect that volunteer activities in student years are seen as important in educational terms. Such experience is also valued when taking up employment, etc. For men, in particular, volunteer activities seem to be perceived as a means of forming human capital.

Another study has demonstrated that educational background has a strong influence on participation in volunteer activities, and that persons with a higher level of final education are more likely to take part in volunteer activities (Vaillancourt 1994). Moreover, the higher the parents' educational background, the longer the time spent on volunteer activities (Menchik and Weisbrod 1987).

Turning next to the impact of income factors on participation in volunteer activities as

[2] See Ono and Ma (2012) for a more detailed overview of empirical research on the volunteer labor supply.

[3] Menchik and Weisbrod (1987) conducted tobit analysis on determining factors behind hours of volunteer labor supply, using microdata from a survey conducted by Morgan, Dye and Hybels (1977). Vaillancourt (1994) conducted probit analysis on determining factors in the volunteer labor supply (the probability of taking part in volunteer activities), using microdata from Canada's 1987 LFS (Labor Force Survey).

[4] In an analysis focusing on married women, Carlin (2001) uses microdata from a 1975–1976 US survey on non-working time to conduct probit analysis on the probability of taking part in volunteer activities. Carlin estimates the volunteer labor supply time function, taking account of selection bias based on the choice of whether or not to take part in volunteer activities.

found in previous studies, Menchik and Weisbrod (1987), Vaillancourt (1994) have proved that the higher the non-earned income, the longer the time spent on volunteer activities, and the higher the market wage rate, the shorter the time spent. On the other hand, Freeman (1997)[5] discovered that the higher the human capital (the higher the opportunity cost), the larger the volunteer labor supply. Freeman points out that volunteer supply activity can only partly be explained with standard models of labor supply. Though focusing only on married women, Carlin (2001) comes to a similar conclusion; the higher the market wage, the larger the volunteer labor supply (probability of participation, hours of supply), but conversely, time spent on volunteer activities decreases as working hours increase.

Analysis results of empirical research on volunteering in Japan can be summarized as follows. In terms of individual attribute factors, women are more likely to take part in volunteer activities than men, while a higher educational level and age increase the probability of participation. The probability of participation also increases among married respondents and those with children. As for income factors, the probability of taking part in volunteer activities is inversely proportionate to the householder's working hours, working days, and wage rate. By contrast, it has also been demonstrated that the higher the annual household income, the higher the probability of taking part in these activities. Besides this, it has also been confirmed that the smaller the urban scale the higher the probability of taking part in volunteer activities, and that when other factors are constant, there are regional differentials in the probability of volunteer participation (Atoda, Kim, and Maekawa 1999; Atoda and Fukushige 2000; Yamauchi 2001; Ono 2006; Moriyama 2007).

Although there has been more empirical analysis of volunteer activities in Japan recently, a number of issues still remain in connection with previous studies, as stated above. In contrast to these, the main features of this paper are as follows.

Firstly, the analysis in this paper targets middle-aged and older persons in the 55–69 age group, which have not been analyzed until now, and focuses on the determining factors behind their participation in volunteer activities.

Secondly, this paper conducts empirical analysis on determining factors behind willingness to participate in volunteer activities, which again have not been analyzed by previous studies. After clarifying the characteristics of persons hoping to take part (as "reservists" for those actually taking part), this paper attempts to propose policies for promoting participation in volunteer activities by middle-aged and older persons in future.

Thirdly, the determining factors behind participation in volunteer activities and willingness to participate could differ, depending on the group in question (for example, by gender or age group). In this paper, therefore, group-based analysis is conducted using subsamples and the differences between groups are examined.

Fourthly, this paper uses a structural probit analysis model to deal with endogenous

[5] Freeman (1997) used microdata from the US 1989 CPS and 1990 Gallup poll to conduct probit analysis on the probability of taking part in volunteer activities and OLS on hours of volunteer labor supply.

problems in market wages and the selection of employment or retirement activity. These issues, again, have not been addressed by previous studies. Specifically, this paper uses an estimate of wage rates calculated from the wage function in probit analysis. It also uses Heckman's two-step estimation method (Heckman 1979) to deal with the problem of sample selection bias in estimates of the wage function.

III. Method of Quantitative Analysis

1. Estimation Models

First, the structural probit model shown in equation (1) is used to analyze the various factors that influence decisions to participate in volunteer activities by middle-aged and older persons, as well as their willingness to participate.

$$\Pr(y_i = 1) = a + \beta_x X_i + \beta_{wage} \hat{wage} + u_i > 0 \qquad (1)$$

In equation (1), subscript i represents individual workers, while $\Pr(y_i = 1)$ indicates the probability function for participation in volunteer activities and willingness to participate. These are dichotomous variables (if taking part = 1, otherwise = 0, or if willing to participate = 1, otherwise = 0). a is a constant term, X represents factors that influence the choice to participate in volunteer activities (or wish to participate), and u indicates the error term. To address the problem of endogeneity, the estimated value of the wage rate *ŵage* calculated from the wage function is used. β_{wage} and β_X are the respective estimation coefficients. This is a structural equation, using years of experience and regional block variables as distinguishing variables.

Next, the wage function is indicated by equation (2.1), equation (2.2), equation (2.3) and equation (2.4).

$$Lnwage_i = b + \gamma_z Z_i + \varepsilon_{1i} \qquad (2.1)$$

$$\Pr(=1) = \delta M_i + \varepsilon_{2i} > 0 \qquad (2.2)$$

$$\varepsilon_{1i} \sim N(0, \sigma^2), \quad \varepsilon_{2i} \sim N(0,1)$$

$$Lnwage_i = a + \gamma_z Z_i + \gamma_\lambda \lambda_i + \nu_i \qquad (2.3)$$

Here, *Lnwage* is the logarithm of the wage rate, *b* is a constant term, *Z* indicates the various factors, γ_Z is the estimation coefficient, and ε indicates error. Using the estimation of the wage function shown in equation (2.1) makes it possible to address the problem of endogeneity in wage rates as well as decision-making for participation in volunteer activities and willingness to participate. The problem still remains, however, that hours of volunteer labor supply can only be observed for persons in volunteer activities (sample selection bias). In other words, if $corr(\varepsilon_1, \varepsilon_2)=\rho$ (where ε_1 is the wage function error and ε_2 the

probit analysis error for the probability of taking part in volunteer activities), consistent and unbiased estimates cannot be calculated through econometric analysis using equation (2.1). To address this problem, the correction term λ (inverse Mills ratio) must be obtained from the probit analysis shown in equation (2.2), and the selection bias corrected by calculated λ into equation (2.1) (Heckman 1979). Equation (2.3) shows the equation for estimation under Heckman's two-step estimation method for correcting selection bias. Here, ν indicates the error term.

2. Data Used and Setting of Variables

The analysis in this paper uses microdata from the Survey on Hiring and Employment Status of Older Persons conducted by the Japan Institute for Labour Policy and Training (JILPT). This was a major nationwide survey aimed at male and female individuals in higher age brackets (55–69), with the target group (sample size: 5,000) sampled at random from the Basic Residents Register using stratified two-stage systematic sampling. The survey method was by interview visit and questionnaire placement. The survey was conducted between August 20th and September 15th, 2009, when the first baby boom generation would have been aged 60–62. Valid responses were received from 3,602 respondents, giving a valid response rate of 72.0%. The sample sizes in terms of the target groups' age composition were 1,195 respondents aged 55–59, 1,257 aged 60–64 and 1,150 aged 65–69. As well as ascertaining the hiring and employment status of middle-aged and older persons, this survey included many questions on the state of volunteer activities by middle-aged and older persons, their individual attributes, family composition, and so on.

The setting of explained variables in this analysis will now be explained. In the questionnaire, the question "Are you involved in volunteering or other social contribution activities?" had three possible answers, namely "1. Yes, 2. Want to be, 3. Do not want to be." A dichotomous variable was set for participation in volunteer activities, i.e. respondents answering "1. Yes" = 1, others = 0. A dichotomous variable was also set for willingness to participate in volunteer activities, i.e. respondents answering "2. Want to be" = 1, those answering "3. Do not want to be" = 0.

Explanatory variables were divided into four factor groups, namely (i) income factors, (ii) individual attributes, (iii) family composition, and (iv) others, and proxy variables were set for each. The setting of each variable will be explained below.

Firstly, wage rates and non-earned income were set as income factors.

(1) On wage rates, the estimated value of the wage function was used to address the problem of endogeneity.

(2) Savings and the income of other family members were set as proxy indicators for non-earned income. In research by Menchik and Weisbrod (1987), among others, it has been shown that the greater the non-earned income, the higher the likelihood of taking part in volunteer activities. Here, these estimated values are expected to be positive values.

Secondly, the respondents' age, square of age, and educational background were set

as individual attribute factors.

(1) As stated above, Menchik and Weisbrod (1987) show, through empirical analysis on volunteer labor supply aimed at all age groups in America, that age and the probability of participation are in an inverted U-shaped relationship. Age and the square of age were set to examine the influence of age.

(2) An educational background dummy was set. The theory of human capital holds that the larger the human capital, the higher the market wage. However, since wages are controlled in this paper's analysis, the estimation of educational background is thought to have appeared as an educational background effect other than market wage (for example, differences between educational backgrounds in awareness and activity related to social contribution).

(3) A state of health dummy was set to examine the impact of health.[6] It is surmised that the state of health influences social activity by older persons, and that individuals in good health are more likely to take part both in market labor and volunteer activities than those in poor health.

(4) Gender diffrentials are thought to exist in volunteer labor supply activity, due to differences between men and women in employment status and leisure preferences. Moreover, Carlin (2001), Segal and Weisbrod (2002), Ono (2006), and Moriyama (2007) have demonstrated that women are more likely to participate in volunteer activities than men are. A male dummy was therefore set to control the impact of gender.

Thirdly, the spouse-related status, number of cohabiting relatives, existence of family nursing care, and independence of children were set as family composition factors. First, the presence or absence of a spouse and the spouse's employment status, the number of cohabiting relatives and the independence of children all influence employment decisions in the form of reservation wages. Therefore, these factors could also influence participation in volunteer activities. To control the impact of these factors, the spouse's employment status,[7] the number of cohabiting relatives, and the independence of children[8] were set as explanatory variables. Meanwhile, Atoda and Fukushige (2000) have shown that negative experience in the past has an impact on the volunteer labor supply. In this paper, the family nursing care experience dummy is used as a proxy for past negative experience.

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[6] See Oishi (2002), Seike and Ma (2009) and others on the impact of health on employment activity by older persons.

[7] The spouse's employment status was divided into four types, namely (i) no spouse (no spouse dummy), (ii) spouse works as a regular employee (spouse/regular dummy), (iii) spouse works as a non-regular employee (spouse/non-regular dummy), and (iv) spouse has retired (spouse/not in employment dummy). Dummy variables were set for each of these.

[8] The independence of children was divided into five dummies, namely (i) no children (childless dummy), (ii) children already economically independent (children independent dummy), (iii) it will probably take around 1–4 years before children stop needing financial support (1–4 years support dummy), (iv) it will probably take at least 5 years before children stop needing financial support (more than 5 years support dummy), and (v) prospects unknown dummy. Dummy variables were set for each of these.

Table 1. Descriptive Statistics

	Participation in social contribution activities		Willingness to participate in social contribution activities	
	Average value	Standard deviation	Average value	Standard deviation
Explained variables				
Participation in social contribution activities	0.1327	0.3393		
Willingness to participate in social contribution activities			0.3528	0.4780
Explanatory variables				
Income factors				
Wage rate (estimated)	7.3055	0.3706	7.3116	0.3705
Savings	0.5600	1.1366	0.5339	1.1074
Income of other family members	15.5737	20.1569	14.9685	19.6981
Individual attribute factors				
Age				
55–59	0.3577	0.4795	0.3706	0.4831
60–64	0.3390	0.4735	0.3432	0.4749
65–69	0.3033	0.4598	0.2862	0.4521
Component ratio of educational backgrounds				
Junior high school leavers	0.2425	0.4287	0.2512	0.4339
Senior high school leavers	0.4881	0.5000	0.4921	0.5001
Junior college and vocational college graduates	0.0999	0.3000	0.0940	0.2920
University and graduate school graduates	0.1695	0.3753	0.1627	0.3692
Men	0.6037	0.4893	0.6026	0.4895
Component ratio of state of health				
Good	0.4454	0.4972	0.4509	0.4978
Normal	0.4418	0.4968	0.4297	0.4952
Poor	0.1128	0.3164	0.1194	0.3244
Family composition factors				
Component ratio of spouse-related status				
No spouse	0.2010	0.4009	0.2066	0.4050
Spouse/regular employee	0.1257	0.3316	0.1325	0.3391
Spouse/non-regular	0.2151	0.4110	0.2141	0.4104
Spouse/not in employment	0.4582	0.4984	0.4468	0.4973
With family nursing care	0.1619	0.3685	0.1579	0.3647
Number of cohabiting relatives	1.9404	1.4376	1.9334	1.4197
Child-related status				
Childless	0.1110	0.3143	0.1180	0.3228
Children/independent	0.6131	0.4872	0.6088	0.4882
Children/1–4 years support	0.1344	0.3412	0.1352	0.3421
Children/more than 5 years support	0.0614	0.2401	0.0577	0.2332
Prospects unknown	0.0801	0.2715	0.0803	0.2719

Table 1 (*Continued*)

	Participation in social contribution activities		Willingness to participate in social contribution activities	
	Average value	Standard deviation	Average value	Standard deviation
Other factors				
Life satisfaction	0.4459	0.4972	0.4331	0.4957
Mandatory retirement experience	0.3489	0.4768	0.3349	0.4721
Jobs-to-applicants ratio	0.4196	0.0706	0.4197	0.0704
Component ratio of urban scale				
Less than 50,000 inhabitants	0.2110	0.4081	0.2100	0.4075
50,000–99,999 inhabitants	0.2676	0.4429	0.2663	0.4422
100,000–199,999 inhabitants	0.1724	0.3779	0.1730	0.3783
200,000–499,999 inhabitants	0.2531	0.4349	0.2574	0.4373
500,000 or more inhabitants	0.0959	0.2945	0.0933	0.2910
Sample size	1711		1457	

Source: Calculated by the author from the *Survey on Hiring and Employment Status of Older Persons* conducted by JILPT in 2009.

Note: Age groups limited to the 55–69 bracket.

Fourthly, on other factors, (1) previous studies have pointed out that the likelihood of taking part in volunteer activities increases in proportion to the level of satisfaction with life. For this, a life satisfaction dummy (Satisfied/More or less satisfied = 1, otherwise = 0) was set. (2) A mandatory retirement experience dummy was set, as the mandatory retirement system could have an impact on the volunteer labor supply. (3) Socio-economic environments are thought to influence social activity by older persons. For example, Vaillancourt (1994) shows that the smaller the regional scale, the larger the volunteer labor supply tends to be. In this paper, an urban scale dummy was set to control the impact of regional scale. Levels of participation in volunteer activities are also thought to differ because the state of labor supply and demand differs from region to region. In this paper, the jobs-to-applicants ratio by age group and by prefecture has been set as a proxy indicator for labor supply and demand based on the Labour Force Survey (Ministry of Internal Affairs and Communications). The descriptive statistics of each variable are summarized in Table 1.

IV. Analysis Results

1. Analysis Results on Determining Factors behind Participation in Volunteer Activities

Table 2 (overall, by gender) and Table 3 (by age group) summarize the analysis results on the probability of participation in volunteer activities by middle-aged and older persons. First, based on the analysis results in Table 2, the various factors that influence the probability of taking part in volunteer activities by middle-aged and older persons will be

Table 2. Analysis of Determining Factors behind Participation

Explained variables Involved in social contribution activities = 1, otherwise = 0	Overall Estimation coefficient	z value	Marginal effect
Market wage rate (estimated)	-0.490 *	-1.91	-0.076
Savings	0.011	0.32	0.003
Income of other family members	0.004 **	2.13	0.001
Age	-0.598 *	-1.84	-0.140
Square of age	0.005 *	1.89	0.001
Educational background (junior high school leavers)			
Senior high school leavers	0.270 **	2.39	0.065
Junior college and vocational college graduates	0.509 ***	3.15	0.087
University and graduate school graduates	0.544 ***	3.32	0.122
Men	0.077	0.52	
State of health (good)			
Normal	-0.086	-0.88	-0.031
Poor	-0.417 **	-2.54	-0.112
Spouse-related status (no spouse)			
Spouse/regular employee	-0.273	-1.55	-0.054
Spouse/non-regular	0.081	0.57	-0.016
Spouse/not in employment	0.148	1.20	-0.008
Number of cohabiting relatives	-0.008	-0.26	0.005
With family nursing care	0.161	1.52	0.039
Child-related status (childless)			
Children independent	0.262 *	1.61	0.053
1–4 years support	0.309 *	1.60	0.056
More than 5 years support	0.492 **	2.26	0.124
Prospects unknown	0.327	1.56	0.050
Life satisfaction	0.197 **	2.36	0.018
Mandatory retirement experience	0.131	1.32	0.053
Jobs-to-applicants ratio	0.040	0.07	0.071
Urban scale (less than 50,000 inhabitants)			
50,000–99,999 inhabitants	-0.006	-0.05	0.004
100,000–199,999 inhabitants	0.002	0.01	0.051
200,000–499,999 inhabitants	-0.066	-0.55	0.017
500,000 inhabitants or more	0.080	0.52	0.089
Constant term	19.785 *	1.85	
Sample size	1711		
Maximum likelihood probability	-633.026		
Coefficient of determination	0.055		

Source: Calculated by the author from the *Survey on Hiring and Employment Status of Older Persons*
Notes: 1. *, **, *** show significance levels of 10%, 5%, and 1%, respectively.

2. Age groups limited to the 55–69 bracket.

in Volunteer Activities by Middle-Aged and Older Persons (1)

Men			Women		
Estimation coefficient	z value	Marginal effect	Estimation coefficient	z value	Marginal effect
-0.393	-1.17	-0.076	-0.655	-1.44	-0.126
0.016	0.35	0.003	0.023	0.40	0.004
0.007 **	2.03	0.001	0.003	0.89	4.885E-04
-0.724 *	-1.69	-0.140	-0.570	-1.06	-0.110
0.006 *	1.73	0.001	0.005	1.07	0.001
0.329 **	2.17	0.065	0.181	1.01	0.035
0.374	1.42	0.087	0.532 **	2.28	0.125
0.539 ***	2.62	0.122	0.658 *	1.94	0.172
-	-	-	-	-	-
-0.161	-1.32	-0.031	0.041	0.23	0.008
-1.013 ***	-2.98	-0.112	-0.126	-0.54	-0.023
-0.332	-1.24	-0.054	-0.267	-1.05	-0.046
-0.087	-0.40	-0.016	0.124	0.58	0.025
-0.041	-0.21	-0.008	0.319 *	1.86	0.065
0.026	0.66	0.005	-0.048	-0.98	-0.009
0.188	1.36	0.039	0.110	0.63	0.022
0.282	1.31	0.053	0.195	0.72	0.036
0.259	1.04	0.056	0.283	0.84	0.062
0.504 *	1.84	0.124	0.482	1.26	0.118
0.231	0.80	0.050	0.409	1.24	0.095
0.094	0.85	0.018	0.297 **	2.21	0.059
0.267 **	2.05	0.053	0.026	0.15	0.005
0.369	0.47	0.071	-0.429	-0.47	-0.082
0.022	0.14	0.004	-0.060	-0.34	-0.011
0.240	1.44	0.051	-0.381 **	-1.70	-0.062
0.087	0.54	0.017	-0.221	-1.16	-0.040
0.386	1.56	0.089	-0.474 *	-1.69	-0.071
22.860 *	1.62		20.711	1.15	
1033			678		
-375.383			-244.083		
0.076			0.074		

conducted by JILPT in 2009.

Table 3. Analysis of Determining Factors behind Participation

Explained variables Involved in social contribution activities = 1, otherwise = 0	Ages 55–59 Estimation coefficient	z value	Marginal effect
Market wage rate (estimated)	-0.711	-1.59	-0.114
Savings	0.031	0.50	0.005
Income of other family members	0.002	0.84	3.557E-04
Age	-4.296	-0.86	-0.689
Square of age	0.037	0.84	0.006
Educational background (junior high school leavers)			
Senior high school leavers	0.337	1.22	0.054
Junior college and vocational college graduates	1.116 ***	3.35	0.284
University and graduate school graduates	0.880 **	2.41	0.192
Men	0.386	1.33	0.059
State of health (good)			
Normal	0.074	0.43	0.012
Poor	0.333	0.71	0.066
Spouse-related status (no spouse)			
Spouse/regular employee	-0.463 *	-1.74	-0.063
Spouse/non-regular	-0.313	-1.23	-0.046
Spouse/not in employment	-0.112	-0.47	-0.017
Number of cohabiting relatives	0.011	0.20	0.002
With family nursing care	0.301 *	1.69	0.055
Child-related status (childless)			
Children independent	-0.006	-0.02	-0.001
1–4 years support	0.013	0.04	0.002
More than 5 years support	0.096	0.29	0.016
Prospects unknown	0.229	0.62	0.042
Life satisfaction	0.185	1.22	0.030
Mandatory retirement experience	-0.302	-0.54	-0.040
Jobs-to-applicants ratio	1.216	1.16	0.195
Urban scale (less than 50,000 inhabitants)			
50,000–99,999 inhabitants	0.084	0.38	0.014
100,000–199,999 inhabitants	-0.021	-0.09	-0.003
200,000–499,999 inhabitants	0.031	0.14	0.005
500,000 inhabitants or more	0.522	1.67	0.110
Constant term	128.272	0.90	
Sample size	612		
Maximum likelihood probability	-190.547		
Coefficient of determination	0.090		

Source: Calculated by the author from the *Survey on Hiring and Employment Status of Older Persons*
Notes: 1. *, **, *** show significance levels of 10%, 5%, and 1%, respectively.

2. Age groups limited to the 55–69 bracket.

in Volunteer Activities by Middle-Aged and Older Persons (2)

Ages 60–64			Ages 65–69		
Estimation coefficient	z value	Marginal effect	Estimation coefficient	z value	Marginal effect
-0.229	-0.49	-0.035	-1.015 *	-1.66	-0.244
0.038	0.65	0.006	-0.013	-0.18	-0.003
-0.001	-0.18	-1.495E-04	0.014 ***	2.74	0.003
6.427	1.16	0.983	-1.440	-0.25	-0.346
-0.052	-1.15	-0.008	0.010	0.25	0.002
0.677 ***	2.87	0.106	0.107	0.61	0.026
0.565 *	1.74	0.115	-0.258	-0.69	-0.055
0.551 *	1.68	0.109	0.574 **	2.17	0.166
-0.087	-0.32	-0.014	0.162	0.54	0.038
-0.173	-0.99	-0.026	-0.228	-1.21	-0.056
-0.830 **	-2.10	-0.079	-0.449 *	-1.80	-0.096
-0.131	-0.36	-0.019	0.130	0.25	0.033
0.453 *	1.62	0.082	0.127	0.47	0.032
0.445 *	1.75	0.070	0.097	0.48	0.023
-0.003	-0.05	-4.848E-04	-0.023	-0.46	-0.006
0.103	0.53	0.016	-0.001	0.00	-2.213E-04
0.867 **	1.97	0.117	0.253	0.90	0.057
0.996 **	2.08	0.240	0.132	0.33	0.033
1.168 **	2.10	0.321	0.811 *	1.88	0.261
0.987 **	1.98	0.243	0.210	0.58	0.055
0.348 **	2.23	0.055	0.054	0.37	0.013
-0.012	-0.07	-0.002	0.303 **	1.98	0.071
-1.479	-1.30	-0.226	0.841	0.81	0.202
0.084	0.40	0.013	-0.020	-0.10	-0.005
-0.087	-0.35	-0.013	0.149	0.68	0.037
-0.103	-0.47	-0.015	-0.204	-0.97	-0.046
-0.307	-1.00	-0.040	0.107	0.39	0.027
-200.895	-1.17		55.001	0.29	
580			519		
-186.774			-222.898		
0.117			0.081		

conducted by JILPT in 2009.

studied.

Firstly, on income factors, (1) although the statistically significant level is 10%, the probability of participation tends to be 7.6 percentage points lower for every 1 unit increase in the logarithm of the market wage rate. In other words, the higher the market wage rate, the lower the likelihood of taking part in volunteer activities. Freeman (1997), Atoda and Fukushige (2000) produced similar results, suggesting a trade-off relationship between market labor and volunteer activities. The following may be posited regarding the analysis results on wage rates. According to the subjective equilibrium model for labor supply, the higher the wage rate, the shorter the working hours and the longer the leisure time, due to the income effect. According to the substitution effect, on the other hand, working hours would be longer and leisure time shorter. The impact of the wage rate on volunteer activities results from this kind of trade-off between the income effect and the substitution effect. When the substitution effect is greater than the income effect, this is thought to be reflected in the result that older persons are less likely to take part in volunteer activities if the wage rate is higher. Estimates based on gender do not seem to be affected by the wage rate, however.

In the estimates by gender, the probability of men being involved in volunteer activities tends to increase in proportion to the income of other family members. Among women, conversely, no statistically significant variable is seen. The impact of non-earned income on volunteer activities is larger among men, showing a clear bias based on gender. The main reason for this may lie in the fact that, in Japan, more people perceive a gender-based division of labor roles, to the effect that that "men work, women stay at home." The result of this gender-based role division is thought to be that, if non-earned income is not a significant part of the household budget, men have no option but to concentrate on market labor, and this reduces their likelihood of being involved in volunteer activities.

(2) The probability of taking part in volunteer activities tends to rise in proportion to the income of other family members, that is similar to that of Menchik and Weisbrod (1987). However, while the impact of non-earned income is statistically notable, its effect is not great. For example, the estimation results have made it clear that, even if the income of other family members were to increase by 1 million yen, the probability of taking part in volunteer activities would only increase by a mere 0.1 percentage point.

Secondly, on individual attribute factors, (1) although the statistically significant level is 10%, the first order of age produced a negative value but the second was positive. As a result of calculation using the average values for each factor based on the analysis results, we know that the probability of participation falls from 12.67% at age 55 to 10.66% at age 60, then climbs again to 14.93% at age 65 and further to 19.35% at age 69. In other words, age and the probability of taking part in volunteer activities appear to be in a U-shaped relationship among middle-aged and older persons. Because the distribution ratio of mandatory

retirement age in Japanese companies is mostly between 60 and 65,[9] the probability of taking part in volunteer activities is thought to increase from age 61 onwards. This trend is reflected in that, in the estimates by gender, the same U-shaped relationship is only found among men. This shows that, for men, the timing of mandatory retirement is a key point that influences the probability of taking part in volunteer activities.

The analysis results related to age in this paper are contrary to those of Menchik and Weisbrod (1987). This is probably because the age groups targeted by the analysis are different. To examine the effect of age in more detail, an analysis aimed at all age groups will need to be made in future.

(2) On the impact of educational background, the probability of taking part in volunteer activities is 6.5 percentage points higher among senior high school group, 8.7 percentage points higher among junior college and vocational college groups, and 12.2 percentage points higher among university and graduate school groups, compared to junior high school group. This confirms that, in middle-aged and older persons, the probability of taking part in volunteer activities increases in proportion to the final educational level. The probability of taking part in volunteer activities is higher in the medium and higher educational background groups compared to the lower educational background group (junior high school group) for both men and women, although this impact of educational background was relatively larger among the latter.

Because the wage rate is controlled here, the analysis results of educational background are thought to reflect educational background effects other than market wage. That is, there would appear to be differences between educational backgrounds in awareness and behavior related to volunteer activities.

(3) The male dummy estimation is not statistically significant, and is not consistent with the conclusions of previous studies. Compared to other age groups, there are relatively more mandatory retirees (persons not in employment) among middle-aged and older persons, with little gender bias in time constraints. This is thought to explain why there is no pronounced differential between men and women in decision-making on the volunteer labor supply.

(4) Compared to respondents with good health, the probability of taking part in volunteer activities is 11.2 percentage points lower among those with poor health. This also highlights the fact that health influences decisions on taking part in volunteer activities among older persons. In terms of the estimates by gender, the probability of taking part in volunteer activities is 11.2 percentage points lower in men with poor health than in those with good health. Among women, conversely, the impact of health is not statistically significant. State of health has a larger impact among men.

Thirdly, on family composition factors, the probability of taking part in volunteer ac-

[9] According to the Survey on Employment and Hiring and of Older Persons conducted by JILPT in 2008, the distribution ratio of mandatory retirement ages in Japanese companies was 86.9% at age 60, 0.8% at 61, 1.6% at 62, 2.2% at 63, 0.3% at 64, and 10.5% at 65.

tivities is 5.3 percentage points, 5.6 percentage points and 12.4 percentage points higher, respectively, in the children independent group, 1–4 years support group, and more than 5 years support group, in terms of overall estimation, compared to the childless group.

In terms of the estimation by gender, (1) among women, the probability of taking part in volunteer activities tends to be 6.5 percentage points higher when there is a spouse who is not in employment, compared to cases with no spouse. Among men, conversely, the spouse-related status does not markedly influence the probability of participation. (2) Among men, the probability of participation is 5.0 percentage points higher among those with children needing at least 5 years of support than in those without children. By contrast, the child-related status does not have a statistically significant impact on the probability of participation by women.

Fourthly, as the overall estimation concerning the other factors, (1) the probability of participation tends to rise in direct proportion to the level of life satisfaction. In the case of women, the probability of participation is 5.9 percentage points higher in groups with high levels of life satisfaction. Among men, on the other hand, life satisfaction has no statistically significant impact, revealing a gender differential in the impact of life satisfaction.

(2) Among men, the likelihood of taking part in volunteer activities is 5.3 percentage points higher among those who had experienced mandatory retirement compared to those who had not. Among women, on the other hand, this has no significant impact on the probability of participation. Since the majority of males concentrate solely on employment until mandatory retirement, mandatory retirement is a major life event for them, and is thought to provide the impetus for shifting from employment to volunteer activities.

(3) Among women, the probability of taking part in volunteer activities appears to be lower when the urban scale is greater, a result similar to that found by Vaillancourt (1994). According to the analysis results, the probability of participation is 6.2 percentage points and 7.1 percentage points lower, respectively, in groups living in cities with 100,000–200,000 inhabitants and those with upwards of 500,000 inhabitants, compared to groups living in cities with less than 50,000 inhabitants. In other words, the proportion of people with community awareness (or people who place value on social capital) would appear to rise in inverse proportion to urban scale. It is surmised that women shoulder the largest burden of community activity.

Finally, the analysis results by age group will be compared (see Table 3).

Firstly, on income factors, the probability of taking part in volunteer activities in the 65–69 age group tends to increase in proportion to the income of other family members, and in inverse proportion to the market wage rate. Conversely, in the 55–59 and 60–64 age groups, the estimated values for neither the market wage rate nor non-earned income are statistically significant. The reason why a difference between age groups exists in the impact of market wage rate and non-earned income could be because the 65–69 age group has a larger ratio of persons not in employment than the 55–59 and 60–64 age groups. Moreover, time constraints are smaller than in the 55–59 and 60–64 age groups, where there are large

time constraints due to employment, with less freedom for making choices not related to work. When deciding whether or not to take part in volunteer activities, the impact of economic factors such as market wage rate and non-earned income appears to play a larger role in this age group.

Secondly, on individual attribute factors, (1) on the impact of educational background, the probability of participation is higher in all ages for groups from a higher educational background than for junior high school leavers.

(2) The impact of health is greater in the 60s age groups than in the 50s age group. For example, the probability of taking part in volunteer activities is 7.9 percentage points lower (age 60–64) and 9.6 percentage points lower (ages 65–69) in the poor health group than in the good health group. In the 55–59 age group, however, the state of health does not significantly impact the probability of participation.

Thirdly, on family composition factors, (1) the impact of the spouse-related status is seen in the 55–59 and 60–64 age groups. In the 55–59 age group, for example, the probability of participation is 6.3 percentage points lower when the spouse is a regular employee group compared to the no spouse group, while the probability of participation is 5.5 percentage points higher in the group where family nursing care is required. In the 60–64 age group, meanwhile, the probability of participation is 8.2 percentage points and 7.0 percentage points higher, respectively, in the spouse non-regular employee group and the spouse not in employment group, compared to the no spouse group.

(2) In the 60–64 age group, the child-related status has the biggest impact. In the 60-64 age group, the probability of taking part in volunteer activities is 11.7 percentage points higher (children independent), 24.0 percentage points higher (1–4 years support), 32.1 percentage points higher (more than 5 years support), and 24.3 percentage points higher (prospects unknown), respectively, compared to the childless group. In the 55–59 age group, estimation results concerning the child-related status are not statistically significant.

Fourthly, as for other factors, (1) the impact of life satisfaction is larger in the 60–64 age group. In the 55–59 and 65–69 age groups, life satisfaction does not significantly impact the probability of participation, but in the 60–64 age group, it was confirmed that the probability of participation is higher for those with higher levels of life satisfaction.

(2) The impact of mandatory retirement experience is seen in the 65–69 age group. In this age group, it is suggested that mandatory retirement provided some people with the impetus for taking part in volunteer activities.

Table 2 Determining factors behind participation in social contribution activities and willingness to participate (1)

2. Analysis Results on Determining Factors behind Willingness to Participate in Volunteer Activities

Table 4 (overall, by gender) and Table 5 (by age group) summarize analysis results concerning factors that influence the probability that people not currently involved in

Table 4. Determining Factors behind Willingness to Participate

Explained variables	Overall		
Want to be involved in social contribution activities = 1, Do not want to be involved = 0	Estimation coefficient	z value	Marginal effect
Market wage rate (estimated)	-0.086	-0.38	-0.032
Savings	0.065 *	1.78	0.024
Income of other family members	0.006 **	2.25	0.002
Age	-0.067	-0.23	-0.025
Square of age	4.245E-04	0.18	1.559E-04
Educational background (junior high school leavers)			
Senior high school leavers	0.287 ***	2.96	0.105
Junior college and vocational college graduates	0.476 ***	3.24	0.184
University and graduate school graduates	0.572 ***	3.79	0.220
Men	-0.085	-0.65	-0.031
State of health (good)			
Normal	-0.131	-1.56	-0.048
Poor	-0.790 ***	-5.43	-0.242
Spouse-related status (no spouse)			
Spouse/regular employee	-0.413 ***	-2.89	-0.140
Spouse/non-regular	-0.120	-0.98	-0.043
Spouse/not in employment	0.012	0.11	0.004
Number of cohabiting relatives	-0.031	-1.13	-0.012
With family nursing care	-0.007	-0.07	-0.003
Child-related status (childless)			
Children independent	0.179	1.43	0.065
1–4 years support	0.105	0.68	0.039
More than 5 years support	0.430 **	2.30	0.166
Prospects unknown	0.190	1.10	0.072
Life satisfaction	0.067	0.89	0.025
Mandatory retirement experience	-0.001	-0.01	-2.422E-04
Jobs-to-applicants ratio	-0.221	-0.43	-0.081
Urban scale (less than 50,000 inhabitants)			
50,000–99,999 inhabitants	-0.139	-1.36	-0.050
100,000–199,999 inhabitants	-0.056	-0.49	-0.020
200,000–499,999 inhabitants	0.018	0.17	0.007
500,000 inhabitants or more	-0.068	-0.48	-0.025
Constant term	2.641	0.28	
Sample size	1457		
Maximum likelihood probability	-889.550		
Coefficient of determination	0.060		

Source: Calculated by the author from the *Survey on Hiring and Employment Status of Older Persons*
Notes: 1. *, **, *** show significance levels of 10%, 5%, and 1%, respectively.
2. Age groups limited to the 55–69 bracket.

in Volunteer Activities by Middle-Aged and Older Persons (1)

Men			Women		
Estimation coefficient	z value	Marginal effect	Estimation coefficient	z value	Marginal effect
0.051	0.17	0.019	-0.437	-1.16	-0.159
0.070	1.53	0.026	0.062	1.00	0.023
0.005	1.33	0.002	0.008 **	2.10	0.003
-0.110	-0.29	-0.041	0.002	0.00	0.001
0.001	0.27	2.978E-04	-1.465E-04	-0.04	-5.330E-05
0.342 ***	2.68	0.126	0.221	1.42	0.080
0.165	0.72	0.062	0.691 ***	3.28	0.266
0.510 ***	2.78	0.195	0.840 **	2.51	0.325
-	-	-	-	-	-
-0.116	-1.08	-0.042	-0.204	-1.41	-0.074
-0.691 ***	-3.12	-0.214	-0.853 ***	-4.08	-0.264
-0.249	-1.11	-0.088	-0.463 **	-2.35	-0.156
0.006	0.03	0.002	-0.137	-0.75	-0.049
0.265	1.58	0.097	-0.268 *	-1.74	-0.095
-0.040	-1.07	-0.015	-0.021	-0.50	-0.008
-0.061	-0.48	-0.022	0.045	0.29	0.017
0.212	1.28	0.078	0.041	0.20	0.015
0.136	0.69	0.051	-0.110	-0.40	-0.039
0.474 **	2.00	0.184	0.241	0.73	0.091
0.132	0.56	0.050	0.156	0.58	0.058
0.042	0.43	0.016	0.109	0.90	0.040
-0.103	-0.91	-0.038	0.122	0.81	0.045
-0.365	-0.53	-0.134	-0.185	-0.23	-0.067
-0.084	-0.63	-0.031	-0.244	-1.46	-0.086
-0.117	-0.80	-0.042	-0.005	-0.03	-0.002
0.084	0.63	0.031	-0.082	-0.47	-0.029
0.001	0.00	2.708E-04	-0.145	-0.63	-0.051
2.619	0.21		3.169	0.20	
878			579		
-537.083			-340.939		
0.061			0.088		

conducted by JILPT in 2009.

Table 5. Determining Factors behind Willingness to Participate

Explained variables	Ages 55–59		
Want to be involved in social contribution activities = 1, Do not want to be involved = 0	Estimation coefficient	z value	Marginal effect
Market wage rate (estimated)	0.300	0.83	0.114
Savings	0.194 ***	2.58	0.074
Income of other family members	0.003	0.82	0.001
Age	-0.116	-0.03	-0.044
Square of age	4.772E-04	0.01	1.819E-04
Educational background (junior high school leavers)			
Senior high school leavers	0.120	0.64	0.046
Junior college and vocational college graduates	0.214	0.81	0.083
University and graduate school graduates	0.273	0.97	0.106
Men	-0.210	-0.93	-0.081
State of health (good)			
Normal	-0.073	-0.54	-0.028
Poor	-0.179	-0.41	-0.066
Spouse-related status (no spouse)			
Spouse/regular employee	-0.351 *	-1.65	-0.129
Spouse/non-regular	-0.069	-0.34	-0.026
Spouse/not in employment	0.218	1.12	0.084
Number of cohabiting relatives	-0.020	-0.43	-0.008
With family nursing care	-0.024	-0.15	-0.009
Child-related status (childless)			
Children independent	0.223	1.06	0.085
1–4 years support	-0.084	-0.35	-0.032
More than 5 years support	0.304	1.13	0.119
Prospects unknown	0.300	1.00	0.117
Life satisfaction	-0.073	-0.60	-0.028
Mandatory retirement experience	-0.517	-1.19	-0.176
Jobs-to-applicants ratio	-1.492 *	-1.71	-0.569
Urban scale (less than 50,000 inhabitants)			
50,000–99,999 inhabitants	0.205	1.16	0.079
100,000–199,999 inhabitants	0.172	0.93	0.066
200,000–499,999 inhabitants	0.159	0.89	0.061
500,000 inhabitants or more	0.239	0.95	0.093
Constant term	2.871	0.03	
Sample size	540		
Maximum likelihood probability	-339.181		
Coefficient of determination	0.058		

Source: Calculated by the author from the *Survey on Hiring and Employment Status of Older Persons*

Notes: 1. *, **, *** show significance levels of 10%, 5%, and 1%, respectively.

2. Age groups limited to the 55–69 bracket.

in Volunteer Activities by Middle-Aged and Older Persons (2)

Ages 60–64			Ages 65–69		
Estimation coefficient	z value	Marginal effect	Estimation coefficient	z value	Marginal effect
-0.053	-0.14	-0.020	-0.946	-1.52	-0.309
0.032	0.59	0.012	-0.047	-0.63	-0.015
0.007	1.54	0.003	0.010 *	1.87	0.003
-5.048	-1.12	-1.874	1.933	0.33	0.630
0.041	1.13	0.015	-0.015	-0.34	-0.005
0.332 **	2.03	0.123	0.476 ***	2.58	0.156
0.587 **	2.42	0.228	0.826 ***	2.61	0.310
0.753 ***	2.95	0.292	0.661 **	2.29	0.242
-0.106	-0.48	-0.039	0.218	0.73	0.070
-0.133	-0.95	-0.049	-0.304	-1.54	-0.100
-0.616 **	-2.53	-0.200	-1.048 ***	-4.07	-0.284
-0.608 **	-2.42	-0.199	0.243	0.50	0.085
-0.323	-1.57	-0.115	0.366	1.30	0.129
-0.138	-0.77	-0.051	0.082	0.40	0.026
-0.031	-0.60	-0.011	-0.044	-0.83	-0.014
-0.008	-0.05	-0.003	0.016	0.07	0.005
0.238	1.16	0.087	0.076	0.28	0.025
0.282	1.05	0.108	0.557	1.42	0.204
0.768 **	2.05	0.299	0.556	1.14	0.204
0.034	0.12	0.013	0.142	0.40	0.048
0.121	0.92	0.045	0.212	1.35	0.070
-0.034	-0.26	-0.012	0.057	0.38	0.019
0.457	0.52	0.170	-0.110	-0.10	-0.036
-0.133	-0.74	-0.049	-0.578 ***	-2.88	-0.171
0.110	0.55	0.041	-0.590 **	-2.38	-0.165
-0.001	-0.01	0.000	-0.038	-0.19	-0.012
-0.059	-0.26	-0.022	-0.354	-1.24	-0.104
155.295	1.11		-57.681	-0.30	
500			417		
-303.500			-218.501		
0.074			0.139		

conducted by JILPT in 2009.

volunteer activities will want to do so in future (hereinafter "the probability of willingness to participate").

First, the analysis results will be studied using overall and gender-specific samples (see Table 4).

Firstly, on income factors, the overall analysis shows that the likelihood of wanting to be involved in volunteer activities tends to be higher when savings and the income of other family members are higher. For example, for every 1 million yen increase in non-earned income, the probability of willingness to participate in volunteer activities is 2.4 percentage points higher (savings) and 0.2 percentage point higher (family income), respectively. By gender, the probability of women wanting to be involved in volunteer activities increases in direct proportion to the income of other family members. Among men, on the other hand, none of the estimated values for non-earned income are statistically significant.

Secondly, on individual attribute factors, (1) no significant impact of age on the probability of willingness to participate could be confirmed, from either the overall or the gender-specific analysis.

(2) On the impact of educational background, the probability of willingness to participate in volunteer activities is higher among senior high school group (10.5 percentage points), junior college and vocational college group (18.4 percentage points) and university and graduate school groups (22.0 percentage points) than among junior high school group. For both men and women, moreover, the probability of wanting to be involved in volunteer activities is higher in groups with a higher educational level than among junior high school leavers, while the impact of educational background appears to be relatively larger among women.

(3) Compared to respondents in good health, the probability of willingness to participate in volunteer activities by those in poor health is 24.2 percentage points lower. By gender, the probability of willingness to participate by those in poor health is 21.4 percentage points lower (men) and 26.4 percentage points lower (women) than by those in good health.

Thirdly, on family composition factors, (1) the probability of willingness to participate is 14.0 percentage points lower overall when the spouse is a regular employee compared to the no spouse group. The same trend is seen for women but not for men. (2) The probability of willingness to participate in volunteer activities is 16.6 percentage points higher in the more than 5 years support group compared to the childless group. The same trend is seen among men but not among women.

Finally, the analysis results by age group will be compared (see Table 5).

Firstly, on income factors, the probability of willingness to participate among the 55–59 age group increases by 7.4 percentage points for every 1 million yen increase in savings. In the 65–69 age group, the probability of willingness to participate increases by 0.3 percentage point for every 1 million yen increase in the income of other family members. In the 60–64 age group, by contrast, savings and the income of other family members do not have a statistically significant impact on the probability of willingness to participate. In this

group, no impact of income factors can be seen on the probability of participation, either. It may be that, in this generation, factors that encourage volunteer activities can be found outside the scope of economic grounds.

Secondly, on individual attribute factors, (1) the probability of willingness to participate tends to be higher in the 60–64 and 65–69 age groups if the educational background is higher. In the 55–59 age group, conversely, educational background does not significantly impact the probability of willingness to participate.

(2) The state of health is seen to have an impact in the 60s age groups. For example, the probability of taking part in volunteer activities by those in poor health is 20.0 percentage points lower (ages 60–64) and 28.4 percentage points lower (ages 65–69) than by those in good health. In the 55–59 age group, conversely, the state of health does not have a significant impact on the probability of participation.

Thirdly, on family composition factors, (1) the impact of the spouse-related status is larger in the 55–59 and 60–64 age groups. For example, compared to the no spouse group, the probability of participation is 12.9 percentage points lower (55–59) and 19.9 percentage points lower (60–64) in the spouse regular employee group. In the 65–69 age group, conversely, the impact of the spouse-related status on the probability of willingness to participate is not statistically significant. (2) In the 60–64 age group, compared to the childless group, the probability of willingness to participate is 29.9 percentage points higher in the more than 5 years support group. On the other hand, in both the 55–59 and 65–69 age groups, estimation results on the child-related status are not statistically significant.

Fourthly, on other factors, (1) the impact of labor supply and demand is greatest in the 55–59 age group, where the probability of willingness to participate in volunteering decreases as the jobs-to-applicants ratio rises (the local labor demand rises). On the other hand, the impact of the jobs-to-applicants ratio is not statistically significant in the 60s age groups. (2) In the 65–69 age group, compared to groups living in small-scale cities (cities with less than 50,000 inhabitants), the probability of willingness to participate is 17.1 points lower (50,000–99,999 inhabitants) and 16.5 percentage points lower (100,000–199,999 inhabitants) for groups living in medium- to large-scale cities. In the 55–59 and 60–64 age groups, on the other hand, there is no pronounced bias in the probability of willingness to participate depending on urban scale.

V. Conclusions

This paper uses microdata from the JILPT Survey on Hiring and Employment Status of Older persons (2009) to analyze respondents in the 55–69 age bracket, and conducts empirical research on the factors that influence participation in volunteer activities and willingness to participate. The main conclusions are as follows.

Firstly, the determining factors behind participation in volunteer activities were examined. (1) As income factors, the likelihood of taking part in social contribution activities

tends to decrease as the market wage rate rises. Market labor and volunteer activities are in a trade-off relationship. Conversely, although the probability of taking part in volunteer activities tends to increase as the income of other family members rises, the effects of this are not so great. (2) As for individual attribute factors, the probability of participation by middle-aged and older persons tends to decrease as age rises from 55 to 60, reaching its lowest level in the age 60 group. By contrast, the probability of participation tends to increase between the ages of 61 and 69. In other words, age and the probability of taking part in volunteer activities are in a U-shaped relationship among middle-aged and older persons. The higher the final educational level, the higher the probability of taking part in volunteer activities. There is little gender differential in the volunteer labor supply from middle-aged and older persons. And the probability of taking part in volunteer activities is lower among those in poor health than those in good health. (3) On family composition factors, the probability of taking part in volunteer activities is higher in groups with children compared to those without. (4) The probability of participation tends to be in direct proportion to the level of life satisfaction.

Secondly, determining factors behind willingness to participate in volunteer activities were examined. (1) As income factors, the likelihood of wanting to be involved in volunteer activities tends to be in direct proportion to savings and the income of other family members. (2) As regards individual attribute factors, the likelihood of wanting to be involved in volunteer activities is higher among those from a higher educational level and those in good health. (3) On family composition factors, the probability of willingness to participate in volunteer activities is higher among respondents with children requiring more than 5 years of support, compared to the childless group.

Thirdly, in these determining factors behind participation in volunteer activities and willingness to participate, the impact of each factor differs according to gender and age groups. For example, the impact of non-earned income and other economic factors on participation in volunteer activities is larger among men than among women, and larger in the 65–69 age group than in the 55–59 and 60–64 age groups. On the other hand, the impact of non-earned income and other economic factors on future willingness to participate in volunteer activities is larger among women than among men, and larger in the 55–59 and 65–69 age groups than in the 60–64 age group.

These results of empirical analysis are thought to have the following policy implications.

Firstly, overall, the probability of middle-aged and older persons taking part in volunteer activities tends to be lower if the market wage is higher, suggesting a trade-off relationship between market labor and volunteer activities. In this sense, promoting the continued employment of older persons could lead to a decrease in the volunteer labor supply. One reason for this is the fact that, even among older persons, working full-time is common practice, and there is a trade-off relationship between working hours and leisure time (volunteer activities). That is to say, hours of volunteer labor supply are thought to decrease as

working hours lengthen. Of course, this could be said not only for older persons but also for all workers in general. Nevertheless, to promote participation in volunteer activities, we will need to consider introducing flexible systems of managing working hours (for example, short hour working systems or flextime systems), or revising excessive overtime work.

Secondly, it has been shown that age and the probability of taking part in volunteer activities are in a U-shaped relationship among middle-aged and older persons, and that, from the age of 61, the probability of participation tends to increase with age. Among men, in particular, mandatory retirement appears to trigger an increased likelihood of taking part in volunteer activities. To promote volunteer activities by middle-aged and older persons, therefore, we will need to encourage participation in volunteer activities among people in their 50s (i.e. before the age of mandatory retirement) or to offer trials, etc., anticipating the timing of mandatory retirement and subsequent lifestyles. However, a gender and age differentials are observed both in the probability of taking part in volunteer activities and the probability of willingness to participate. As such, we will need to find different methods of promotion suited to each particular group. Why this kind of differential exists in middle-aged and older persons is seen as an issue for further analysis in future.

Finally, issues not treated by this paper should be pointed out. Firstly, this paper has given an empirical analysis of determining factors behind the volunteer labor supply among older persons, using cross-section data from a specific point in time. Although this has produced new knowledge, problems of heterogeneity between individuals could remain in the analysis results. Analysis using panel data related to this issue should be made in future. Moreover, we will also need to conduct detailed analysis on factors on the volunteer demand side, as well as regional differentials in the volunteer labor supply.

Appendix Table. Estimation Results of Wage Function in Older Persons

	Heckman's two-step estimation method				OLS (wage function)	
	2nd step estimation (wage function)		1st step estimation (employment selection function)			
	Estimation coefficient	z value	Estimation coefficient	z value	Estimation coefficient	z value
Men	0.356 ***	7.09	0.076	0.72	0.357 ***	7.08
Years of experience	-0.124 **	-1.86	-0.091	-0.72	-0.141 **	-2.10
Square of years of experience	0.001	1.46	3.20E-04	0.25	0.001	1.55
Educational background (junior high school leavers)						
Senior high school leavers	-0.023	-0.36	-0.228 *	-1.86	-0.067	-1.08
Junior college and vocational college graduates	-0.143	-1.55	-0.159	-0.85	-0.189 **	-2.08
University and graduate school graduates	-0.075	-0.68	-0.736 ***	-3.76	-0.208 **	-2.02
State of health (good)						
Normal	0.117 **	2.31	-0.337 ***	-3.88	0.077	1.57
Poor	0.362 **	2.25	-1.281 ***	-7.51	0.134	0.91
With family nursing care			-0.222 **	-2.18		
Eligible for pension			0.149	1.54		
Number of family members			-0.032	-1.17		
Savings			3.52E-12	0.42		
Income of other family members			-0.006 ***	-3.47		
Mandatory retirement experience			-0.043	-0.42		
Experience of occupation change			-1.218 ***	-12.53		
Regular employee	0.406 ***	8.14			0.422 ***	8.30
Occupation at age 55 (Clerical workers)						
Specialist and technical	0.019	0.28	0.025	0.19	0.018	0.26
Administrative and managerial workers	0.068	0.80	0.001	0.01	0.027	0.32
Sales workers	-0.263 ***	-3.14	0.601 ***	3.79	-0.280 ***	-3.35
Service workers	-0.189 **	-2.35	0.673 ***	4.31	-0.206 **	-2.56
Security, transport and communication workers	-0.185 **	-2.36	-0.087	-0.58	-0.187 **	-2.38
Workers not classifiable by occupation	-0.280 ***	-3.32	0.105	0.62	-0.276 ***	-3.27
Corporate scale at age 55 (99 employees or less)						
100–999 employees	0.129 **	2.56	0.215 **	2.20		
1,000 employees or more	0.403 ***	7.54	0.197 *	1.91	0.149 ***	2.98
Public offices	0.415 ***	4.98	-0.273 *	-1.89	0.414 ***	7.75
Regular employees at age 55			-0.071	-0.68	0.374 ***	4.52
Jobs-to-applicants ratio			-0.631	-0.88		

Appendix Table (*Continued*)

	Heckman's two-step estimation method				OLS (wage function)	
	2nd step estimation (wage function)		1st step estimation (employment selection function)			
	Estimation coefficient	z value	Estimation coefficient	z value	Estimation coefficient	z value
Regional blocks (Minami-Kanto)						
Hokkaido	-0.310 ***	-2.58	-0.562 ***	-2.61	-0.352 ***	-2.92
Tohoku	-0.092	-1.11	-0.173	-1.00	-0.101	-1.21
Kita-Kanto, Koshin	-0.189 **	-2.38	0.019	0.12	-0.179 **	-2.25
Hokuriku	-0.150	-1.58	0.126	0.70	-0.137	-1.45
Tokai	-0.083	-1.24	0.303 **	2.29	-0.065	-0.96
Kinki	-0.031	-0.47	-0.007	-0.05	-0.032	-0.48
Chugoku, Shikoku	-0.123 *	-1.68	0.033	0.22	-0.128 *	-1.74
Kyushu, Okinawa	-0.094	-1.23	-0.177	-1.20	-0.112	-1.48
Constant term	10.718 ***	6.53	5.306 *	1.68	11.296 ***	6.90
Inverse Mills ratio	-0.235 ***	-3.08				
Sample size	1521				830	
Censoring sample	691					
Non-censoring sample	830					
Freedom corrected coefficient of determination					0.394	

Source: Calculated by the author from the *Survey on Hiring and Employment Status of Older Persons* conducted by JILPT in 2009.

Notes: 1. *, **, *** show significance levels of 10%, 5%, and 1%, respectively.
2. Age groups limited to the 55–69 bracket.

References

Andreoni, James. 1989. Giving with impure altruism: Applications to charity and Ricardian equivalence. *Journal of Political Economy* 97, no. 6:1447–58.

———. 1990. Impure altruism and donations to public goods: A warm-glow theory of giving. *Economic Journal* 100, no. 401:464–77.

Atoda, Naosumi, L.Y. Kim, and Satoko Maekawa. 1999. Shakai fukushi to borantia: Nikkan no jirei kenkyu [Social welfare and volunteering: Case study research in Japan and South Korea]. *Quarterly of Social Security Research* 35, no.3:264–75.

Atoda, Naosumi, and Mototsugu Fukushige. 2000. Chukonen no borantia katsudo he no sanka kozo: Anketo chosa kohyo ni motozuku yoin bunseki [The structure of participation in volunteer activities by middle-aged and older persons: Factor analysis based on questionnaire survey microdata]. *Quarterly of Social Security Research* 36, no.2:246–55.

Barro, Robert J. 1974. Are government bonds net wealth? *Journal of Political Economy* 82, no. 6:1095–1117.

Becker, Gary S. 1974. A theory of social interactions. *Journal of Political Economy* 82, no. 6:1063–93.

———. 1976. Altruism, egoism and genetic fitness: Economics and sociology. *Journal of Economic Literature* 14 (3): 817–26.

———. 1981. Altruism in the family and selfishness in the market place. *Economica* 48, no. 189:1–15.

———. 1991. *Treatise on the family*. Cambridge, MA: Harvard University Press.

Buchinsky, Moshe. 1998. Recent advances in quantile regression models: A practical guideline for empirical research. *Journal of Human Resources* 33, no. 1:88–126.

Carlin, Paul S. 2001. Evidence on the volunteer labor supply of married women. *Southern Economic Journal* 67, no. 4:801–24.

Freeman, Richard B. 1997. Working for nothing: The supply of volunteer labor. *Journal of Labor Economics* 15, no. 1:s140–s166.

Heckman, James J. 1979. Sample selection bias as a specification error. *Econometrica* 47, no. 1:153–61.

Koenker, Roger W., and Gilbert Bassett, Jr. 1978. Regression quantile. *Econometrica* 46, no. 1:33–50.

Menchik, Paul L., and Burton A.Weisbrod. 1987. Volunteer labor supply. *Journal of Public Economics* 32 (2): 159–83.

Moriyama, Tomohiko. 2007. Jimukyokucho no kyaria, yakuwari, hatarakikata [Career, roles and working style of a secretary-general]. In *NPO no shuro hatten he no michisuji: Jinzai, zaisei, hoseido kara kangaeru* [The road to employment growth in an NPO: From the angles of human resources, financial administration and legal systems], ed. the Japan Institute for Labour Policy and Training, JILPT Research Report no.82, 64–93. Tokyo: The Japan Institute for Labour Policy and Training.

Oishi, Akiko. 2000. Koreisha no shugyo kettei ni okeru kenko yoin no eikyo [The impact of health factors on employment decisions by older persons]. *The Japanese Journal of Labour Studies 42*, no. 8:51–62.

Ono, Akiko. 2006. Yusho borantia no hatarakikata to ishiki: Sharei ha katsudo keizoku ni tsunagaruka [Working styles and awareness of paid volunteers: Do rewards lead to continued activity?]. In *NPO no yukyu shokuin to borantia: Sono hatarakikata to ishiki* [*NPO* salaried employees and volunteers: Their working styles and awareness], ed. the Japan Institute for Labour Policy and Training, JILPT Research Report no. 60, 103–41. Tokyo: The Japan Institute for Labour Policy and Training.

Ono, Akiko, and Xinxin Ma. 2012. Borantia katsudo sanka to katsudo jikan ni kansuru senko kenkyu [Previous studies on participation in volunteer activities and activity time]. In *Koreisha no borantia katsudo ni kansuru kenkyu: Teiryoteki bunseki to teiseiteki bunseki kara* [Research on social contribution activities by older persons: From quantitative and qualitative analysis], ed. the Japan Institute for Labour Policy and Training, JILPT Research Report no.142, 8–13. Tokyo: The Japan Institute for Labour Policy

and Training.

Schram,Vicki R., and Marilyn M. Dunsing. 1981. Influences on married women's volunteer work participation. *The Journal of Consumer Research* 7, no.4:372–79.

Segal, Lewis M., and Burton A. Weisbrod. 2002. Volunteer labor sorting across industries. *Journal of Policy Analysis and Management* 21, no.3:427–47.

Seike, Atsushi, and Xinxin Ma. 2009. Dansei koreisha no shugyo kettei no kitei yoin to sono henka: 1980–2004 [Determinants in employment decisions by older men and how they have changed: 1980–2004]. In *Koreihsa no shugyo jittai ni kansuru kenkyu: Koreisha no shuro sokushin ni kansuru kenkyu chukan hokoku* [Research on employment formats of older persons: Interim research report on the promotion of work by older persons], ed. the Japan Institute for Labour Policy and Training, JILPT Research Report no.100, 16–65. Tokyo: The Japan Institute for Labour Policy and Training.

Sen, Amartya. 1982. *Choice, welfare and measurement*. Oxford: Basil Blackwell.

———. 1988. *Fukushi no keizaigaku: Zai to senzai noryoku* (Commodities and Capabilities). Trans. Kyotaro Suzumura. Iwanami Shoten: Tokyo.

———. 1985. Well-being, agency and freedom: The Dewey lectures 1984. *The Journal of Philosophy* 82, no.4:169–224.

Vaillancourt, François. 1994. To volunteer or not: Canada, 1987. *Canadian Journal of Economics* 27, no. 4:813–26.

Yamauchi, Naoto. 1997. *Nonprofitto ekonomi* [Non-profit economy]. Tokyo: Nippon Hyoronsha.

———. 2001. Jenda kara mita hieiri shijo: Shufu ha naze NPO wo mezasuka [His and hers in the Japanese nonprofit labour market]. *The Japanese Journal of Labour Studies* 43, no. 8:30–41.

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