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## ARTICLES



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# *Special feature on articles*

The Editorial Office of *Japan Labor Issues* has selected significant research papers from those published in 2018–2019 for its annual special issues featuring articles, and will deliver them to you in vol.4, no.20 and no.22. These papers address the latest subjects as well as conventional themes on labor in Japan. Each author has arranged the original papers written in Japanese, in translation for the benefit of overseas readers, which surely will offer useful information and deeper insights into the state of labor in Japan. We sincerely thank authors for their effort for this issue.

Editorial Office, *Japan Labor Issues*

# Legal Issues Surrounding Employment-like Working Styles: Disguised Employment and Dependent Self-employment

KAMATA Koichi

Employment-like working styles have been adopted in various fields for some time. Recent trend such as the progress of corporate outsourcing, the digital economy, and artificial intelligence (AI) has prompted growing expectations for persons in such working styles to play a key role in driving Japan's economy. This blurs the line between workers and the self-employed, but at the same time highlights the discrepancies between them in terms of the protection that they receive. While workers enjoy legal protection regarding working hours, wages, dismissal, occupational safety and health, and compensation for work-related injury, the self-employed receive no such protection except for homeworkers. This paper draws on recent results from fact-finding surveys and stances adopted by the ILO and in various countries with the aim to investigate the fundamental approaches toward protection for persons who work mainly personally conducting tasks that have been entrusted to them by a company for remuneration, under a service contract that is not an employment or labor contract. More specifically, it is intended to examine two problems of disguised employment and dependent self-employment, defining the working situations and issues faced by persons in employment-like working styles. Regarding the issues of disguised employment, it discusses potential means of preventing employers from evading the application of labor laws and regulations by using legal form other than labor contract; regarding those of dependent self-employment, it addresses the necessity of protection, its scope of eligibility, related policies, and contents of protection.



## I. Overview of the issues

Employment-like working styles have been adopted in various fields for some time. Recent trend such as the progress of corporate outsourcing, the digital economy, and artificial intelligence (AI), has prompted an increase in the number of persons adopting such working styles and growing expectations for such persons to play a key role in driving Japan's economy.[1] This blurs the line between workers and the self-employed, but at the same time highlights the discrepancies between them in terms of the protection that they receive.

While workers[2] enjoy legal protection regarding working hours, wages, dismissal, occupational safety and health, and compensation for work-related injury, the self-employed receive no such protection except for homeworkers. The unreasonable disparities between the measures for workers and those for the self-employed need to be eradicated as far as possible in order to protect a greater number of persons from the potential disadvantages of choosing an employment-like working styles.

While issues concerning employment-like working styles have been a topic for discussion in Japan for some time,[3] earnest debate first began once the government addressed the situation of non-employment type teleworking and other such employment-like working styles and listed investigating the necessity of legal protection as a mid-to-long term target in its "Action Plan for the Realization of Work Style Reform" in March 2017. The Ministry of Health, Labour and Welfare (MHLW) responded in October 2017 by convening the Meeting on Employment-Like Working Styles, which compiled a report in March 2018—referred to here as the "Employment-Like Working Styles Meeting Report"—clarifying and analyzing the state of employment-like working styles and defining the relevant issues.

In light of said report, the Committee on Basic Labour Policy of the Labour Policy Council (an advisory panel to the MHLW) produced a report in September 2018 stating that "due to the growing adoption of employment-like working styles, labor administration must address the measures to cover a broader range of diverse working persons, rather than focusing exclusively on the conventional definition of workers under the Labor Standards Act, it is important to take into account the diverse nature of employment-like working styles by considering points such as the issues that require administrative intervention, the causes behind such issues, the necessary scope of eligibility for protection, the differences by industry or job type, and the backgrounds and causes behind the growth in such working styles." The MHLW has since established the Meeting on Points of Controversy with regard to Employment-Like Working Styles, which published a preliminary review of its findings—referred to here as the "Interim Report"—in June 2019, and resumed its deliberations last autumn.

The stance of the International Labour Office (ILO) suggests that the legal issues of employment-like working styles can be divided into two types: disguised employment and dependent self-employment. Firstly, disguised employment refers to cases in which work is conducted under a service contract or other such civil agreement in order to ensure that the person conducting the work is not classed as a "worker" and therefore unable to receive the protection of labor laws or insurance ("labor laws, etc.") that they should be entitled to. In other words, it is an employment arrangement disguised as a civil law relationship by using a legal form other than a labor contract in order to evade the obligation to protect a worker. Secondly, dependent self-employment is used to describe cases in which persons are classed as self-employed—and thus do not benefit from the protection of labor laws, etc.—but are in some way subordinate to and dependent on the ordering party (referred to here as the "client") in the work arrangement and therefore lack protection to ensure appropriate remuneration and working conditions, as well as compensation for employment injury or other such social security.[4]

This paper draws on recent results from fact-finding surveys and the stances of the ILO and in various countries to investigate the fundamental approaches toward protection for persons in employment-like working styles. The following sections will define the types and employment situations of persons in employment-like working styles, and use this as a basis to address the problems of disguised employment and dependent self-employment and the respective approaches to these issues—namely, considering potential means of preventing employers from evading the application of labor laws, etc., by using legal forms other than labor contracts, and addressing the necessity of protection, its scope of eligibility, related policies, and contents of protection.

## II. Types of persons in employment-like working styles and their working situations

### 1. Definitions and types

There is no clear definition of persons in employment-like working styles. While there are various terms in Japan for such working styles—such as "freelance workers," "independent contractor" (*kojin ukeoi jūjisha*) or "outsourcing workers" (*itakugata shūgyōsha*; lit. persons who are entrusted with work by a client)—these generally all refer to persons who work mainly personally, conducting tasks that have been entrusted to them by a company for remuneration, under contracts for the provision of services ("outsourcing contracts") that are not employment or labor contracts ("labor contracts, etc.").[5] That is to say, the fundamental factors that constitute an employment-like working style are that work is conducted (i) under a contract other than a labor contract, etc., (ii) on request from a company, (iii) for remuneration, and (iv) mainly personally. This definition therefore excludes retailers who directly provide consumers with products or services, business operators who employ multiple full-time workers, and volunteers who provide services without remuneration.

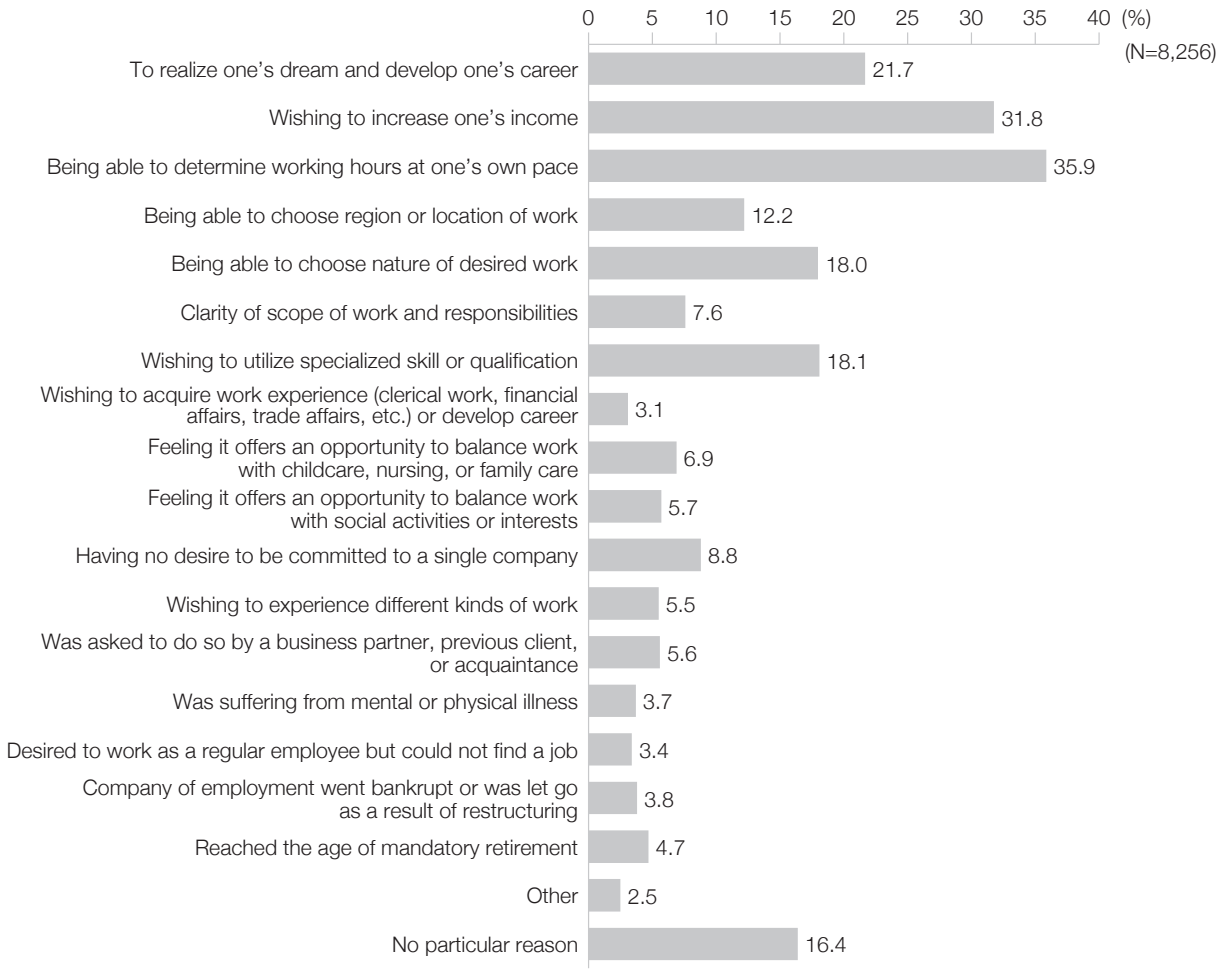
While the foremost characteristic of employment-like working styles is their diversity, it is possible to divide them into several categories based on their respective features. In my related research, I have adopted the following broad classifications: (i) "type of specialist," covering persons who have a certain amount of freedom in how to pursue their tasks, such as carpenters and other such persons engaged in construction-related work, or actors, musicians and other such performers, (ii) "type of semi-self-employment," covering persons who bear the costs for the equipment or other such expenses necessary in pursuing their work, such as drivers using their own vehicles or bread producers and sellers, (iii) "type of outsourcing work," covering persons who have a certain amount of freedom to determine when or where they work but receive instructions on work content from the client, such as NHK subscription fee collectors or those who engage in product maintenance, (iv) "type of franchising," covering franchisees such as convenience storeowners, i.e. franchised retail store owner (v) "non-employment type telework," covering persons who work at home and other such freelance workers such as media-related writers or journalists, and (iv) "type of crowd work," covering persons working for themselves who secure their work through online platforms.[6] This is by no means an exhaustive list of the types of employment-like working styles, and these categories may also encompass persons who can be classed as employees in light of their actual working situation.

A number of surveys have been conducted on the employment situations of persons in employment-like working styles.[7] Recent examples include the "Survey on the Actual Conditions of Outsourcing Workers," (the "Survey of Outsourcing Workers") conducted in December 2015 by a research team in which I was involved,[8] JTUC-Rengo and RENGO-RIALS joint survey conducted in May 2017, entitled "The Diversification of Working Styles and Legal Protection: A Report on Survey Research on the Current Situation and Challenges of 'Ambiguous Employment Relations'" (the "RENGO-RIALS Report"),[9] and the "Survey on the Employment Situation and Attitudes of Independent Self-Employed Workers (Advance Report)," an online survey conducted in December 2017 by the Japan Institute for Labour Policy and Training (the "JILPT survey").[10] Reports from research groups based on recent fact-finding surveys also include the Ministry of Economy, Trade and Industry's "Report of the Working Group on 'New Working Styles Not Bound by Employment Contracts'" (2017) and the Japan Fair Trade Commission's "Report of the Study Group on Human Resources and Competition Policy" (2018).

### 2. Employment situations and issues

As a detailed description would be too lengthy, this section focuses on a basic outline of the employment situations of persons in employment-like working styles.

While various surveys have been conducted on the numbers of persons in employment-like working styles, there are significant disparities in the estimated figures, due to differences in the way in which survey subjects are defined. According to the Interim Report of the MHLW's Meeting on Points of Controversy with

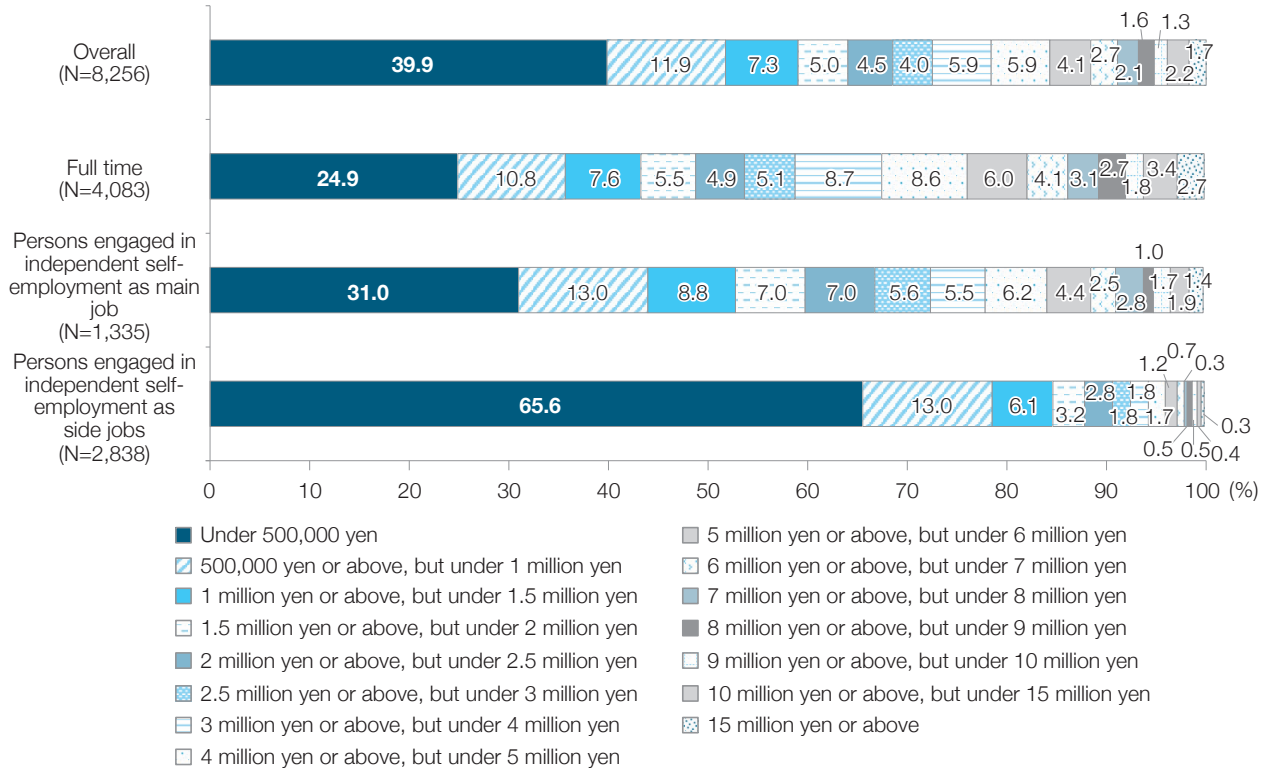



*Source*: Prepared by the Employment Environment and Equal Employment Bureau of MHLW, based on JILPT, "Survey on the Employment Situation and Attitudes of Independent Self-Employed Workers 2017 (Online Survey)".

Figure 1. Reason for becoming an independent self-employed worker (multiple responses)

regard to Employment-like Working Styles, the overall number of "persons who work mainly personally to provide services requested by a client and receive remuneration for those services" is estimated approximately 2.28 million persons (of whom around 1.69 million persons do so as their main occupation, and around 590,000 persons do so as a side job). It is also estimated that of those around 2.28 million persons, around 1.7 million persons "mainly work with enterprises as their direct clients" (with around 1.3 million persons doing so as their main occupation, and around 400,000 persons as a side job, Interim Report, p.3). These 1.7 million persons are essentially the type of workers addressed in this paper.

Looking at the reasons why persons choose employment-like working styles, in the JILPT survey (2017) the main commonly selected reasons were "being able to determine working hours at one's own pace" (35.9%), "wishing to increase one's income" (31.8%) and "to realize one's dream and develop one's career" (21.7%) (Figure 1). In the "Survey of Outsourcing Workers," the most commonly selected responses were "being able to utilize one's experience and skills" (48.0%), "having the freedom to determine one's working hours" (42.9%) and "being able to engage in a worthwhile job" (36.2%). At the same time, 13.4% selected "because there were no other jobs available to me." While there are slight differences by industry, age, or whether a main job or side job, such results show that persons generally select such working styles due to the




*Source*: Prepared by the Employment Environment and Equal Employment Bureau of MHLW, based on JILPT, "Survey on the Employment Situation and Attitudes of Independent Self-Employed Workers 2017 (Online Survey)".

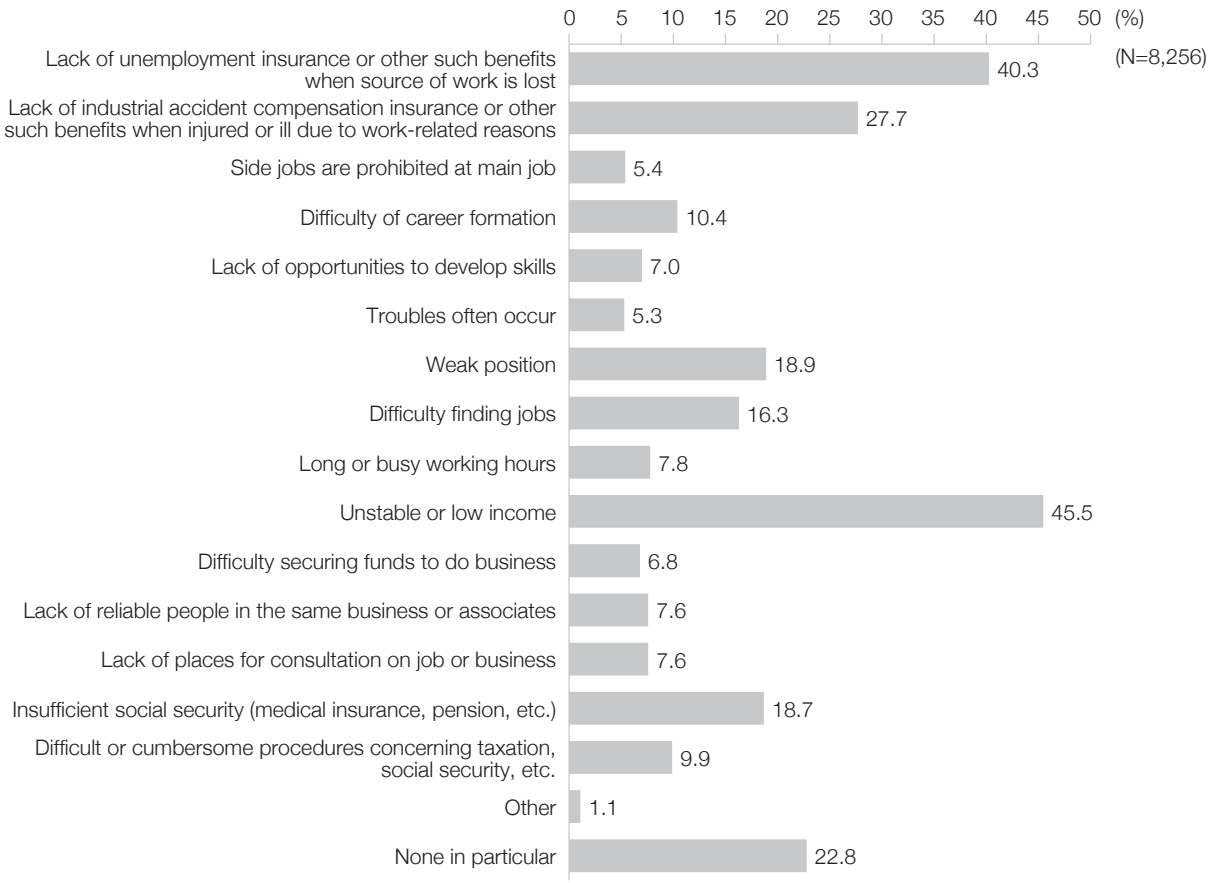
Figure 2. Total payment received for work in independent self-employment (at face value)

freedom to manage their own time or engage in work that they find worthwhile, but there are also those who do so due to a desire to raise their income or because they are unable to find work otherwise.

The JILPT survey (2017) results on the number of clients per annum show that the greatest percentage of respondents work with "one company" per year (42.9%), followed by those who work with "two companies" (16.7%). The "Survey of Outsourcing Workers" also shows a high percentage (31%) of persons who work with one client. At the same time, 21.2% of respondents work with 10 clients or more, suggesting that a division can be drawn between those who work exclusively with one company and those who work with multiple clients.

Looking at the amounts of remuneration received, in the JILPT survey (2017) the most commonly selected response was "under 500,000 yen" (39.9%), with a particularly high percentage (65.6%) of those who pursue such work as a side job ("persons engaged in independent self-employment as a side job") selecting that response. For those who engage in such work full time, the percentage of those who selected "under 500,000 yen" is low (24.9%) in contrast with the overall percentage, while the percentages for "3 million yen or above, but under 4 million yen" to "15 million yen or above" are comparatively high (Figure 2). This indicates another division—namely, between those receiving low and those receiving high amounts of remuneration.

The issues involved in continuing such working styles, in order of the percentages of JILPT survey (2017) respondents who selected them are: "unstable or low income" (45.5%), "lack of unemployment insurance or other such benefits when source of work is lost" (40.3%), and "lack of industrial accident compensation insurance or other such benefits when injured or ill due to work-related reasons" (27.7%). In the "Survey of Outsourcing Workers," the greatest percentage of the outsourcing workers surveyed were concerned about "securing a stable supply of work" (34.8%), followed by "the low levels of remuneration" (30.1%) and "work




*Source*: Prepared by the Employment Environment and Equal Employment Bureau of MHLW, based on JILPT, "Survey on the Employment Situation and Attitudes of Independent Self-Employed Workers 2017 (Online Survey)".

Figure 3. Problems faced in continuing as an independent self-employed worker (multiple responses)

being stopped or reduced on the unilateral decision of the client" (13.5%) (Figure 3).

Looking at results regarding problems experienced in work, in the JILPT survey (2017), the most commonly selected response was "no problems" (50.1%), and of the problems experienced, the most commonly selected was "disputes regarding work content and scope" (14.6%), followed by "unilateral changes to the specifications" (9.3%) and "unilateral changes to the work period or deadline" (7.8%), in that order. Similarly, the most commonly selected response in the "Survey of Outsourcing Workers" was "there has been no problems" (67.6%), while of the experienced problems, the most commonly selected was "amount of remuneration" (12.3%) followed by "work being stopped or reduced on the unilateral decision of the client" (10.4%).

Drawing on data from the JILPT survey (2017) and an MHLW interview survey of relevant parties and organizations (2018), the Employment-Like Working Styles Meeting Report lists the following areas in which protection should be considered: (i) clarifying the contractual conditions of outsourcing arrangements, (ii) determining and changing contract content, defining the rules on the termination of contracts, and guaranteeing the implementation of contracts, (iii) optimizing remuneration amounts, (iv) improving skills and developing careers, (v) combining work with childbirth, raising children, caring for relatives and other such commitments; long-term family care (vi) preventing sexual or other such harassment from clients, (vii) providing support in the event that a person suffers a work-related injury or illness, loses their source of work, or other such cases, (viii) offering consultation services and other such assistance in the case of disputes, and

(ix) other support such as matching people in employment-like working styles with clients, or social security.

## III. Disguised employment

### 1. Misclassification

The classification of work relationships is the "central, defining operation of any system of labor law." This is because labor laws cannot be applied unless it has been clarified whether the person in question is classed as a worker. In the majority of legal systems around the world, there is a "binary divide" between employment and self-employment, and "employment" is the fundamental factors required for the application of labor laws and regulations. Defining employment and classifying work relationships as "employment relationships" is therefore a key part of protecting workers.[11]

The ILO states that disguised employment "lends an appearance that is different from the underlying reality, with the intention of nullifying or attenuating the protection afforded by law." This may involve client companies concealing their identity as "employers" by hiring workers through a third party or by engaging service providers under civil contracts instead of labor contracts, and at the same time directing and monitoring service providers on their tasks in such a way that is incompatible with said service providers' independence as self-employed people. In such cases, the service providers will be mistakenly classified as independent self-employed workers, even though they are, in fact, in employment relationships.[12]

Classifying what is essentially an employment relationship as a different legal form is known as "misclassification." Disguised employment is characterized by the way in which employers intentionally misclassify an employment relationship in order to evade the obligation to protect workers. This brings us to the question of how we can prevent such employers from avoiding the application of labor laws by passing employment relationships off as civil contracts or other such forms—in other words, how such misclassifications can be corrected.

Misclassification is typically corrected by applying the labor laws, etc. that have been evaded due to an employment relationship being disguised using a civil or other such contract. Namely, correcting a misclassification means switching an unduly adopted legal form to the proper one against the will of the party that adopted it, in order to ensure that the laws that have been evaded by disguising the employment relationship are applied—a concept referred to as "coercion of legal form."[13] As courts in Japan seek to objectively determine whether a person is classed as a worker ("worker status") in light of how the contract they are under is implemented in practice—regardless of what types of contracts has been adopted by the parties involved, it can be suggested that the legal process of correcting misclassifications is conventionally conducted by the courts.[14]

Proving worker status in a judicial process is the task of the worker (plaintiff) and the public organization that holds jurisdiction over the application of the labor laws, etc. However, in the event of a gray area where a number of factors indicate the characteristics of both a worker and an independent self-employed person, proving worker status or the existence of a labor contract is often difficult. It is important to note that there are two differing stances toward solving this problem. The first is focused on expanding the concept of worker status—namely, it is suggested that the scope of eligibility for protection should be extended by reviewing the concept of what constitutes a worker as eligible for the application of labor laws ("the concept of worker"), given that said concept can be too narrow when the actual economic situation of the person engaged in work is considered. Secondly, there is the stance that emphasizes preventing misclassification, by establishing a system for workers in disguised contract relationships to easily and promptly prove their worker status. These stances address problems of different dimensions. The essential problem of preventing misclassification is addressed by the latter.

## 2. A system of preventing misclassification

In working relationships in which the parties involved have differing levels of bargaining power, where a client selects a contract for the provision of services other than a labor contract despite the fact that there are no reasonable grounds for doing so according to the objectives of labor laws, etc., said choice of contract form is an abuse of the legal form by the client. In such cases, the client must be treated as a person who has formed a labor contract, regardless of the form of the original contract.[15]

The ILO addressed such a problem with the proposal of a system of preventing misclassification, set out in its Employment Relationship Recommendation (No.198) of 2006. This states that judgments on the interpretation of a contract should be guided by facts relating to the actual performance of the contracted work, as opposed to what is written in the "contract"—a principle known as the "primacy of facts."

As a policy approach helpful in preventing misclassification, the recommendation also proposes "providing for a legal presumption that an employment relationship exists where one or more relevant indicators is present." While the indicators that may trigger such a presumption may differ from country to country, the ILO notes that a considerable number of countries adopt such a legal instrument.[16]

In Japan, Article 9 of the Labor Standards Law defines "worker" in employment relationships as one who is employed at an enterprise or office and receives wages therefrom, without regard to the kind of occupation. And Article 3 of the Labor Union Act defines "worker" in collective labor relationships as those persons who live on their wages, salaries, or other equivalent income, regardless of the kind of occupation. Both each define the "workers" to whom they apply, and workers in employment relationships are interpreted as synonymous with that definition under the stipulations of certain labor laws and regulations (such as the Industrial Safety and Health Act, Article 2, and the Minimum Wage Act, Article 2). The courts also generally adopt this interpretation (The *Yokohama Minami Rokishocho* (*Asahi Shigyo Inc*.) case, Supreme Court [Nov. 28, 1996], 1589 *Hanji* 136).[17] Moreover, judicial precedents and labor administration treat "subordination to and dependence on an employer" (*shiyō jūzoku kankei*; referred to here as "subordination to an employer") in employment relationship as the essential condition for fulfilling the concept of worker, and determine worker status on the basis of two fundamental requirements[18]: whether the person carries out work according to the instructions and under the control of employer and whether the person receives remuneration for their labor. More specifically, the key factors taken into consideration are (i) the freedom to accept or refuse a work request, (ii) the extent to which orders are given regarding the content of the work and how it is carried out, (iii) whether the work is carried out within specific working hours or at a workplace specified by an employer, (iv) whether the service provider can be freely replaced with another person, and (v) the methods of calculating and paying remuneration. Additionally, the following factors are referred to in reinforcing decisions: (vi) whether the person is qualified as business trader in terms of equipment or tools for the work, and whether they pay expenses, (vii) exclusivity with a certain client, and (viii) whether work rules or fringe benefit are, or is applied to. A combination of a number of factors is therefore taken into consideration.[19]

However, while such judgment criteria have been established, differences are permitted from case to case in their application and the levels of importance attached among the various factors for consideration depending on the nature of the work in question or the essence or objectives of the applicable protection norms. It is therefore considerably difficult to accurately predict a court judgment.[20]

Given the present circumstances, preventing misclassifications requires clarifying the scope of worker status and taking steps to alleviate the burden of proof on workers (plaintiff) or administrative organizations. A potential approach to doing so would be to introduce a regulation listing the factors considered to determine worker status and prescribing that a person is presumed to be a worker if they fulfill a number of those factors, as proposed in Recommendation No.198.

However, it is not easy to determine which factors should be listed as the various aspects upon which presumption of worker status should be based. There is a particular risk that, if listed as a basis for

presumption of worker status, certain factors (such as integration into the organization of the client enterprise) may expand the scope of the worker concept rather than clarifying it, and distinguishing such factors would be problematic.

## IV. Dependent self-employment

### 1. Reexamining the traditional concept of worker

The labor laws of Japan divide persons who provide services into two types: workers and the self-employed. Labor laws and labor insurance (industrial accident compensation insurance and employment insurance) are essentially not applied to those who are classified as self-employed.

The concepts of workers and labor contracts have been developed in the process of various complex developments since the Industrial Revolution. From the perspective of legal classification, workers are associated with the concept of subordination to and dependence on a company. Each country's concepts of workers and labor contracts are based on the premise of a distinctive vertical power relationship between an employer and their employee, such as the concept of *persönliche Abhängigkeit* ("personal dependency") in German law.

In Japan, it is also the case that—while there are persons engaged in work in home-based industry under the putting-out system and other such contractor-like employment—"subordination to an employer," centered on the way in which an employer directs or controls the person, is a fundamental requirement of the concept of worker.[21] The concept of worker thereby came to represent those persons who receive comprehensive social protection covering various aspects such as working hours, dismissal, or compensation in the event of industrial accidents.[22]

However, along with the significant changes that have occurred in corporate organizations over the past several decades, there has been a rise in employment practices that have unsettled the concept of an employment relationship as a relationship between two parties and weakened the efficacy of the criteria for determining worker status that is based on a strict hierarchical control. Such changes have prompted awareness of the narrow nature of the traditional concept of worker based on subordination to an employer.[23]

As employment in contemporary society becomes ever more diverse, it is important to ensure that the concept of worker—namely, the concept defining who should be protected as a worker—is a sufficiently comprehensive and up-to-date notion adapted to the current changes in the world of work.[24]

Leaving aside cases of collective labor relations, courts in Japan determine worker status on the basis of the combination of a range of factors according to the distinctive characteristics of each case, while at the same time essentially looking for the existence of a relationship by which the person is directed or controlled. This approach aims to allow for a flexible interpretation of worker status. However, this emphasis on the existence of a direction and control relationship, is not sufficiently comprehensive given the recent changes in employment practices.

### 2. The necessity of protection

The ILO report on non-standard employment (2016) lists disguised employment and dependent self-employment as a category of "non-standard employment" alongside temporary employment, part-time employment, and temporary agency work and other such multi-party employment relationships and states that such employment does not constitute decent work—that is, it lacks the qualities of employment in which a person can feel fulfilled and be guaranteed their human rights.

So, why is dependent self-employment classed as a type of non-standard employment, though from a legal perspective, it cannot be treated in the same way as forms that are employment relationships? The ILO's report determines that legal policy measures are necessary due to several factors—namely, that disguised employment and dependent self-employment are covered under specific regulations and are eligible for partial

protection in a number of countries and regions, that these two working styles have emerged as the result of new business practices over the past decades and companies selectively use self-employment alongside other types of non-standard employment as a means of shifting risk, and that the self-employed continue to be in some way dependent on companies.[25]

While the self-employed are expected to play a key role amid the changes in corporate organizations, the diversification of employment types, and the progress of the digital economy, in Japan the self-employed are essentially excluded from protection under labor laws or labor insurance. This is because even those self-employed who have similar financial circumstances to those of a worker were not considered to be workers on the basis that they "operate an independent business."[26]

The fact that a considerable number of self-employed persons have some form of subordination to and dependence on their client serves as a basis for considering the necessity of protection for persons in employment-like working styles. Excluding the self-employed from legal protection based on the dichotomy between workers and the self-employed means operating on the questionable premise that the self-employed always provide services at their own risk and on their own account.

Murakami (2018) uses data from the "Survey of Outsourcing Workers" to categorize those workers according to their subordination to and dependence on the ordering party in a work arrangement. Drawing on this analysis, he notes differences between the "high-level dependence group" and the "low-level dependence group," in terms of work type, means of acquiring work, monthly income acquired through outsourced work, the existence of written working conditions, and levels of satisfaction.[27]

In cases where a person receives work from a certain client exclusively or on an ongoing basis, the resulting difference in bargaining power may prevent him or her from securing appropriate contract conditions or reasonable remuneration, such that the company's risk is unduly transferred to said dependent self-employed person. If such persons do not receive the same level of protection enjoyed by regular workers, and there is no system of social security to distribute the social risk appropriately, individuals will not feel motivated to choose such autonomous ways of working.

In terms of the potential impacts on the labor market, this impedes fair competition between companies who employ workers and therefore cover the business operator (employer)'s share of social insurance and those who avoid doing so by utilizing self-employed service providers. If such an imbalance is left unaddressed, "bad money drives out good"—namely, good companies may be pushed out of the market by unfair competition.

## 3. Eligibility for protection

In considering the legal issues, it is necessary to address those self-employed who have a certain level of subordination to and dependence on their ordering parties, as opposed to seeking one approach to apply across the board. That is, eligibility for protection should be limited to those persons in employment-like working styles who are to some extent subordinate to and dependent on their clients. Let us tentatively refer to such persons with quasi-subordinate status as "worker-like persons."

While opinion is divided as to specifically which kinds of self-employed should be eligible for protection, the Interim Report published in June, 2019 defines those eligible for protection as "persons who are commissioned by clients to provide services, mainly as individuals, and receive remuneration for the work." However, the Interim Report also states that the specific scope of eligibility for protection should be defined for each type of protection with consideration also given to economic dependence and other such aspects.

So, what kinds of criteria need to be established in order to determine specifically whether a person can be classed as a "worker-like person"? While there may be no clear-cut answer to this question, possible criteria would include exclusivity with a certain client, continuity of business with a certain client, and the proportion that the remuneration from a certain client accounts for within the worker-like person's total income.

However, if decisions regarding whether a self-employed is a worker-like person are to be made on the

basis of a combination of several factors, decisions will differ depending on the various factors the judge assigns the greatest importance, making judgements less foreseeable. This leaves us with the same problem as that faced in determining worker status—the lack of clarity regarding eligibility for protection. In order to prevent this, it is important to eradicate ambiguity as far as possible when defining who is eligible and establish a comprehensive definition that allows for the response to changes in the employment environment.

## 4. The state of protection policy

The state of and approaches toward protection in various countries can be broadly divided into three types: (i) redefining (expanding) the concept of worker, (ii) maintaining a single concept of "worker" but at the same time partially expanding protection under labor laws, etc. to certain self-employed persons (defining a third category, etc.), and (iii) using a definition other than that of the worker concept to define the scope of people to whom the protection of certain laws or regulations should be applied.[28]

The Interim Report (2019, 11) also states that "there are currently three main approaches for considering the state of protection under labor policy for persons who are not recognized as workers." These approaches, which are thought to have been developed in light of the trends in those adopted in other countries, are mentioned in the report as follows: (i) expanding the scope of protected worker status, (ii) defining self-employed persons in need of protection as occupying an intermediate category between workers and the self-employed, and partially applying labor-related laws to cover them, and (iii) introducing necessary measures for self-employed persons who require a certain level of protection, considering the contents of protections, rather than expanding the notion of worker status.

The first option—that is, expanding the concept of "worker"—can be pursued both through the interpretations of the courts and through legislation to redefine the concept. Examples from other countries of the concept being expanded through interpretation include the broad interpretation of workers adopted in the US by using an economic reality test when applying the Fair Labor Standards Act.[29] In Japan, the Supreme Court has adopted broader interpretations of the concept of worker under the Labor Union Act than that prescribed in the Labor Standards Law (the *INAX Maintenance* case, Supreme Court [Apr. 12, 2011] 2117 *Hanji* 139, and the *Victor Service Engineering* case, Supreme Court [Feb. 21, 2012] 66–3 *Minshu* 955). While the Supreme Court consider a combination of a number of factors when determining worker status under the Labor Union Act, it places particular emphasis on whether the client has incorporated the service provider into the structure of their enterprise as an essential part of their labor force, and whether the client has unilaterally determined the content of the contract.

Looking at the academic theories, there are innumerable arguments advocating the expansion of the concept of worker through interpretations,[30] but recently theories have also arisen to propose that the concept be redefined (expanded) through legislation. For instance, there is the theory that in place of adopting subordination to an employer as a judgment criteria, workers should be broadly interpreted as those persons who provide their labor to others for remuneration and are unable in practice to negotiate with the other party on an equal level, and that this should be clarified with legislation.[31] Alternatively, there is the theory that the worker concept as defined in the Labor Union Act should also be applied to employment relationships, and the concept of worker under Article 9 of the Labor Standards Law should be defined as "natural persons who are utilized as an essential part of the labor force for pursuing the operations of the other party and earn a livelihood by receiving income in return for said labor" and that that definition should be flexibly interpreted when applying aspects such as dismissal rules or minimum wage systems.[32]

The second approach—partially expanding protection to cover a third category—has already been adopted by a number of countries.[33] Examples of this include the notion of a "Worker"—worker whose notion is broader than employee—as defined in the UK,[34] the concept of *Arbeitnehmerähnliche Personen* ("employee-like persons") in Germany,[35] and the concept of "persons in special types of employment"[36] in South Korea. These each refer to an intermediate category between employees and the independent self-

employed—referred to here as "the third category"—and labor laws, etc. are partially extended to apply to said category. To be classed in the third category, the person generally has to be "economically dependent" on the client, but the specific definition does differ from country to country.

Practical examples of the third approach—adopting a definition other than the concept of worker for determining eligibility for protection—include the UK Equality Act of 2010 and the German Artists' Social Security Act (*Künstlersozialversicherungsgesetz*). The UK Equality Act, Section 83 (2), defines those eligible as persons who are "under a contract of employment, a contract of apprenticeship or a contract personally to do work." Persons who are engaged under a service contract are also eligible for said act to be applied provided that they are obliged to personally conduct their work or tasks.[37] The German Artists' Social Security Act is a social insurance system for artists and writers not under employment relationships, allowing such persons to enroll in pension insurance and health insurance schemes for employed people.

The three approaches are not mutually exclusive. Whether legislators adopt one or a combination of the approaches depends on the state of the law in the relevant country. It appears to be necessary for Japan, for the present, to give the self-employed requiring protection (worker-like persons) a different legal status to that of workers as it is presently defined, and on that basis to adopt some form of measures that involve partially expanding the application of labor laws, etc. in areas where protection is required, or, to develop legislation to expand the scope of eligibility for application of the Industrial Homework Act, because a homeworker has such a quasi-subordinate status as "worker-like persons." While this stance is close to that of introducing a third category, it seems advisable to define such a third category according to the essence and objectives of the laws and regulations being applied, rather than setting out a definition that is applied across the board, if a third category is to be introduced, its criteria need to be both clearly defined and comprehensive.[38]

That is not to entirely refute the first and third approaches noted above, but said approaches do seem to entail a number of issues to be considered. The first approach—expanding the concept of worker—is indeed a task that needs to be addressed as employment today becomes ever more diverse. And yet, given that the concept of worker is the fundamental concept of labor law, it is essential that any new concept be carefully developed with reference to the concepts adopted in other countries.

Looking at the specific issues, if, for instance—as suggested in some academic theories—emphasis is placed on economic dependence rather than subordination to an employer as the essential requirement for worker status, the concept of worker will take on a broader definition, leading to increasing ambiguity in the distinction between a worker and an independent self-employed person. Alternatively, if, as other theories propose, worker status is flexibly interpreted according to the content of protection, such as dismissal rules or a minimum wage system, the concept of worker will lose its consistency, in turn potentially resulting in confusion on the scope of eligibility or actual application of protection norms.

If the third approach is to be adopted, it needs to be treated as a policy for developing special laws to provide comprehensive protection of worker-like persons, rather than expanding each criteria of labor law, etc. For instance, in the case of steps to ensure the prevention of harassing behavior to service providers, this could entail creating a separate definition of the persons to whom such protection should apply other than that of a worker and enacting a special law on harassment prevention. While this approach is not entirely unadvisable, it is possible that the scope of eligibility of such special laws would stretch beyond worker-like persons, and in such an event it is necessary to carefully consider the objectives of and grounds for protection.

Moreover, as may be the case for crowd workers, who receive work through online platforms, it may be difficult not only to define worker status but also to determine what the employer is. This has also been a lively topic of academic debate in recent years.[39] In order to properly address the issues of work through online platforms as well as topics such as franchising, the author finds it necessary to conduct further survey research, and apply the results to clarify the issues.

## 5. The content of protection

In determining what kinds of protection worker-like persons require, it is necessary to address each type of protection individually. Legislators deciding the kind of protection required would need to consider comprehensively a number of factors, including the differences between the protection received by workers and that received by worker-like persons, whether such differences are based on reasonable grounds in light of the essence and objectives of the protection, what the parties involved need from the protection measures, and whether it is appropriate for the costs of protection to be borne. When doing so, it is also necessary to consider the possibility for the current system to be applied to worker-like persons. And when considering the specific content of protection measures reference should be made to not only the individual labor laws and social security laws, but also the Industrial Homework Act, the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors (the Subcontractors' Act), and the "Guidelines for the Proper Implementation of Self-Employed Type Teleworking."[40]

There is a wide range of areas for protection that need to be considered, but here we will focus on the following: (i) contracts for worker-like persons, including the conclusion, defining and changing of content, and termination of such contracts, (ii) guarantee of appropriate remuneration, (iii) working conditions, (iv) social security, etc., and (v) dispute resolution systems. Other areas such as collective labor relations, anti-harassment measures, support for combining work with childbirth, child-rearing and other such commitments, vocational skills development, and securing employment opportunities are also important but are too numerous to be addressed here.

(A) Contracts (concluding, defining and changing content, and termination)

Many outsourcing contracts do not include clear specifications on aspects such as the conclusions of the contract, the work content, amount of remuneration and other such particulars, or the conditions for changes to the contract. As a result, worker-like persons lack clarity regarding at what point their contractual obligations arise and to the extent of their obligations. The problem is that ambiguity regarding the timing at which the contract was concluded, or the work content on which tends to allow the client in its superior bargaining position to make unilateral decisions. It is therefore important to ensure the timing of contract conclusion and clearly defined contract content, in order to ensure that worker-like persons have contractual protection.[41]

Ensuring the creation of a written contract is an effective means of clarifying that a contract has been concluded and specifying its content. The Employment-Like Working Styles Meeting Report notes that in publishing and animation production industries there is no express contract in writing, thereby easily prompting issues such as disputes between the client and the person conducting the work regarding the amount of remuneration provided. Under the Subcontractors' Act—which is applied in the event that a certain amount of outsourcing transactions are made, the client's capital exceeds 10 million yen, and other such conditions are met—the client is obliged to provide the subcontractor undertaking the work with written specifications regarding items such as the details of work of the contract, the amount of subcontract proceeds (the payment to be made for the work by the subcontractor), and the date of payment. However, the Subcontractors' Act is only applied to a fraction of outsourcing contracts. In order to ensure that clear specifications are provided regarding the conclusion of contracts and their content, it is necessary to consider, based on the measures set out in the Subcontractors' Act, taking steps such as making it obligatory to clarify the particulars of the work for which subcontractors are sought and to specify and retain contract conditions in writing.

Allowing clients the authority to unilaterally terminate a contract not only compromises worker-like persons' livelihood stability but may also allow the other party superior bargaining power. The results of the JILPT survey (2017) also show that 13.6% of respondents selected "rules prohibiting the other party in a transaction from terminating a contract without reasonable grounds" as an area that they felt should be developed or improved in the future.

Japanese workers are protected under the restrictions on dismissal and the system of advance notice of dismissal under Articles 19 and 20 of the Labor Standards Act respectively and the regulations on dismissal under Articles 16 and 17 of the Labor Contracts Act. In contrast, in the case of outsourcing contracts, Article 641 of the Civil Code recognizes a client's right to cancel a contract at any time before the work has been completed provided damages are compensated, while Article 651, paragraph 1, of the Civil Code prescribes that a mandatory (party commissioning work) may cancel a contract at any time.

In practice, outsourcing contracts generally include provisions by which the contract can be cancelled with immediate effect at any time on the grounds of a breach of contract (the "immediate cancellation system") and provisions by which the contract may be cancelled on any grounds provided a certain period of notice is given (the "system of cancellation at will"). There are various grounds for termination due to breach of a contract, ranging from those that are simply prescribed to those that are set out in considerable detail.[42] These include provisions similar to work rules prohibiting damage to the outsourcing party's reputation or credibility, and there have been cases in which contracts have been cancelled on the basis of trivial violations (The *NHK Chiba Broadcasting Station* case, Tokyo High Court [Jun. 27, 2006] 926 *Rohan* 64).

Given clients' superior position on cancelling contracts, legislators need to consider limiting the grounds for immediate cancellation of a contract to reasons related to the nature of the work, and ensuring that contracts include provisions for guaranteeing a sufficient period of notice of cancellation and the indemnification of damages in the event of a cancellation at will.

(B) Guarantee of appropriate remuneration

Ensuring appropriate remuneration involves three issues: (i) seeking remuneration for periods in which work is not conducted, (ii) restrictions against significantly low amounts of remuneration, and (iii) guaranteeing the payment of remuneration. Here we will focus on the second and third.

Results of the JILPT survey (2017) and the interview survey conducted by the MHLW show that low levels of remunerations are among the top concerns of worker-like persons. While for workers, wages that are below the local minimum wage are invalid, there is no such protection for the self-employed. The RENGO-RIALS Report (2017) demands the introduction of a minimum remuneration system, with its questionnaire survey showing that 37% of persons who exclusively engage in crowd work believe in the necessity of such a system.[43] Some academic theories posit that establishing such a minimum remuneration system is necessary to guarantee the survival of outsourcing workers as well as to ensure fair competition between companies.[44]

However, establishing a system for worker-like persons that is equivalent to the minimum wage system is not easy in practice. This is because while the amounts of minimum wages are determined in time units, in many cases the amounts of remuneration for worker-like persons are decided in accordance with total output. And even if remuneration is determined in time units, in many cases it will be unclear as to what portion of the remuneration serves as the remuneration for the services, because the remuneration for the management is typically included in the remuneration in general. The Industrial Homework Act prescribes a system for minimum remunerations for labor, but such a system is not easy to practically apply. Similarly, the RENGO-RIALS Report proposes frameworks that encourage crowdsourcing enterprises and associations of such enterprises to voluntarily determine minimum remuneration amounts, as opposed to approaches based on strict regulations such as a minimum wage system.[45]

Given the diversity of work that worker-like persons engage in and the considerable differences in work performance from worker to worker, it is also important to include the option of introducing measures that encourage the parties involved to determine between themselves remuneration amounts that are appropriate in light of factors such as the market prices for similar work by the self-employed, the level of difficulty of the work, how much time has been given for the work to be completed, and the level of ability of the person engaging in the work.

Ensuring the effectiveness of claims for wages is covered in the Labor Standards Act, Article 24, which

prescribes general principles on payment in currency, regular payment, monthly payment, full payment, and direct payment of wages, while the Act on Security of Wage Payment establishes a system for reimbursing wages in the event that an employer becomes unable to pay them due to corporate bankruptcy or other such reasons. Excluding cases where the Subcontractors' Act is applied, there are no guarantees for the payment of remuneration for the self-employed. And yet there seems to be no reasonable grounds for separate treatment of worker-like persons—who depend on remunerations for their livelihood—with respect to ensuring the effectiveness of claims for remuneration. While the content of protection differs according to the provisions of the subcontracting or outsourcing contracts, given that the majority of problems are related to establishing the date of payment after the work has been carried out, it may be advisable to introduce a system for ensuring the payment of remunerations within a certain period, regardless of whether the content of the work has been checked, with reference to measures such as those on delays in payments as prescribed in the Subcontractors' Act.

(C) Working conditions

Issues regarding working conditions include: (i) regulating working hours, (ii) ensuring safety and health during work, and (iii) prohibiting the predetermination of compensation for damages. Here we will address just the first and second issues.

The results of the JILPT survey (2017) demonstrate that a high percentage of respondents selected "the freedom to choose how long, when, and where to work, etc." as a reason for choosing an employment-like working style. There does not appear to be a significant demand for the regulation of working hours among worker-like persons. The percentage of respondents who selected "being busy, with long working hours" as one of the problems faced in engaging in such work was relatively low (7.8%). However, it is possible that such persons may work long hours depending on where they work and what industry they work in. As long working hours may arise—particularly in the case of persons permanently "stationed" (conducting their work) at the premises of the client or due to the nature of certain types of work such as transportation services—it is necessary to refer to the Industrial Homework Act to consider the possibility of introducing measures to curb long working hours in such cases.

In examples from other countries, the application of industrial health and safety laws is not necessarily limited to workers. For instance, in the UK, the Health and Safety at Work etc. Act 1974, Section 3, prescribes that an employer is obliged to "conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that *persons not in his employment who may be affected thereby* are not thereby exposed to risks to their health or safety." (Italics added)

In Japan, the Industrial Safety and Health Act limits the scope of eligibility for its protection to workers, and prescribes that where multiple levels of subcontracting are involved in construction or other industries, the party that ordered the earliest contract shall be obliged to take health and safety measures as the "principal employer" (*motokata jigyōsha*). However, this is a provision intended to protect the workers employed by the relevant subcontractors. There are no reasonable grounds for excluding worker-like persons when pursuing the introduction of measures to prevent danger or health hazards from equipment, machines, or other such items used in work.

Judicial precedents have also established the legal theory that the "prime contractor" (*motouke kigyō*) bears the obligation to consider the safety of the subcontractors' workers (Supreme Court [Nov. 8, 1990] 1370 *Hanji* 52). This theory that the prime contractor is obliged to consider the safety of subcontractor workers is based on the fact that, in practice, prime contractors generally direct and control the subcontractor workers, such that in effect they are receiving the provision of labor from said workers. And yet this does not mean that prime contractors bear the obligation to consider the safety of worker-like persons. It is therefore necessary to draw reference from the examples of other countries, and consider partially applying the Industrial Safety and Health Act to worker-like persons.

(D) Social security, etc.

There are a number of discrepancies between the treatment of workers and that of the self-employed in the current systems regarding injury or illness (employment injury and personal injury or illness), unemployment, pregnancy and childbirth, child-rearing and family care, and life in old age. For example, the self-employed are ineligible for industrial accident compensation insurance benefits for work-related injuries or illnesses and are only eligible for a "special enrollment insurance system," in which person in work enroll voluntary and pay the premiums, in industrial accident insurance as an independent contractor (*hitori oyakata*) or other such self-employed business operator. While the self-employed are also obliged to enroll in the national health insurance and national pension schemes under Japan's concept of "the universal health and pension," these scheme have their disadvantages in comparison with the pension and health insurance schemes in which workers are enrolled. For instance, when a worker takes leave of absence due to a non-work related injury or illness (known as "personal sick, sick leave"), they are able to receive an "injury and illness benefit (*shobyou teatekin*)" to support their livelihood during their leave, and while in contrast, there is no such system for the self-employed who are under the national health insurance system.

While those workers who are eligible receive unemployment benefits when they are put out of work, there are no unemployment benefits for self-employed who have lost their source of work. The only support available in such cases are the public mutual aid systems, such as the Small Enterprise Mutual Relief System. The self-employed are also unable to receive employment insurance allowances to support their livelihood during periods of child-rearing or family care leave, as are available to workers.[46]

As we have seen, there are four key tasks to be addressed: (i) compensation for work-related injury or illness, (ii) injury and illness benefit for leave due to non-work related illness, (iii) income security in the event of loss of source of work, and (iv) income security during child-rearing or family care leave.

There are no clear figures on the rate of injury or illness among persons in employment-like working styles, but there are a considerable number of judicial precedents of persons working under subcontracting, outsourcing or other such agreements claiming industrial accident insurance benefits (the *Yokohama Minami Rokishocho* (*Asahi Shigyo Inc*.) case, Supreme Court [Nov. 28, 1996] 1589 *Hanji* 136, and the *Fujisawa Rokishocho* (injury of a carpenter) case, Supreme Court [June 28, 2007] 1979 *Hanji* 158). Questionnaire survey results also show a comparatively large percentage (27.7%) of persons who selected "there is no industrial accident compensation insurance in the event of work-related injury or illness" as a problem faced in pursuing work (JILPT survey 2017). Interest in compensation for industrial accidents is particularly high among persons engaged as performers, or in transportation services or construction work. In September 2009, the Japan Council of Performers Rights & Performing Arts Organizations (*Geidankyo*), an association representing performers' organizations and their members, issued a request to the national government for the establishment of an industrial accident compensation system for performers.

Looking at examples from other countries, in France a law was enacted in 2016 to enable industrial accident compensation for crowd workers, by obliging a platform to bear the costs of industrial accident insurance premiums in the event that a worker's remuneration received from said platform exceeds a certain percentage of their total income.[47] South Korea's Industrial Accident Compensation Insurance Act also enforces the application of industrial accident compensation insurance on clients who utilize "persons in special types of employment."[48]

This trend seems to indicate that Japan also needs to provide some form of compensation for work-related injury or illness. So, what kind of specific measures are required? The predominant academic theory advocates the expansion of the current special enrollment insurance system to include persons in employment-like working styles in the scope of eligibility.[49] In this case, there are several tasks to address, such as determining the amounts of insurance premiums and content of benefits for persons in employment-like working styles, and the establishment of a special enrollment organization, because those who wish to enroll in this insurance must belong to a special organization. An opposing theory suggests obliging clients to enroll in industrial

accident compensation insurance, alongside establishing an independent industrial accident compensation system under which clients must cover a portion of the insurance premiums.[50]

The risk of becoming out of work is not only an issue that needs to be addressed for workers. Even if self-employed persons plan for blank periods in their work schedule as part of their business activities, a considerable number of them immediately face difficulties in their daily livelihoods if they do not receive remuneration. In such cases, self-employed persons who are out of work may accept extremely low paid work. As noted above, as much as 40.3% of the JILPT survey (2017) respondents selected the "lack of unemployment benefit or other such benefits when source of work is lost" as a problem faced in pursuing work. This shows a considerable demand for measures to provide income security for worker-like persons who are out of work.

At the same time, the stance on security against unemployment risks for the self-employed is significantly divided, even outside of Japan. From a theoretical perspective, there is the issue of whether it is appropriate to handle the unemployment of the self-employed on the same basis as that of workers. Expanding the scope of eligibility of the employment insurance system, for instance, prompts a number of questions, such as whether enrollment should be voluntary or mandatory, or whether the cost of premiums should be borne entirely by the insured person or partially covered by the outsourcing party.

(E) Dispute resolution systems

The Interim Report states that dispute resolution support needs to be considered alongside measures to clarify contract conditions and other such steps to ensure the prior prevention of disputes, and that precedence needs to be given to pursuing the possibility of an effective dispute resolution system.

In addition to dispute resolutions by the courts, workers are able—and do in a number of cases— to turn to procedures for simplified and expedited dispute resolution such as the labor tribunal system conducted by the courts, the systems for consultation and mediation regarding individual disputes provided by their Prefectural Labor Bureau, or the individual dispute resolution system run by the Labor Relations Commission. In contrast, for the self-employed, the systems other than dispute resolution by the courts are highly limited. This difference is significant, and it is necessary to consider legislative solutions and other such measures to address it.

## V. Conclusion

While employment-like working styles may appear to be synonymous with self-employment, and it is therefore argued that persons in such working styles should be covered under conventional economic law (competition law, antitrust law, or antimonopoly law) and other such regulations, persons in such working styles may in practice be pursuing similar ways of work to those of employed workers. It is necessary to investigate the development of legal and policy protection to ensure that such persons do not face unreasonable disadvantages in comparison with employed workers. In doing so, it is important to discuss the approaches that should be taken toward eligibility for protection, the state of protection policies, and the content of protection, in order to help persons who engage in such working styles to feel safe and fulfilled in their work and potentially play a role in boosting the national economy.

This paper narrowed its focus to the most fundamental aspects in investigating the legal policy issues, and there are a number of topics that remain to be addressed. One of these is the potential measures for crowd work and other such work through online platforms. As briefly noted, this entails the question of which party—the client or the platform—should be seen as the employer, among a number of other issues to address. It will be important to explore such topics in the future in the light of data from a detailed survey of the actual situation.

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**Notes**

1. "Future of Work 2035: For Everyone to Shine" Panel, Ministry of Health, Labour and Welfare, *"Future of Work 2035: For Everyone to Shine" Report* (Tokyo: 2017), 9, https://www.mhlw.go.jp/file/06-Seisakujouhou-12600000-Seisakutoukatsukan/0000152705.pdf.
2. The "worker" here is the translation of "*Rodo-sha*" who is employed at a business or office and receives wages therefrom, regardless of the type of occupation as defined by the Article 9 of the Labor Standards Act. Since the translation by the Ministry of Justice uses the word "worker" for "*rodo-sha*," this article follows the official translation. As many academics use the word "employee" for "*rodo-sha*," "worker" here is a synonym for employee. The "self-employed" is an independent person who is not deemed a worker (employee). Homeworkers are self-employed, but basically protected by the special legislation called the Industrial Homework Act.
3. Koichi Kamata, *Keiyaku rodo no kenkyu: Auto soshingu no rodo mondai* [Study on contracted work: Labor issues of outsourcing] (Tokyo: Taga Shuppan, 2001), 3–7; Yoichi Shimada, "Koyo ruiji no romu kyokyu keiyaku to rodo ho ni kansuru oboegaki" [A memorandum on employment-like labor supply contracts and labor law], in *Shin jidai no rodo keiyakuho riron: Shimoi Takashi sensei koki* kinen [Theory of laws on labor contracts in the new era: To commemorate the 70th birthday of Professor Takashi Shimoi], ed. Ken'ichiro Nishimura, Noriaki Kojima, Tomoyuki Kato, and Takayasu Yanagiya (Tokyo: Shinzansha, 2003), 36; Shinya Ouchi, "Juzoku rodosha to jiei-rodosha no kinko o motomete" [Seeking equilibrium between dependent workers and self-employed workers], in *Rodokankei ho no gendaiteki tenkai: Nakajima Shigeya sensei kanreki kinen ronshu* [Contemporary developments in labor relations law: To commemorate the 60th birthday of Professor Shigeya Nakajima], ed. Michio Tsuchida, Takashi Araki, Fumiko Obata, et al. (Tokyo: Shinzansha, 2004), 54–56; Takayasu Yanagiya, *Gendai rodo ho to rodosha gainen* [The concept of workers in contemporary labor law] (Tokyo: Shinzansha, 2005), 307–311.
4. ILO (International Labour Office), *Non-Standard Employment around the World: Understanding Challenges*, *Shaping Prospects*, (Geneva: International Labour Office, 2016), 36. https://www.ilo.org/wcmsp5/groups/public/—dgreports/—dcomm/—publ/documents/publication/wcms_534326.pdf. Regarding the developments in discussions at the ILO, see Koichi Kamata, "Koyo ruiji no hatarakikata to rodo hosei no kadai" [Employment-like working styles and issues in the labor law system], *Work & Life*, *Sekai no rodo* (May 2018): 2–4.
5. MHLW, *Kongo no rodo keiyaku hosei no arikata ni kansuru kenkyukai hokokusho* [Report of the Study Group on the Future of the Laws on Labor Contracts] (Tokyo: MHLW, 2005); MHLW-commissioned research, *Kongo no zaitaku shugyo no arikata kentokai hokokusho* [Report of the Meeting on the Future of Home Work] (Tokyo: MHLW, 2014).
6. Koichi Kamata, "Itaku-gata shugyosha no hoteki kadai to hogo no arikata" [The legal issues and state of protection of outsourcing workers], in *Gyomu-itakugata shugyosha no shugyo jittai to hoteki hogo no arikata: Kakenhi kiban kenkyu (c) kenkyuseika hokokusho* [The employment situation and state of legal protection of outsourcing workers, research report supported by a Grant-in-Aid for Scientific Research, Basic Research (C)], ed. Koichi Kamata (Unpublished Report 2018), 8–9.
7. Prior studies include: Yanfei Zhou, "Kojin ukeoi no rodo jittai to shugyo sentaku no kettei yoin" [Determinants of job selection by individual outside contractors and their working conditions], *JCER Economic Journal* 54 (2006): 63–89; MHLW-commissioned research, *Kojin ukeoi shugyosha ni kansuru kenkyukai hokokusho* [Report of the Study Group on Independent Contractors] (Tokyo: MHLW, 2010); MHLW-commissioned research, *supra* note 5 (2014).
8. A tabulation of the survey results is published in Kamata, *supra* note 6, 31–39.
9. RENGO-RIALS (Japanese Trade Union Confederation Research Institute for Advancement of Living Standards), "The diversification of working styles and legal protection: A report on survey research on the current situation and challenges of ambiguous 'employment relations'," the JTUC-Rengo and RENGO-RIALS joint research report, survey on current working situation of independent contractors and crowd workers (Tokyo: RENGO-RIALS, 2017), https://www.rengo-soken.or.jp/work/201712–01.pdf (in Japanese).
10. JILPT, "Flash report on 'Survey on employment situation and attitudes of independent self-employed workers, an online survey'" in MHLW's full text of *Reference material for Employment-Like Working Styles Meeting Report* (Tokyo: MHLW, 2018), 23–51, https://www.mhlw.go.jp/file/04-Houdouhappyou-11911500-Koyoukankyoukintoukyoku-Zaitakuroudouka/0000201102.pdf.
11. ILO, *supra* note 4, 261.
12. ILO, *supra* note 4, 9.
13. Regarding the significance of the "coercion of legal form," see Kamata, "Keiyaku no seishitsu kettei to hokeishiki kyosei (ichi)" [The determination of the nature of contracts and the coercion of legal form (1)], in *Ryutsu Keizai Daigaku Hogakubu kaiko kinen ronbunshu* [Collected essays to commemorate the founding of Ryutsu Keizai University Faculty of Law] (Ryugasaki: Ryutsu Keizai University Press, 2002), 92–93.
14. Kamata, *supra* note 13, 75–76.
15. Koichi Kamata, "Rodo kijunho jo no rodosha gainen ni tsuite" [Concept of a worker under the Labor Standards Act], *Chuo Law Review* 111, no.7–8 (2005): 65.

16. ILO, *supra* note 4, 264–265.
17. A number of academic theories argue that the worker concept should be interpreted relatively, according to the essence and objectives of each labor law. For instance, Tomoko Kawada posits that "workers" as defined under the Labor Contracts Act differ from "workers" as defined under the Labor Standards Act in "Kojin ukeoi / itaku shugyosha no keiyakuhojo no chii" [The status of Independent contractors in the Law of Contract: Focusing on midterm cancellation and refusal of contact renewal], *Journal of Labor Law* 118, 2011 at 19–21. See also Hisashi Takeuchi (Okuno), "Rodosha no gainen" [The concept of a worker] in *Rodoho no soten* [Issues in labor law], ed. Michio Tsuchida and Ryuichi Yamakawa, special issue, *Jurist*: Issues in jurisprudence series no.7 (March, 2014): 4.
18. Under Japanese labor law, a worker is defined as a person who is subordinated to another party of contract, regardless of the type of contracts. Therefore, a concept of worker is including not only a person who provides labor under an employment contract (employee), but also a person who provides services under a service contract other than the employment contract.
19. Kazuo Sugeno, *Rodoho* [Labor law], 11th ed. (Tokyo: Kobundo, 2016), 176; Yoko Hashimoto, "Kobetsuteki rodokankei ni okeru rodosha" [Workers in individual labor relations], in *Rodo hanrei hyaku sen,* 9th ed. (Tokyo: Yuhikaku, 2016), 5.
20. There are innumerable judicial precedents and academic theories on worker status. Judicial precedents are analyzed in detail by Yoko Hashimoto in RENGO-RIALS, *supra* note 9, 99–119.
21. Takashi Araki, *Rodoho* [Labor law], 3rd ed. (Tokyo: Yuhikaku, 2016), 53–58; Ryuichi Yamakawa, *Koyo Kankei ho* [Employment relations law], 4th ed. (Tokyo: Shinsei-sha, 2008) 23–25; Mizumachi, Yuichiro, *Rodoho* [Labor law], 7th ed. (Tokyo: Yuhikaku, 2018), 64–72.
22. Koichi Kamata, "Rodosha gainen no seisei" [The evolution of the concept of an "employee" in Japanese labour law, in comparison with the English and German labour law], *Japanese Journal of Labour Studies* 54, no.7 (July 2012): 5–15.
23. Michio Tsuciada, *Rodo keiyaku ho* [Labor Contracts Act], 2nd ed. (Tokyo: Yuhikaku, 2016), 57–58; Araki, *supra* note 21, 58–60.
24. ILO, *supra* note 4, 261.
25. ILO, *supra* note 4, 20–21.
26. At the Imperial Diet House of Representatives Labor Union Bill committee (December 12, 1945), government delegate Takahashi argued that while sharecroppers (tenant farmers) have extremely similar financial situations to those of workers, they should not be classed as workers "because they operate an independent business."
27. Yoshiaki Murakami, "Hacchusha no juzokusei no suijun o kettei suru yoin ni kansuru bunseki" [Analysis on factors determining the level of dependence on a client (ordering party)], in Kamata, *supra* note 6, 40–60.
28. Regarding legal approaches to the protection of workers in employment-like working styles, Araki, *supra* note 21, 60, advocates the "expanding the notion of worker approach" and the "legislative protection approach." Of the approaches introduced here, (i) corresponds with the expanding the notion of worker approach, and (ii) and (iii) are the equivalent of the legislative protection approach. Shinobu Nogawa argues in his *Rodoho* [Labor law] at 166 (Tokyo: Nippon Hyoronsha, 2018) that the integration of individual labor relations laws as a third approach alongside the expanding the notion of worker approach and the legislative protection approach. Shinya Ouchi, divides self-employed workers into (i) "the disguised self-employed," who are in fact employed, (ii) "semi-dependent workers," who are financially dependent on a particular company, and (iii) "genuinely self-employed," and suggests that reference should be made to cases in which protection similar to that offered under labor laws is partially extended to cover "semi-dependent workers," in *AI jidai no hatarakikata to ho* [Working styles and law in the age of AI] (Tokyo: Kobundo, 2017), 203–204.
29. ILO, *supra* note 4, 263; Hiroya Nakakubo, *Amerika Rodoho* [American labor law], 2nd ed. (Tokyo: Kobundo, 2010), 264.
30. For recent theories, see Hiroyuki Minagawa, "Rodoho jo no rodosha" [Workers as defined under labor law], in *Rodo ho no kiso riron* (Koza: Rodoho no saisei, dai 1-kan) [The basic theories of labor law (Course on regeneration of labor law, vol.1)], ed. by Japan Labor Law Association (Tokyo: Nippon Hyoron sha, 2017), 79–93; Takeuchi (Okuno), *supra* note 17, 4–5.
31. Miki Kawaguchi, *Rodosha gainen no saikousei* [The reconstruction of the concept of a worker] (Osaka: Kansai University Press, 2012), 403.
32. See Akira Hamamura in RENGO-RIALS, *supra* note 9, 204–205.
33. ILO, *supra* note 4, 36–39.
34. The UK laws and regulations applied to "workers" include the Employment Rights Act 1996, Section 230 (3), the Working Time Regulations 1998, Regulation 2 (1), and the National Minimum Wage Act 1998, Section 54 (3).
35. Collective Agreement Unity Act (Tarifvertrag Einheitsgesetz), Labour Court Act (Arbeitsgerichtsgesetz), Federal Holiday Act (Bundersurlaubsgesetz), and Workplace Protection Act (Arbeitsschutzgesetz) are applied to employee-like person. Employee-like persons are defined in Article 12 (a) of the Collective Agreement Unity Act.
36. South Korea's Hanguk san-eop jaehae bosang boheombeop [Industrial Accident Compensation Insurance Act, Article 125] (Teugsu hyeongtae geunro jongsaja-e daehan teugrye) [(Special case for "Person in Special Types of Employment")] prescribes that those people providing labor in a similar capacity to workers, who require protection in the event of a work-related accident, shall be eligible for the application of the Industrial Accident Compensation Insurance Act even if they are not workers.
37. Simon Deakin and Gillian Morris, *Labour Law*, 5th ed. (Oxford: Hart Publishing, 2009), 575.
38. In RENGO-RIALS, *supra* note 9, at 120, Yoko Hashimoto shows her disapproval about introducing the third category because it would need the differentiation between persons in the third category and the self-employed, make the current difficult

determination more complicated, and also, it is based on the premise that current judgment on worker status under the Labor Standards Act (Labor Contracts Act).

39. See Katsutoshi Kezuka, "Kuraudo-waku no rodohogaku jo no kento kadai" [Issues regarding crowd work to study in terms of labor law], *Quarterly Labor Law (Kikan Rodoho)* 259 (Winter 2017): 53–66. Regarding the working situation of crowd workers, see RENGO-RIALS, *supra* note 9.
40. The materials provided at the MHLW's Meeting on Points of Controversy with regard to Employment-Like Working Styles (third session onward) are a useful source of reference regarding the deliberation on the individual types of protection content.
41. Ouchi, *supra* note 28, at 192, argues that the contracts of workers in self-employment-like working arrangements should be optimized through special legislation.
42. Koichi Kamata, "Romu sabisu no horitsu kankei: Gyomu itaku keiyakusho o sozai toshite" [Legal consideration related to labor services: Focusing on outsourcing agreements] in *Rodo to Kankyo* (Waseda Daigaku 21-seiki sosho: Kigyo shakai no henyo to hosozo, dai 6-kan) [Labor and its environment (Waseda University 21 century COE series: Shifts in corporate society and the creation of law, vol.6], ed. Makoto Ishida and Tadashi Otsuka (Tokyo: Nippon Hyoron-sha, 2008), 81–82.
43. Hamamura, *supra* note 32; Masayuki Numata in RENGO-RIALS, *supra* note 9, 141.
44. Satoshi Hasegawa, "Itakugata shugyosha no hoteki hogo: Saitei hoshu hosho, kaiyaku / keiyaku koshin kisei o chushin ni" [Legal protection for "outsourcing workers": Especially in regard to minimum remuneration guarantee and renewal or termination of contract], *Journal of Labor Law* 130 (October 2017): 29.
45. Hamamura, *supra* note 32.
46. See MHLW, Seifuti net no genjo (imeji) [The current state of safety nets (image)], reference material no.9 of the 6th Meeting on Points of Controversy with regard to Employment-Like Working Styles, https://www.mhlw.go.jp/content/11911500/000484233.pdf (in Japanese).
47. Toshiharu Suzuki, "Furansu ni okeru kuraudowaku no genjo to hoteki kadai" [The current state and legal issues of crowd work in France], *Quarterly Labor Law (Kikan Rodoho)* 259 (Winter 2017): 90–92.
48. Ken'ichi Tanaka, "Itakugata shugyosha no saigai hosho" [Industrial accident compensation for outsourcing workers], *Journal of Labor Law* 130 (October 2017): 37–38.
49. Masahiko Iwamura, "Rosai hoken seisaku no kadai" [The issues on policy of industrial accident insurance], in *Kenko / anzen to katei seikatsu* (Koza: 21seiki no rodoho, dai 7-kan) [Health, safety and family life (21st labor law course, vol.7)], ed. Japan Labor Law Association (Tokyo: Yuhikaku, 2000), 37: Ken'ichiro Nishimura, "Rosai shokugyo-byo no henyo to rosai hoken" [Shifts in industrial accidents and occupational diseases and industrial accident compensation insurance], in *Shotoku hosho ho* (Koza: Shakai hoshoho, dai 2-kan) [Income Security Law (Series on Social Security Law, vol.2)], ed. Japan Association of Social Security Law (Kyoto: Horitsu Bunka Sha, 2000), 202.
50. Satoru Aono, "Tokubetsu kanyu seido ni okeru gyomu jo gai nintei" [The acknowledgment of work-related or non-work related circumstances special enrollment system], in *Rosai hoken jo no tokubetsu kanyu seido ni kansuru shomondai no kento* [Investigating the various problems regarding the special enrollment system under the Industrial Accident Compensation Insurance Act], Project Report by the Japan Federation of Labor and Social Security Attorney's Associations (Tokyo: Japan Federation of Labor and Social Security Attorney's Associations, 2011), 37; Tanaka, *supra* note 48, 39–41.

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# Wage Disparities between Standard and Non-standard Employees: From the Perspective of Human Resource Management

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This article discusses determinants in wage disparities between standard employees and non-standard employees from the perspective of human resource management. Focusing on wage systems for non-standard employees of the company, especially the factors determining wages of non-standard employees and differences with those of standard employees, this study examined the effects on the wage levels of non-standard employees engaged in the same jobs as standard employees. Analysis employing establishment survey data found that at establishments that set different wage determination factors for non-standard employees engaged in the same work as standard employees, as opposed to establishments that apply the same wage determination factors, the wage levels of both fixed- and non-fixed term part-time workers and fixed-term contract workers engaged in the same work as standard employees tended to be much lower than those of standard employees. This finding was also confirmed in an analysis using data from other establishment surveys, conducted around the same time as the establishment survey on wage levels of part-time workers engaged in the same duties as standard employees. The implication is that it is necessary to consider differences in the wage structure between standard employees and non-standard employees as a factor that hinders equal treatment (prohibition of less favorable treatment) and balanced or proportional treatment of employees.



## I. Introduction

Why are the wage levels of non-standard employees (e.g. full-time and part-time employees with fixed-term contracts) lower than those of standard employees (i.e. full-time employees with non-fixed-term contracts) despite being engaged in the same job? This article examines the determinants of the wage level of non-standard employees engaged in the same work as standard employees, from the perspective of human resource management.[1]

In companies' human resource management, it is not easy to equalize or balance the wage levels of standard employees and non-standard employees. The main reason is that even if companies have standard and non-standard employees in the same workplace, they do not always necessarily apply the same wage system to both. Even if standard and non-standard employees are engaged in the same jobs, if wage determination factors differ, it is difficult to match the wage levels of the two. The basic approach of human resource management is that if different employee groups are formed, according to differences in tasks, roles, and contributions, different human resource management systems are supposed to be applied to each group. (Lepak and Snell 1999, 2002; Morishima 2004; Imano and Sato 2009, etc.). Differences in employment status between standard and non-standard employees essentially need to be decided based on the tasks, roles, and contributions that management expects from these employees. However, in practice, companies may seek to heighten the sophistication of non-standard employees' work duties so that they could be engaged in the same work as standard employees, in order to improve the efficiency of human resource management. This causes problems in terms of equal or balanced/proportional treatment (Sato 2008).

This article will first introduce the main researches focusing on the relationship between integrating non-standard employees into the core workforce (hereinafter referred to as workforce integration) and equal or balanced/proportional treatment in terms of the determinants of the wage level of non-standard employees engaged in the same work as standard employees. Then, from the standpoint of human resource management, this study notes that it is necessary to consider wage systems of non-standard employees, and specifically wage determination factors such as differences and similarities to standard employees, as determinants that affect the wage levels of non-standard employees engaged in the same job as standard employees. In addition, it analyzes the wage level determinants of non-standard employees who are engaged in the same jobs as standard employees by using multiple establishment survey data.

## II. Wage disparities between standard and non-standard employees from a human resource management perspective: Workforce integration and equal or balanced/proportional treatment

In human resource management, wage disparities between standard and non-standard employees become a problem when companies pursue workforce integration of non-standard employees in order to improve the efficiency of human resource management. "Workforce integration" means that non-standard employees' duties become more upgraded, and they hold important positions in the company.[2] As workforce integration of non-standard employees progresses and the duties of non-standard employees increasingly coincide with those of standard employees, it becomes necessary to consider wage level disparities and wage balance, that is, equal or balanced/proportional treatment of employees. If there are significant wage disparities between non-standard employees and standard employees engaged in the same duties, non-standard employees will be dissatisfied with their wages, and this will potentially cause decline in motivation and performance and increased intention to leave the company.

What are the factors affecting the balance of treatment of standard and non-standard employees engaged in the same work, especially the balance of wage levels? Sato, Sano, and Hara (2003) analyzed the characteristics of companies that take into account balanced or proportional treatment of standard employees and part-time workers through a questionnaire survey targeting companies with 500 or more employees, including companies belonging to private-sector industry organizations affiliated with JTUC-Rengo (the Japanese Trade Union Confederation). They defined part-time workers as "non-standard employees with shorter working hours than those of standard employees," and balanced/proportional treatment as "establishing differences in treatment of workers according to differences in jobs or tasks." Based on statistical analysis, Sato et al. showed that companies pursuing workforce integration of part-time workers and companies that view the human resource quality of non-standard employees as sources of market competitiveness along

with the prices of their products and services tend to work actively toward achieving balanced/proportional treatment of standard employees and part-time workers.

Wakisaka (2003) defined "equal treatment" as determining the treatment of part-time workers in the same manner as standard employees when their duties are the same, and described balanced/proportional as keeping disparities in treatment within a reasonable range when duties are the same but there are differences in employment management. He then examined relationships between workforce integration of part-time workers and equal or balanced/proportional treatment. A statistical analysis of the characteristics of establishments that use the same systems for determining wages of part-time workers and standard employees showed that establishments that have systems for appointing part-time workers to responsible positions such as group leaders, chiefs, and managerial positions, and systems for transitioning part-time workers to full-time standard employment status, had a tendency to determine wages in the same manner for standard employees and part-time workers, which increased in proportion to the percentage of part-time workers engaged in the same work as standard employees.

Nishino (2006) surveyed the workforce integration of part-time workers in three business categories (big-box retailers, supermarkets, and big-box electrical appliance retailers), and examined correlations with equal or balanced/proportional treatment. Interviews with store managers and store employees (standard employees and non-standard employees) of seven companies in these three business categories, and questionnaire surveys of 25 store employees, found that while the jobs of part-time workers subject to workforce integration were the same as those of standard employees, there were differences in job responsibilities, varieties of work duties, and flexibility of working time/schedule. Also, it was found that some companies hoped to overlap the responsibilities as well as the work of standard employees and part-time workers, but hesitated to integrate the workforce further because this would require equal treatment of workers.

Based on transaction cost economics, Hirano (2009) presented a theoretical framework comprising two axes: task uncertainty and firm specificity of human capital. Hirano asserted that when task uncertainty and firm specificity of human capital are high it would be rational to hire standard employees, and conversely it would be reasonable to hire non-standard employees when these two characteristics were at low levels. It was assumed that balanced/proportional treatment of standard and non-standard employees would be achieved as the task uncertainty and firm specificity of human capital of part-time workers increased. The indicators for task uncertainty and firm specificity of human capital were the jobs and level of ability and skill required of part-time workers, and the indicator for balanced/proportional treatment was the basic wage level of part-time workers who have the same levels of work and responsibility as standard employees, when the wages of standard employees (mid-career employees who have been at the company for approximately five years) are set at 100. The results of analysis utilizing questionnaire survey data for establishments in Osaka Prefecture showed that while task uncertainty had no significant effect, firm specificity of human capital had a significant positive effect on balanced/proportional treatment, and establishments that trained part-time workers in firm-specific skills in the same manner as standard employees gave these workers balanced/proportional treatment.

These studies suggest that factors affecting the wage levels of non-standard employees engaged in the same job as standard employees include strategies and policies for utilizing non-standard employees within the establishment, and the work characteristics and required abilities and skills of non-standard employees. If non-standard employees are positioned alongside standard employees at the core of a human resources strategy, it can be expected that the characteristics of non-standard employees' work and human capital requirements will become similar to those of standard employees, and the wage levels of non-standard employees will also rise to near the levels of standard employees. However, from the standpoint of human resource management, wage levels of non-standard employees are not directly determined by the policy for management of non-standard employees or the work and skill characteristics of these employees. Establishments design wage systems for non-standard employees along with allocation of their jobs, and wage levels are determined as a result.

One important thing in wage management for non-standard employees is the wage determination factors.

Wage determination factors include work duties, work performance, ability and experience, the wage standards and minimum wage of the region, age, and grade within the company (professional qualifications and duty grade). For example, Tsuru, Abe, and Kubo (2005) used data on employees of specific establishments to examine the effects of age, seniority, educational background, position, professional qualifications, score on in-house evaluations and so forth on monthly salary, bonus, and annual income, and their analysis showed that professional qualifications have greater influence than age and seniority in determining monthly salary. The wage levels of non-standard employees can vary depending on what factors are reflected in their wages. Another important point is the difference or similarity between wage determination factors of standard and non-standard employees (Wakisaka 2003). If wage levels are essentially the outcome of wage systems (Nishimoto and Imano 2003), it is thought that the balance in wage systems of standard and non-standard employees will bring about balance in wage levels of them (Nishioka 2018).

Based on these previous researches, if the process of determining wage levels of non-standard employees is organized from the perspective of human resource management, the work characteristics and required skills expected of non-standard employees will be based on the human resource strategy for non-standard employees. Non-standard employees' wage levels are determined by wage management policies formulated on this basis (wage determination factors and the differences with standard employees). When examining determinants affecting wage levels of non-standard employees engaged in the same work as standard employees, it is considered necessary to take into account the wage determination factors of non-standard employees. If balance in the wage system leads to balance of wage levels (Nishimoto and Imano 2003; Nishioka 2018), then if wage determination factors of non-standard employees are the same as those of standard employees, the wage levels of non-standard employees should be higher and wage disparities smaller, while conversely if wage determination factors are different from standard employees, wage levels of non-standard employees should be lower and wage disparities greater.

Below, data from two establishment surveys conducted in 2010 will be used to examine determinants for wage levels of non-standard employees engaged in the same work as standard employees, taking into consideration wage systems for them.

## III. Analysis 1: Wage levels of fixed- and non-fixed term part-time workers and fixed-term contract workers

### 1. Data and samples

Analysis 1 employs data from the establishment survey section of the Survey on Management of Workers with Diverse Employment Status (referred to below as Survey 1), conducted by the Japan Institute for Labour Policy and Training (JILPT) in August 2010. Survey 1 was distributed to 10,000 private establishments with 10 or more "*joyo koyo* employees" (employees under non-fixed term contract or those under more than one-month contract) nationwide, with 1,610 responses received. The survey categorizes employment status based on three categories: direct or indirect employment, fixed- or non-fixed term employment, and number of prescribed working hours. Standard employees are "employees with direct and non-fixed term employment, and regular prescribed working hours," fixed- and non-fixed term part-time workers are defined as "directly employed workers with fewer than the prescribed working hours, including both cases where there is and is not a fixed term of employment," and fixed-term contract workers are defined as "directly employed workers with a fixed term of employment (one month or more) and the same prescribed working hours as regular workers."

The analyzed sample excluded agriculture, forestry and fisheries, public service, and other industries from all responses, and also excluded worker dispatching agency and subcontracting establishments, and respondents that gave no answer regarding form of establishment and/or number of joyo koyo employees, and of the establishments that employed standard employees and fixed- and non-fixed term part-time workers or

fixed-term contract workers, included those that had workers with the above-mentioned employment status engaged in the same work as standard employees. As a result, the sample size to be analyzed covered 351 fixed- and non-fixed term part-time workers and 248 fixed-term contract workers.

Regarding key affiliations of the fixed- and non-fixed term part-time workers in the sample, in terms of industry, medical, health care and welfare were most common with 33.6%, followed by manufacturing with 22.8% and wholesale and retail trade with 10.3%. As for form of establishment, factory was the top response with 23.9%, followed by store with 14.8% and company with 13.7%. The responses for number of joyo koyo employees were: 10–29 employees 14.0%, 30–99 employees 24.5%, 100–299 employees 30.8%, meaning 69.3% of the establishments had 300 employees or fewer. 43.6% of the establishments had labor unions.

Regarding key affiliations of fixed-term contract workers, in terms of industry, manufacturing was most common with 30.6%, followed by medical, health care and welfare with 22.2% and education and learning support with 11.3%. As for form of establishment, factory was the top response with 28.2%, followed by company with 19.8% and store with 10.1%. The responses for number of joyo koyo employees were: 10–29 employees 5.2%, 30–99 employees with 18.1%, 100–299 employees with 34.8%, meaning 58.1% of the establishments had 300 employees or fewer. 54.8% of the establishments had labor unions.

## 2. Descriptive analysis

Table 1 shows the wage levels of fixed- and non-fixed term part-time workers and fixed-term contract workers engaged in the same work as standard employees. The table shows that at 21.8% of establishments, the wages of fixed- and non-fixed term part-time workers were nearly the same as or higher than those of standard employees engaged in the same work, and together with establishments where wages were around 90% or 80% of standard employees, account for 60.7% of the total.

Meanwhile, with regard to fixed-term contract workers, at 33.8% of establishments, wages were nearly the same as or higher than those of standard employees engaged in the same work, and together with establishments where wages were around 90% or 80% of standard employees, account for 73.1% of the total. Compared to fixed- and non-fixed term part-time workers engaged in the same work as standard employees, fixed-term contract workers' wage levels are closer to those of standard employees.

Tables 2 and 3 compare the wage levels of fixed- and non-fixed term part-time workers and fixed-term contract workers engaged in the same work as standard employees, by wage determination factors at the time of hiring. The wage determination factors at time of hiring are not necessarily the same as the wage determination factors for all those with the same employment status or the salary increase criteria, but in many cases they can be considered to reflect the wage determination factors of those with this employment status.

Table 1. Wage levels of fixed- and non-fixed term part-time workers and fixed-term contract workers engaged in the same work as standard employees

(%)

| | Fixed- and non-fixed term part-time workers | Fixed-term contract workers |
|---|---|---|
| Nearly the same as or higher than standard employees' wages | 21.8 | 33.8 |
| Around 90% of standard employees' wages | 12.4 | 14.8 |
| Around 80% of standard employees' wages | 26.5 | 24.5 |
| Around 70% of standard employees' wages | 17.7 | 16.0 |
| Around 60% of standard employees' wages | 13.3 | 8.0 |
| Around 50% or less of standard employees' wages | 8.3 | 3.0 |
| N | 339 | 248 |

*Notes*: 1. Wage levels indicate prescribed wage amounts, converted to an hourly rate.
2. Tabulation excludes establishments that did not respond to this question.

Table 2. Wage levels of fixed- and non-fixed term part-time workers engaged in the same work as standard employees: Wage determination factors when hiring

(%)

| | Fixed- and non-fixed term part-time workers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Initial salary of standard employees | | Wages of standard employees who are doing the same or similar work | | Regional wage | | Minimum wage | | Worker's experience and ability | |
| | Criterion | Non-criterion | Criterion | Non-criterion | Criterion | Non-criterion | Criterion | Non-criterion | Criterion | Non-criterion |
| Nearly the same as or higher than standard employees' wages | 30.8 | 20.7 | 37.1 | 18.4 | 14.6 | 28.2 | 22.2 | 21.7 | 28.7 | 16.8 |
| Around 90% of standard employees' wages | 12.8 | 12.3 | 12.9 | 12.3 | 13.9 | 11.0 | 7.9 | 13.4 | 14.7 | 10.7 |
| Around 80% of standard employees' wages | 35.9 | 25.3 | 19.4 | 28.2 | 27.2 | 26.0 | 23.8 | 27.2 | 28.0 | 25.5 |
| Around 70% of standard employees' wages | 12.8 | 18.3 | 12.9 | 18.8 | 19.0 | 16.6 | 20.6 | 17.0 | 13.3 | 20.9 |
| Around 60% of standard employees' wages | 7.7 | 14.0 | 9.7 | 14.1 | 15.8 | 11.0 | 19.0 | 12.0 | 7.7 | 17.3 |
| Around 50% or less of standard employees' wages | 0.0 | 9.3 | 8.1 | 8.3 | 9.5 | 7.2 | 6.3 | 8.7 | 7.7 | 8.7 |
| Wage level score | 4.5 | 3.8 | 4.3 | 3.8 | 3.6 | 4.1 | 3.7 | 3.9 | 4.2 | 3.6 |
| N | 39 | 300 | 62 | 277 | 158 | 181 | 63 | 276 | 143 | 196 |

*Notes*: 1. Wage levels indicate prescribed wage amounts converted to prescribed hourly wage.
2. Tabulation excludes establishments that did not respond to this question.
3. The wage level score is the average value in cases where around 50% or less of standard employees' wages = 1, 60% = 2, 70% = 3, 80% = 4, 90% = 5, and nearly the same as or higher than standard employees' wages = 6.

Table 3. Wage levels of fixed-term contract workers engaged in the same work as standard employees: Wage determination factors when hiring

(%)

| | Fixed-term contract workers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Initial salary of standard employees | | Wages of standard employees who are doing the same or similar work | | Regional wage | | Minimum wage | | Worker's experience and ability | |
| | Criterion | Non-criterion | Criterion | Non-criterion | Criterion | Non-criterion | Criterion | Non-criterion | Criterion | Non-criterion |
| Nearly the same as or higher than standard employees' wages | 51.2 | 29.9 | 48.8 | 25.8 | 20.0 | 39.0 | 17.4 | 35.5 | 32.4 | 34.9 |
| Around 90% of standard employees' wages | 9.3 | 16.0 | 14.6 | 14.8 | 12.3 | 15.7 | 17.4 | 14.5 | 17.6 | 12.4 |
| Around 80% of standard employees' wages | 20.9 | 25.3 | 23.2 | 25.2 | 35.4 | 20.3 | 34.8 | 23.4 | 28.7 | 20.9 |
| Around 70% of standard employees' wages | 14.0 | 16.5 | 8.5 | 20.0 | 18.5 | 15.1 | 13.0 | 16.4 | 13.9 | 17.8 |
| Around 60% of standard employees' wages | 4.7 | 8.8 | 3.7 | 10.3 | 9.2 | 7.6 | 13.0 | 7.5 | 6.5 | 9.3 |
| Around 50% or less of standard employees' wages | 0.0 | 3.6 | 1.2 | 3.9 | 4.6 | 2.3 | 4.3 | 2.8 | 0.9 | 4.7 |
| Wage level score | 4.9 | 4.3 | 4.9 | 4.1 | 4.0 | 4.6 | 4.0 | 4.5 | 4.5 | 4.3 |
| N | 43 | 194 | 82 | 155 | 65 | 172 | 23 | 214 | 108 | 129 |

*Notes*: 1. Wage levels indicates prescribed wage amounts converted to prescribed hourly wage.
2. Tabulation excludes enterprises that did not respond to this question.
3. The wage level score is the average value in cases where around 50% or less of standard employees' wages = 1, 60% = 2, 70% = 3, 80% = 4, 90% = 5, and nearly the same as or higher than standard employees' wages = 6.

In Survey 1, six wage determination factors when hiring fixed- and non-fixed term part-time workers and fixed-term contract workers were specified: "initial salary of standard employees," "wages of standard employees who are doing the same or similar work," "regional wage," "minimum wage," "worker's experience and ability," and "other," and respondents answered with all criteria that determine or are taken into account when setting wages (multiple answers) responses. Wage levels were compared based on five items, excluding "other," depending on whether or not they are used as a determinant or reference.

According to Table 2, in terms of percentage of establishments where wage levels of fixed- and non-fixed term part-time workers are nearly the same as or higher than those of standard employees, "initial salary of standard employees" is a criterion for 30.8% and not a criterion in 20.7% of cases. Similarly, "wages of standard employees who are doing the same or similar work" is 37.1% (criterion) vs. 18.4% (not a criterion), "regional wage" is 14.6% vs. 28.2%, "minimum wage" is 22.2% vs. 21.7%, and "worker's experience and ability" is 28.7% vs. 16.8%. When including establishments where wages are around 90% and 80% of those of standard employees, "initial salary of standard employees" is a criterion for 79.5% and not a criterion in 58.3% of cases, "wages of standard employees who are doing the same or similar work" is 69.4% vs. 58.9%, "regional wage" is 55.7% vs. 65.2%, "minimum wage" is 53.9% vs. 62.3%, and "worker's experience and ability" is 71.4% vs. 53.0%.

For reference, when the wage level score for non-standard employees whose average wages are calculated at around 50% or less of standard employees' wages = 1, 60% = 2, 70% = 3, 80% = 4, 90% = 5, and nearly the same as or higher than standard employees' wages = 6, and on this basis "initial salary of standard employees" is calculated at criterion 4.5 vs. non-criterion 3.8, and continuing in the fashion, "wages of standard employees who are doing the same or similar work" is 4.3 vs. 3.8, "regional wage" is 3.6 vs. 4.1, "minimum wage" is 3.7 vs. 3.9, and "worker's experience and ability" is 4.2 vs. 3.6. For fixed- and non-fixed term part-time workers, wage levels tend to be closer to those of standard employees at establishments that use the initial salary of standard employees, wages of standard employees who are doing the same or similar work, and worker's experience and ability as criteria for wage determination or reference. On the other hand, establishments that use "regional wage" and "minimum wage" as criteria tend to have wage levels much lower than those of standard employees.

According to Table 3, in the case of fixed-term contract workers, the percentage of establishments whose wage levels are nearly the same as or higher than those of standard employees employing "initial salary of standard employees" as a criterion is 51.2% vs. 29.9% where it is a non-criterion. Similarly, "wages of standard employees who are doing the same or similar work" is 48.8% criterion vs. 25.8% non-criterion, "regional wage" is 20.0% vs. 39.0%, "minimum wage" is 17.4% vs. 35.5%, and "worker's experience and ability" is 32.4% vs. 34.9%. When including establishments where wages are around 90% and 80% of those of standard employees, "initial salary of standard employees" is a criterion for 81.4% and not a criterion in 71.2% of cases. Similarly, "wages of standard employees who are doing the same or similar work" is 86.6% vs. 65.8%, "regional wage" is 67.7% vs. 75.0%, and "minimum wage" is 69.6% vs. 73.4%. "Worker's experience and ability" is 78.7% vs. 68.2%.

Looking at the wage level scores of fixed-term contract workers, "initial salary of standard employees" is criterion 4.9 vs. non-criterion 4.3, and "wages of standard employees who are doing the same or similar work" is 4.9. vs. 4.1, "regional wage" is 4.0 vs. 4.6, "minimum wage" is 4.0 vs. 4.5, and "worker's experience and ability" is 4.5 vs. 4.3.

As for fixed-term contract workers, similar to fixed- and non-fixed term part-time workers, establishments that use, as a determinant or reference, "initial salary of standard employees," "wages of standard employees who are doing the same or similar work," and "worker's experience and ability," tend to have wage levels closer to standard employees, especially with regard to "initial salary of standard employees" and "wages of standard employees who are doing the same or similar work." Also, as with fixed- and non-fixed term part-time workers, establishments that use "regional wage" and "minimum wage" as criteria tend to set wage

Table 4. Wage levels of fixed- and non-fixed term part-time workers and fixed-term contract workers engaged in the same work as standard employees: Difference or similarity of wage determination factors

(%)

| | Fixed- and non-fixed term part-time workers | | | Fixed-term contract workers | | |
|---|---|---|---|---|---|---|
| | Same wage table as standard employees | Different wage table from standard employees | Neither of them | Same wage table as standard employees | Different wage table from standard employees | Neither of them |
| Nearly the same as or higher than standard employees' wages | 47.4 | 17.8 | 23.3 | 61.9 | 25.5 | 32.1 |
| Around 90% of standard employees' wages | 21.1 | 12.9 | 10.0 | 11.9 | 14.5 | 17.9 |
| Around 80% of standard employees' wages | 21.1 | 25.8 | 40.0 | 14.3 | 27.6 | 28.6 |
| Around 70% of standard employees' wages | 5.3 | 19.7 | 0.0 | 4.8 | 19.3 | 14.3 |
| Around 60% of standard employees' wages | 5.3 | 14.8 | 16.7 | 4.8 | 9.7 | 7.1 |
| Around 50% or less of standard employees' wages | 0.0 | 9.1 | 10.0 | 2.4 | 3.4 | 0.0 |
| Wage level score | 5.0 | 3.7 | 3.9 | 5.1 | 4.2 | 4.5 |
| N | 19 | 264 | 30 | 42 | 145 | 28 |

*Notes*: 1. Wage levels are prescribed wage amounts converted to prescribed hourly wage.
2. Tabulation excludes enterprises that did not respond to this question.
3. The wage level score is the average value in cases where around 50% or less of standard employees' wages = 1, 60% = 2, 70% = 3, 80% = 4, 90% = 5, and nearly the same as or higher than standard employees' wages = 6.

levels of fixed and non-fixed term part-time employees significantly lower than those of standard employees.

Table 4 compares the wage levels of fixed- and non-fixed term part-time workers and fixed-term contract workers engaged in the same work as standard employees, by wage determination factors. In Survey 1, with regard to the difference or similarity of wage determination factors of fixed- and non-fixed term part-time workers and fixed-term contract workers, as compared to standard employees, there were four response options: "the same wage scale and table as standard employees are applied," "the same wage scale and table as standard employees are applied, but its operation is changed," and "different wage scale and table from standard employees is applied," and "neither of them." "The same wage scale and table as standard employees are applied, but its operation is changed" means that, for example, there may be a difference in the amount and timing of the salary increase, or an upper limit for salary increase. Meanwhile, "neither of them" is assumed that a wage scale and table are not set for either standard and non-standard employees, or both, and wages are set on a case-by-case basis. When tabulating, focusing on the difference between wage scale and table of standard and non-standard employees, comparisons were made based on three categories: (1) "the same wage table as standard employees" (including cases where operation is changed), (2) "different wage table from standard employees," and (3) "neither of them."

As shown in Table 4, for fixed- and non-fixed term part-time workers, the percentage of establishments where wage levels are nearly the same as or higher than those of standard employees are: "the same wage table as standard employees" = 47.4%, "different wage table from standard employees" = 17.8%, and "neither of them" = 23.3%, and when including establishments where wages are around 90% and 80% of those of standard employees, "the same wage table as standard employees" = 89.6%, "different wage table from standard employees" = 56.5%, and "neither of them" = 73.3%. As for the wage level score, "the same wage table as standard employees" = 5.0, "different wage table from standard employees" = 3.7, and "neither of them" = 3.9. With regard to fixed- and non-fixed term part-time workers, the wage levels at establishments applying the same wage scale and table as standard employees tend to be close to those of standard employees, and those at establishments applying different wage scales and tables from standard employees tend to be much lower than the wage levels of standard employees. Wage levels at establishments responding "neither of them," as compared to those of standard employees, were split between "close to the same" and "much lower."

With regard to fixed-term contract workers, the percentage of establishments where wage levels are nearly the same as or higher than those of standard employees are: "the same wage table as standard employees" = 61.9%, "different wage table from standard employees" = 25.5%, and "neither of them" = 32.1%, and when including establishments where wages are around 90% and 80% of those of standard employees, "the same wage table as standard employees" = 88.1%, "different wage table from standard employees" = 67.6%, and "neither of them" = 78.6%. As for the wage level score, "the same wage table as standard employees" = 5.1, "different wage table from standard employees" = 4.2, and "neither of them" = 4.5. Like fixed- and non-fixed term part-time workers, the wage levels of fixed-term contract workers at establishments applying the same wage scale and table as standard employees tend to be close to those of standard employees, and those at establishments applying different wage scales and tables than standard employees tend to be much lower than the wage levels of standard employees. Wage levels at establishments responding "neither of them" tend to be closer to those of standard employees than at establishments that use a different wage scale and table than standard employees, but are still comparatively low.

## 3. Statistical analysis

(1) Variables

The explained variables are wage levels compared to standard employees engaged in the same work. As in the calculation of wage level scores, when around 50% or less of standard employees' wages = 1, 60% = 2, 70% = 3, 80% = 4, 90% = 5, and nearly the same as or higher = 6. The larger the number, the higher the wage

level (i.e. the closer to standard employees' wage levels).

Explanatory variables are the attributes of the establishment, utilization of each type of employment status, and variables relating to wage management of each employment status. First, the attributes of establishments consist of four categories: industry, form of establishment, number of joyo koyo employees, and presence or absence of labor union. "Industry" is assigned dummy variables for retail, education, training and learning support, medical, health care and welfare, and others, respectively, with manufacturing as the baseline value. "Form of establishment" is assigned dummy variables for company, laboratory, office, store, and others, respectively, with factory as the baseline value. "Number of joyo koyo employees" is assigned dummy variables for 30–99 employees, 100–299 employees, 300–499 employees, 500–999 employees, 1,000 employees or more, with 10–29 employees as the baseline value. "Presence or absence of labor union" is assigned dummy variables of 1 when an establishment has labor union and 0 when it does not.

Next, utilization of each type of employment status is classified into three categories: reason for employment, work duties, and promotion to positions. In Survey 1, the following 12 reasons (multiple answers possible) were given for utilizing fixed- and non-fixed term part-time workers and fixed-term contract workers: "to deal with specialized work," "to secure human resources with immediately applicable skills and abilities," "to enable standard employees to focus on more important tasks," "to determine whether to hire as standard employees," "to adjust the number of employees according to economic fluctuations," "to deal with long business (or operating) hours," "to deal with particularly busy days or times of the week," "to deal with changes in temporary and seasonal workload," "to reduce labor costs," "cannot secure standard employees," "to replace standard employees on childcare leave, etc." and "to meet the needs of workers," and each response was assigned a dummy variable. The following six types of work duties (multiple answers possible) were given: "management tasks," "planning tasks," "highly specialized tasks," "tasks requiring judgments," "routine tasks," and "supplementary tasks," each of which was assigned a dummy variable. Meanwhile, the item regarding positions to which fixed- and non-fixed term part-time workers and fixed-term contract workers can be promoted were classified as "team leader," "chief clerk or assistant section chief," and "section chief or department manager," each of which was assigned dummy variables. "Work duties" and "promotion to positions" can be regarded as an indicator of whether the same employment systems as standard employees are applied to fixed- and non-fixed term part-time workers and fixed-term contract workers.

Wage systems for each type of employment status includes two types of wage determination factors at time of hiring, and difference or similarity of wage determination factors compared to standard employees. The wage determination factors at the time of hiring are "initial salary of standard employees," "wages of standard employees who are doing the same or similar work," "regional wage," "minimum wage," and "worker's experience and ability," each of which was assigned a dummy variable. For difference or similarity of wage determination factors, dummy variables were assigned for "wage table different from standard employees" and "neither of them," with "same wage table as standard employees" as the baseline value.

(2) Results of analysis

The analysis divided samples into fixed- and non-fixed term part-time workers and fixed-term contract workers, and compared wage levels relative to those of standard employees engaged in the same work, with wage levels as the explained variable, and industry, form of establishment, number of joyo koyo employees, presence or absence of labor union, reason for employment, work duties, and promotion to positions, wage determination factors at time of hiring, and difference or similarity of wage determination factors were explanatory variables, and an ordered probit analysis was carried out.

The results of analysis are shown on Table 5. They show that with regard to fixed- and non-fixed term part-time workers, among work duties, "tasks requiring judgments" had a significant positive effect. Among the wage determination factors at the time of hiring, "worker's experience and ability" had a significant positive effect, and among the difference or similarity of wage determination factors, "different wage

Table 5. Determinants for wage levels of fixed- and non-fixed term part-time workers and fixed-term contract workers engaged in the same work as standard employees

| | | Fixed- and non-fixed term part-time workers | | Fixed-term contract workers | |
|---|---|---|---|---|---|
| | | Unstandardized coefficient | Standard error | Unstandardized coefficient | Standard error |
| Industry (baseline: manufacturing) | Wholesale and retail trade | −0.066 | 0.435 | 0.411 | 0.722 |
| | Education, training and learning support | 0.029 | 0.546 | 0.247 | 0.533 |
| | Medical, healthcare and welfare | 0.280 | 0.443 | 0.313 | 0.528 |
| | Others | 0.228 | 0.379 | 0.964* | 0.410 |
| Establishment (baseline: factory) | Office | −0.325 | 0.386 | −0.475 | 0.398 |
| | Laboratory | −0.363 | 0.615 | 0.777 | 0.788 |
| | Sales office | −0.129 | 0.416 | −0.276 | 0.470 |
| | Store | 0.154 | 0.405 | 0.491 | 0.617 |
| | Others | −0.033 | 0.415 | −0.323 | 0.496 |
| Number of joyo koyo employees (baseline: 10–29 employees) | 30–99 employees | 0.087 | 0.218 | −0.122 | 0.407 |
| | 100–299 employees | 0.039 | 0.232 | −0.069 | 0.404 |
| | 300–499 employees | −0.028 | 0.252 | −0.281 | 0.439 |
| | 500–999 employees | −0.142 | 0.269 | −0.603 | 0.427 |
| | 1,000 employees or more | −0.416 | 0.380 | 0.007 | 0.504 |
| Labor union | Presence=1, Absence=0 | −0.215 | 0.145 | −0.110 | 0.190 |
| Reason for employment | To deal with specialized work | −0.053 | 0.175 | −0.092 | 0.219 |
| | To secure human resources with immediately applicable skills and abilities | 0.080 | 0.152 | 0.362 | 0.194 |
| | To enable standard employees to focus on more important tasks | −0.138 | 0.192 | 0.536 | 0.281 |
| | To determine whether to hire as standard employees | 0.148 | 0.230 | 0.093 | 0.201 |
| | To adjust the number of employees according to economic fluctuations | −0.069 | 0.190 | 0.168 | 0.241 |
| | To deal with long business (or operating) hours | 0.192 | 0.205 | −0.733* | 0.343 |
| | To deal with particularly busy days or times of the week | 0.073 | 0.154 | −0.698 | 0.453 |
| | To deal with changes in temporary and seasonal workload | −0.128 | 0.197 | 0.614 | 0.336 |
| | To reduce labor costs | −0.260 | 0.141 | −0.348 | 0.186 |
| | Cannot secure standard employees | 0.016 | 0.189 | 0.000 | 0.247 |
| | To replace standard employees on childcare leave, etc. | −0.023 | 0.268 | −0.198 | 0.342 |
| | To meet the needs of workers | 0.068 | 0.146 | 0.343 | 0.246 |
| Work duties | Management tasks | −0.150 | 0.221 | −0.135 | 0.273 |
| | Planning tasks | −0.251 | 0.285 | −0.040 | 0.374 |
| | Highly specialized tasks | 0.044 | 0.207 | 0.695** | 0.244 |
| | Tasks requiring judgments | 0.563** | 0.208 | 0.583* | 0.244 |
| | Routine tasks | −0.219 | 0.156 | −0.719** | 0.220 |
| | Supplementary tasks | −0.179 | 0.154 | −0.303 | 0.196 |
| Promotion to positions | Team leader | 0.201 | 0.262 | 0.113 | 0.248 |
| | Chief clerk or assistant section chief | 0.283 | 0.451 | −0.485 | 0.331 |
| | Section chief or department manager | −0.175 | 0.762 | 0.344 | 0.324 |
| Wage determination factors when hiring | Initial salary of standard employees | 0.343 | 0.226 | 0.335 | 0.242 |
| | Wages of standard employees who are doing the same or similar work | −0.012 | 0.181 | 0.505** | 0.189 |
| | Regional wage | −0.046 | 0.137 | −0.054 | 0.206 |
| | Minimum wage | 0.199 | 0.165 | 0.223 | 0.282 |
| | Worker's experience and ability | 0.348* | 0.140 | −0.072 | 0.178 |
| Difference or similarity of wage determination factors (baseline: same wage table as standard employees) | Different wage table from standard employees | −0.922** | 0.296 | −0.783** | 0.254 |
| | Neither of them | −0.682 | 0.355 | −0.229 | 0.327 |
| −2 log-likelihood | | 1004.357 | | 563.001 | |
| Chi-square | | 79.029*** | | 121.469*** | |
| Pseudo R2 | Cox & Snell | 0.223 | | 0.432 | |
| N | | 313 | | 205 | |

*Note*: ***p<0.001, **p<0.01, *p<0.05

table from standard employees" has a significant negative effect. Based on these findings, it is evident that establishments that utilize fixed- and non-fixed term part-time workers for tasks involving judgment, and establishments that reflect the ability and experience of part-time workers in their wages at time of hiring, tend to pay higher wages to fixed and non-fixed term of part-time workers, whereas establishments that use a different wage table from standard employees for part-time workers tend to pay lower wages.

Meanwhile, for fixed-term contract workers, "other" industries showed a significant positive effect. Among reasons for employment, "to deal with long business (or operating) hours" had a significant negative impact, and among work duties "highly specialized tasks" and "tasks requiring judgments" had significant positive effects, while "routine tasks" showed a significant negative impact. Furthermore, among wage determination factors at time of hiring, "wages of standard employees who are doing the same or similar work" shows a significant positive effect, and in terms of difference or similarity of wage determination factors, "a different wage table from standard employees" showed a significant negative effect. These findings indicate that establishments in industries that utilize few fixed-term contract workers, establishments that utilize fixed-term contract workers for duties that involve highly specialized tasks or judgments, and establishments that use the wages of standard employees in the same occupations or jobs as a reference when determining the wages of fixed-term contract workers at time of hiring tend to pay higher wages to fixed-term contract workers. Conversely, there is a tendency for establishments utilizing fixed-term contract workers to deal with long business (or operating) hours or for routine tasks, and establishments that use a different wage table from standard employees, to pay lower wages.

Interestingly, the results of analysis indicate that the wage levels of fixed- and non-fixed term part-time workers and fixed-term contract workers compared to standard employees engaged in the same work vary depending on their duties. Establishments utilizing both fixed- and non-fixed term part-time workers and fixed-term contract workers for tasks requiring judgments tend to set their wage levels close to those of standard employees. Among fixed-term contract workers, those assigned highly specialized tasks tend to be paid nearly the same wages as standard employees, while establishments utilizing fixed-term contract workers for routine tasks tend to set their wage levels much lower than those of standard employees. These findings are consistent with the results of analysis by Hirano (2009). On the other hand, in terms of the non-standard employee management policy outlined by Sato, Sano, and Hara (2003), i.e. what is referred to as "reason for employment" in this article, could not be confirmed as significant in these analysis results with the exception of these observations applying to some fixed-term contract workers.

From the standpoint of human resource management, the influence of wage determination factors at time of hiring and the difference or similarity of wage determination factors for standard and non-standard employees are noteworthy. Regarding wage determination factors at time of hiring, the wage levels of fixed- and non-fixed term part-time workers at establishments that take into account the ability and experience of workers hired are close to those of standard employees. It is likely that such establishments set wage levels for part-time workers by applying a wage system with ability and skill level as criteria, and raise their wages as ability develops so their wage levels are close to those of standard employees. As for fixed-term contract workers, it is evident that wage levels at establishments that take into account the wages of standard employees engaged in the same or similar jobs tend to be close to those of standard employees. Regardless of whether the wage determination factors are ability, duties, or performance, the wages of standard employee engaged in the same work is a criterion for fixed-term contract workers' wage levels at time of hiring at least, and this is considered a reason their wage levels are close to those of standard employees.

Furthermore, it is an important point that with regard to difference or similarity to standard employees' wage determination factors, for fixed and non-fixed part-time workers and fixed-term contract workers alike, establishments that use a different wage table from standard employees set non-standard employees' wages much lower compared to standard employees than establishments that apply the same wage tables as standard employees. If standard and non-standard employees' wages are managed according to different wage tables,

the wage determination factors applied are likely to be different even if they are engaged in the same work. Under these circumstances, it can be difficult to set or adjust non-standard employees' wage levels to the same levels as those of standard employees. From these analysis results, it can be inferred that the difference or similarity of standard and non-standard employees' wage determination factors can rather influence the wage levels of non-standard employees than these factors.

However, it should be noted that difference or similarity of wage determination factors may reflect employment systems for non-standard employees (whether or not there are relocations, etc.). Regarding human resource management of non-standard employees, factors such as duties and promotion to positions are included in the analysis, but transfer and relocation are not considered. If both employment systems and wage determination factors are the same as for standard employees, wage levels will naturally tend to be higher. In order to carefully examine the influence of difference or similarity of wage determination factors compared to standard employees, factors related to wage systems such as non-standard employees' employment systems (whether or not there are relocations, etc.) also ought to be taken into account.

## IV. Analysis 2: Wage levels of part-time workers

### 1. Data and samples

In Analysis 2, the results of Analysis 1 were reviewed using data from the establishment survey section of the "Survey on Part-Time Workers" (hereinafter, Survey 2) conducted by JILPT in June 2010. Survey 2 was distributed to 10,000 establishments with five or more regular employees nationwide, and 3,042 responses were received. In this survey, standard employees are defined as "so-called regular workers" and part-time workers are "workers other than standard employees, including part-time workers, *arubaito* (part-time workers, often students), junior or associate employees, entrusted, temporary or limited-time contract workers whose prescribed weekly working hours are shorter than those of standard employees."

The sample to be analyzed consists of establishments that employ both standard employees and part-time workers and have part-time workers whose duties (tasks and responsibility) are nearly the same as those of standard employees, excluding those that did not respond to the item on industry. The resulting sample size for analysis was 160. The main attributes of the sample were, in terms of industry, manufacturing as the most common category with 21.3%, followed by medical, health care and welfare with 16.9%, wholesale and retail trade with 13.1%, and service with 12.5%. The responses for number of employees were: 5–29 employees 22.5%, 30–99 employees 40.6%, 100–299 employees 33.8%, 300 employees or more 3.1%, with establishments with 100 employees or fewer accounted for 63.1%. Establishments with in-house labor unions accounted for 33.1%. In terms of occupations for which establishments employ part-time workers, the most frequent response was professional and technical occupations with 18.8%, followed by office work with 18.1%, production process and labor with 17.5%, service with 13.1%, and sales with 11.3%.

### 2. Descriptive Analysis

Table 6 shows the wage levels of part-time workers whose duties are nearly the same as those of standard employees; the percentage of establishments where wages of part-time workers are equal to or higher than those of standard employees is 27.9%, and when establishments where wages are 80% those of standard employees are included, the total is 60.6%. Table 7 compares wage levels of part-time workers whose duties are nearly the same as standard employees, according to difference or similarity of wage determination factors. Survey 2 gave three choices with regard to difference or similarity of wage determination factors: "Pay based on the same calculation criteria used for standard employees," "Pay based on criteria different from those of standard employees, but some calculation factors are the same," and "Pay based on calculation factors different from that used for standard employees." When tabulating, responses were divided into (1) same calculation factors as standard employees and (2) different calculation factors from standard employees

Table 6. Wage levels of part-time workers whose duties are nearly the same as those of standard employees

(%)

| | Part-time workers |
|---|---|
| Nearly the same as or higher than standard employees' wages | 27.9 |
| More than 80% of standard employees' wages | 32.7 |
| Between 60% and under 80% of standard employees' wages | 30.6 |
| Between 40% and under 60% of standard employees' wages | 7.5 |
| Less than 40% of those of standard employees' wages | 1.4 |
| N | 147 |

*Notes*: 1. Wage levels are calculated on an hourly basis.
2. Tabulation excludes establishments that did not respond to this question.

Table 7. Wage levels of part-time workers whose duties are nearly the same as those of standard employees: Difference or similarity of wage determination factors

(%)

| | Same calculation factors as standard employees | Different calculation factors from standard employees |
|---|---|---|
| Nearly the same as or higher than standard employees' wages | 37.8 | 24.7 |
| More than 80% of standard employees' wages | 45.9 | 27.8 |
| Between 60% and under 80% of standard employees' wages | 16.2 | 37.1 |
| Between 40% and under 60% of standard employees' wages | 0.0 | 8.2 |
| Less than 40% of those of standard employees' wages | 0.0 | 2.1 |
| Wage level score | 4.2 | 3.6 |
| N | 37 | 97 |

*Notes*: 1. Wage levels are calculated on an hourly basis.
2. Tabulation excludes establishments that did not respond to this question.
3. The wage level score for workers whose average wages are calculated at less than 40% of standard employees' wages = 1, between 40% and under 60% = 2, between 60% and under 80% = 3, more than 80% = 4, and nearly the same as or higher than standard employees' wages = 5.

for purposes of comparison, with a focus on difference or similarity of calculation factors used for standard employees and part-time workers.

These results show that the percentage of establishments with wage levels nearly the same as or higher than standard employees' wages is 37.8% of those where wage calculation factors are the same as standard employees and 24.7% of those where wage calculation factors are different, and when those with wages 80% or more of standard employees are included, the corresponding percentages of establishments are 83.7% (same factors as standard employees) and 52.5% (different from standard employees). The wage level score for workers whose average wages are calculated at less than 40% of standard employees' wages = 1, between 40% and under 60% = 2, between 60% and under 80% = 3, more than 80% = 4, and nearly the same as or higher than standard employees' wages = 5, and the average scores were 4.2 (same factors as standard employees) and 3.6 (different from standard employees). Survey 2, as well, found that at establishments with the same wage determination factors as standard employees, the wage levels tend to be closer to standard employees' wages, and at establishments with different wage determination factors from standard employees, wage levels tend to be significantly lower than standard employees' wages.

## 3. Statistical analysis

(1) Variables

The explained variable is wage levels when compared to standard employees engaged in nearly the same duties. As in the calculation of wage level score, the larger the number, the higher the wage levels (closer to standard employees' wage levels): less than 40% of standard employees' wages = 1, between 40% and under 60% = 2, between 60% and under 80% = 3, more than 80% = 4, and nearly the same as or higher than standard employees' wages = 5, and these scores were made into variables.

The attributes of the establishment, utilization of part-time workers, and wage management of part-time workers are set as the explanatory variables. First, the attributes of establishments consist of three: industry, number of employees (total of standard and non-standard employees), and presence or absence of labor union. "Industry" is assigned dummy variables for wholesale and retail trade, medical, health care and welfare, service, and others, respectively, with manufacturing as the baseline value. "Number of employees" is assigned dummy variables for 30–99 employees, 100–299 employees, and 300 employees or more, with 5–29 employees as the baseline value. "Presence or absence of labor union" is assigned dummy variables of 1 when an establishment has labor union and 0 when it does not.

Utilization of part-time workers is classified into three categories: occupation for which part-time workers are most commonly utilized, term of labor contract, and employment systems. "Occupation for which part-time workers are most commonly utilized" is assigned dummy variables for office work, sales, service, production process and labor positions, and others, respectively, with specialized and technical positions as the baseline. "Term of labor contract" is assigned dummy variables of 1 when there is no fixed-term labor contract and 0 when there is one. "Employment systems" is assigned dummy variables of 1 when there are part-time workers who have nearly the same duties and the same employment systems (whether or not there are relocations, etc.) as standard employees, and 0 when there are not.

Wage systems of part-time workers was analyzed in terms of the wage determination factors, and difference or similarity to those of standard employees. In Survey 2, regarding the wage determination factors of part-time workers, basic wages (basic salary) are categorized as "ability-based wages (where workers' job abilities are criteria)" "duty-based wages (difficulty of workers' duties)," "results/performance-based wages (where workers' performance is a criteria)," and "living wages (wages based on living expenses)" (multiple answers possible), with dummy variables assigned for ability-based wages, duty-based wages, results/performance-based wages, and living wages. "Difference or similarity of wage determination factors" is assigned dummy variables of 1 when factors used for calculation are different from those of standard employees and 0 when they are the same.

(2) Results of analysis

An ordered probit analysis was carried out with wage levels compared to standard employees engaged in nearly the same duties as the explained variable, and industry, number of employees, presence or absence of labor union, occupation for which part-time workers are utilized, term of labor contract, employment systems, wage determination factors, and wage determination factors' difference or similarity to those of standard employees as explanatory variables.

The results of analysis are shown in Table 8. The analysis found that "no fixed-term labor contract" showed a significant positive effect, albeit only at the 10% level. In addition, with regard to wage determination factors' difference or similarity to those of standard employees, "factors used for calculation are different from those of standard employees" showed a significant negative effect. These findings indicate that establishments that utilize part-time workers without fixed-term labor contracts tend to set higher wage levels, whereas those where factors used for calculation are different from those of standard employees tend to set wage levels lower. While the sample size is small and the data is limited, the results of analysis reconfirmed

Table 8. Determinants for wage levels of part-time workers with nearly the same duties as standard employees

| | | Unstandardized coefficient | Standard error |
|---|---|---|---|
| Industry (baseline: manufacturing) | Wholesale and retail trade | −0.062 | 0.483 |
| | Medical, healthcare and welfare | 0.182 | 0.461 |
| | Service industry | 0.556 | 0.473 |
| | Others | 0.076 | 0.388 |
| Number of employees (baseline: 5–29 employees) | 30–99 employees | 0.178 | 0.292 |
| | 100–299 employees | 0.371 | 0.308 |
| | 300 employees or more | 0.156 | 0.621 |
| Labor union | Presence=1, Absence=0 | −0.145 | 0.231 |
| Occupation for which part-time workers are most commonly utilized (baseline: specialized and technical occupations) | Office work | −0.360 | 0.384 |
| | Sales | −0.619 | 0.598 |
| | Service | 0.081 | 0.370 |
| | Production process and labor | −0.406 | 0.447 |
| | Others | −0.288 | 0.347 |
| Employment contract term for part-time workers | (Non-fixed term=1, fixed term=0) | 0.530† | 0.290 |
| Employment systems for part-time workers | (Workers with same systems as standard employees present=1, absent=0) | −0.050 | 0.136 |
| Part-time workers' wage determination factors | Ability-based wages | −0.294 | 0.222 |
| | Duty-based wages | 0.132 | 0.231 |
| | Results/performance-based wages | 0.263 | 0.264 |
| | Living wages | −0.201 | 0.316 |
| Wage determination factors' difference or similarity to those of standard employees (calculation factors are different from those of standard employees=1, same factors=0) | | −0.661** | 0.251 |
| −2 log-likelihood | | 307.817 | |
| Chi-square | | 35.018* | |
| Pseudo R2 | Cox & Snell | 0.233 | |
| N | | 132 | |

*Note*: ***p<0.001, **p<0.01, *p<0.05, †p<0.1

those of Analysis 1, that is, when wage determination factors for standard and non-standard employees differ, the wage levels of non-standard employees tend to be considerably lower.

## V. Conclusion

This article has examined the wage levels of non-standard employees engaged in the same work as standard employees, from the perspective of human resource management. Specifically, the impact of wage determination factors applied to non-standard employees, and difference or similarity with standard employees on wage levels of non-standard employees engaged in the same work as standard employees, was examined using data from multiple establishment surveys conducted in 2010.

Analysis 1 found that for both fixed- and non-fixed term part-time workers and fixed-term contract workers, wage determination factors' difference or similarity to those of standard employees affected the wage levels of the employment status. Establishments that apply different wage scales and tables from standard employees for fixed- and non-fixed term part-time workers and fixed-term contract workers tend to have wage levels much lower than those of standard employees, compared to establishments that apply the same wage scales and tables. Similarly, Analysis 2 showed that establishments where wages for part-time

workers are calculated based on factors different from those of standard employees pay part-time workers wages much lower than the wage levels of standard employees, compared to establishments that calculate wages based on the same factors.

From these findings, it can be inferred that when establishments implement wage management differently for standard and non-standard employees, the wage determination factors applied differ, even if employees are engaged in the same work. It is, therefore, difficult for these establishments to set and adjust wages to the same levels as those of standard employees, and to reduce wage disparities between standard and non-standard employees. Conversely, to reduce wage disparities between standard and non-standard employees engaged in the same work, it is necessary to apply the same wage management to non-standard employees as standard employees.

However, close attention must be paid to the limitations of the analysis results in this paper. This paper examines differences in wage levels between standard and non-standard employees engaged in the same work, and does not examine implementations of equal or balanced/proportional treatment. The data used for the analysis are all from establishment surveys conducted in 2010, and may differ from the circumstances of non-standard employee management as of 2018. In addition, the robustness and reliability of analysis need to be improved. In the future, while addressing these issues, it is necessary to study not only basic salary levels but also the full realities of balanced/proportional treatment including salary increases, bonuses, allowances and benefits, and their determinants. In doing so, it is also necessary to consider relationships among equal or balanced/proportional treatment, skill development and career support, and systems for non-standard employees' transitioning to standard employees.

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**Notes**

1. The non-standard employees discussed in this article are limited to directly employed workers, and do not include dispatched workers or independent contractors.
2. Non-standard employees' workforce integration (conversion to part of the core workforce) consists of qualitative workforce integration (Takeishi 2003), in which the work of non-standard employees and standard employees overlaps, and quantitative workforce integration (Honda 2001), in which the percentage of non-standard employees in the company is increased. The workforce integration discussed in this article is in the former category.

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# The Latent Structure of the Japanese Labor Market and the Type of Employment: Latent Class Analysis with Finite Mixture Model

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This paper aims to present the "latent" structure of the labor market and clarify the impact of the type of employment on wage disparities. Based on the Employment Status Survey (2002), the results demonstrates that the Japanese labor market is not a single entity, nor is it composed of more than three segments, but consists of two heterogeneous segments corresponding to different wage-determining systems. The type of employment does not directly determine wage level, but affects wages by choosing the wage-determining systems. The division line of these two segments does not exactly coincide with the division line by regular/non-regular employees: regular employees span two different wage-determining systems, while all non-regular employees follow a single, more disadvantaged wage-determining system. This finding prompts a reconsideration of the common view that the Japanese labor market is prevailingly divided into regular and non-regular employees. This structure can be regarded as being continuous since the 1980s, implying that non-regular employment has expanded in line with the existing division and has contributed to maintaining it in turn.



## I. Introduction

### 1. Type of employment, quality of jobs, and latent structure

The rise of nonstandard employment has been a commonplace in most developed economies, and this trend raises a concern for the quality of jobs. Nonstandard types of employment are not necessarily meant to be low quality of jobs, but it has been clarified that the quality of jobs actually has a strong relationship with type of employment in many countries (Kalleberg et al. 2000; Kambayashi and Kato 2016).

Japan is known as a country where the relationship between type of employment and job quality is direct and straightforward (OECD 2019). It is widely believed that the Japanese labor market is divided into two distinctive categories, "regular employees" and "non-regular employees," and that they directly link to job quality. "Regular employees" and "non-regular employees" are the terms used in Japan to refer to standard and nonstandard types of employment, particularly with connotations that are deeply rooted in its employment systems (Gordon 2017; Kambayashi 2013).[1] Regular employees are considered as members of the corporate

"community" in the traditional Japanese employment system, while non-regular employees are those who are excluded from it (Inagami and Whittaker 2005; Osawa 2001). This means that regular employees enjoy higher wages with career advancement within a company, whereas non-regular employees earn low wages without any prospects for pay increases and work with no job security. These disparities between the two categories have attracted much attention and has become a major policy issue for the government (OECD 2019). It is widely believed that the "type of employment" is the most significant factor dividing the labor market, directly determining the quality of jobs.

However, this article challenges the view above and argues that categories of regular and non-regular employees are not the most significant division in the Japanese labor market. In fact, there is a hidden structure in the labor market that we cannot reach if we hold on to the dichotomy of regular and non-regular employment. This invisible "latent structure" can be obtained with an analytical method using a latent class analysis.

A "latent class" is a structure that is estimated endogenously from the data rather than defined by certain observable variables. Researchers have tried to identify segments of "good jobs" and "bad jobs," suggested by dual labor market theory, using variables such as industry and occupations. This approach did not work effectively due to the problem of inaccurate classification and selection biases. However, with a latent class approach, segments can be estimated so that they best fit to the data, without a prior choice of criteria by the analyst (Dickens and Lang 1985). The results prompt us to reconsider the widely promulgated view of the Japanese labor market: the division between regular and non-regular employment.

In defining the quality of jobs, this article focuses on "wage-determining systems." These are functions that define how each individual's attributes determine wages, and are represented by Mincer-type wage equations. Two persons with the same attributes would have different wage profiles, if they are assigned to different wage-determining systems, and therefore to different segments in the labor market in terms of job quality.

This article demonstrates three findings. First, the Japanese labor market consists of two heterogeneous wage-determining systems, and not a single entity or more than three. Second, the "type of employment" does not directly determine wage level, but affects wages by choosing the wage-determining system. Third, the division line of these two segments does not exactly coincide with that of regular and non-regular employees. In fact, the division line exists within regular employees, and this situation has been continuous in the labor market since the 1980s (Ishikawa and Dejima 1994). By re-discovering this dual structure, this article presents a new perspective on how we can understand regular/non-regular employees, and the employment system in Japan.

## 2. The effect of type of employment on wage differentials

(1) "Regular" and "non-regular" employment in Japan

How are the categories of "regular/non-regular employees" defined in Japan? Kambayashi (2013) explores three different ways of categorizing nonstandard employment in official statistics in Japan: by working hours, by length of labor contract, and by title at workplace. What people mean by "regular/non-regular employees" corresponds to the categorization defined by title at workplace, namely, whether they are called either "regular employees" or "non-regular employees." It seems tautological but explains exactly how situations are in Japan. The categorization by title at workplace strongly determines job quality including working conditions such as wages and job security (Kambayashi 2013). However, this categorization does not have any concrete criteria to differentiate regular and non-regular form of employment. In other words, there is no clear explanation of what determines whether the person is called as either a regular or non-regular employee. Sometimes they work for similarly long hours, both with open-ended contracts, and even engage in exactly the same tasks next to each other in the same workplace (Nitta 2011; Osawa 2001). Despite such

situations, everyone seems to understand how they should identify themselves, as either regular or non-regular employees, and official statistics that quantify types of employment rely on these self-identified answers (Nitta 2011). In this respect, we could argue that the categories of regular/non-regular employees are socially constructed. Nevertheless, some research found that the categorization by title at workplace, rather than the work contract or the working hours of the employee, is the key element that strongly influences the wage differentials (Kambayashi and Kato 2016).

(2) Wage-determining systems and the criteria for the divide

There are two approaches in research on wage differentials between regular/non-regular employees: the first is to focus on wage levels, and the second is to focus on wage-determining systems. The first approach is the "neoclassical" view, which assumes a single labor market with a single mechanism of wage determination. Wage differentials can be explained as the results of having different individual attributes such as education, tenure, and experience, among which the type of employment is included. The second approach can be called the "segmented labor market" view, which considers wage differentials to be the result of different wage-determining systems. This approach maintains that wage differentials cannot be explained by workers' attributes, since the returns for them are different between regular and non-regular employees.

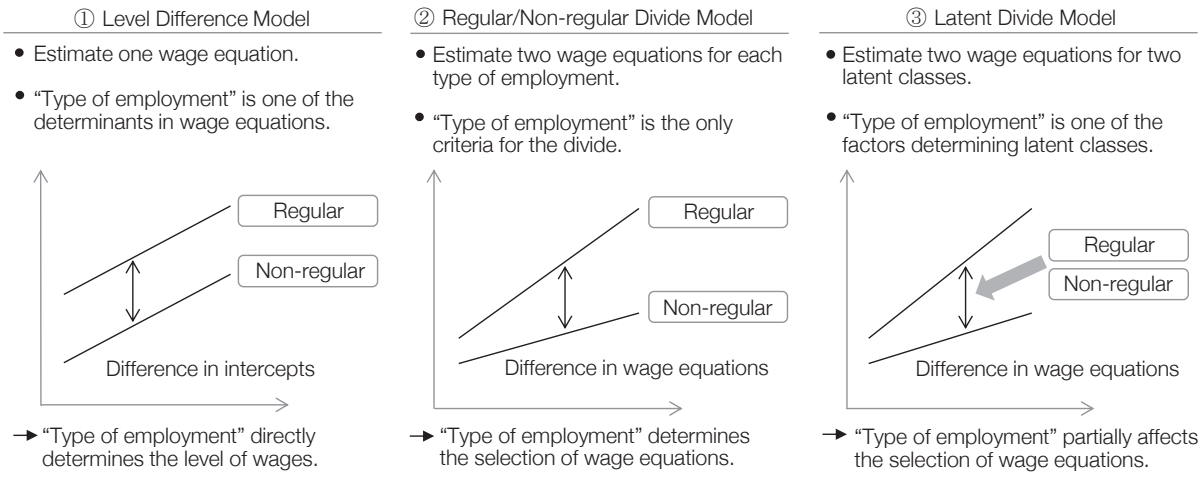
Assuming that we adopt the "segmented labor market" view, the next question is what should be the criteria for the divide. This approach draws on "dual labor market" theory, which considers the labor market to consist of two heterogeneous segments: one with better pay and favorable working conditions (the primary sector), and the other with inferior pay and precarious conditions (the secondary sector) (Doeringer and Piore 1971; Berger and Piore 1980). The question of how we should identify the two sectors empirically has been a controversial issue (Hodson and Kaufman 1982). Some have attempted to split jobs in a sample into two sectors on the basis of occupation and industry, but this approach has been criticized for inaccuracy. Any industries or occupations include many different jobs and positions within them, which results in anomalies in classification (Dickens and Lang 1985). A considerable advance to this problem was made by Dickens and Lang (1985), who developed an approach to estimate two segments endogenously as "latent classes," rather than having researchers determine two segments using specific criteria. With this approach, analysts can estimate two segments and two wage equations simultaneously, in the way they best fit to the actual data.

This approach is useful in analyzing the Japanese case, as we can easily take many factors into account to determine the structure of the labor market without knowing which variables are more important. The dualism in the Japanese labor market has evolved over time, involving several key factors such as company size, gender, and type of employment (Gordon 2017). The "dualism by company size," i.e., disparities between large companies and small or medium-sized companies, was a major issue in the 1960s (Ujihara 1966), and dualism was seen in gender wage differentials in the 1980s (Horn-Kawashima 1985; Osawa 1993). More recently it has been applied to regular/non-regular disparities (Genda 2008, 2011; Sato and Imai 2011; Gordon 2017). By adopting latent class analysis, we will be able to assess the impact of these varied factors on the current dualism in the labor market.

(3) Three analytical models

Three analytical models to estimate the structure of the labor market, corresponding to the discussion above, are presented in Figure 1. In these models, the wage-determining systems are specified as wage functions.

The first is the "level difference model," which estimates a single wage equation, using the type of employment as an explanatory variable. In this model, type of employment directly determines the wage level, with the coefficient accounting for the average wage differences for two groups. The second is the "regular/non-regular divide model," which assumes two different wage-determining systems corresponding to each type of employment. The data is divided into two groups, solely based on the type of employment.




*Source*: Created by the author.

Figure 1. Three models for the labor market structure

The third is the "latent divide model." This model also assumes two different wage equations, but they do not correspond to the dividing line of regular/non-regular employment. Instead, two segments are estimated endogenously as latent classes, using type of employment together with other factors affecting the class assignment (Dickens and Lang 1985; Ishikawa and Dejima 1994). The third model also can be extended into a model with more than three segments.

In the next section, I will analyze wage data using these three models and evaluate which would be the best to explain actual data. The results will tell us how we can understand the structure of the labor market as well as the impact of the type of employment on wages.

## II. Data, variables, and models

### 1. The data

This article uses the anonymized data of the Employment Status Survey (2002) by the Ministry of Internal Affairs and Communications, with the sample limited to both male and female workers from ages 20 to 59, excluding company directors, the self-employed, and family employees. Workers not working regularly or working less than 200 days a year are also excluded. The sample size to be analyzed is 243,632, for which descriptive statistics are reported in Table 1. Note that all estimates in this paper are weighted by the sample multiplier.

### 2. Variables

Table 2 summarizes the variables used in the four models (the three models presented in Figure 1, plus a baseline model). All models include Mincer-type wage equations with exactly the same variables. The dependent variable is the log of annual income,[2] and its distribution was checked to see if it was normal. Explanatory variables for the wage equations include[3] "education (college or above)," "tenure (years of service)" and its square term, "experience"[4] and its square term, "company size," "gender," "marital status," and "working hours."[5]

The difference among these models lies in how to locate the type of employment. Model 0 is the baseline model and does not contain type of employment in any equation. Model 1, the level difference model, includes type of employment in the single wage equation. Model 2, the regular/non-regular divide model, includes type

Table 1. Sample from the Employment Status Survey (2002)

| | | Gender | | Total |
|---|---|---|---|---|
| | | Male | Female | |
| Sample size | | 143,467 | 100,165 | 243,632 |
| Weighted by sample multiplier | | 17,651,543 | 11,441,728 | 29,093,272 |
| Proportion | | 60.7% | 39.3% | — |
| Age | 20–29 | 22% | 26% | 23% |
| | 30–39 | 29% | 23% | 27% |
| | 40–49 | 25% | 25% | 25% |
| | 50–59 | 25% | 26% | 25% |
| | Average | 39.8 | 39.6 | 39.7 |
| | s.d. | 10.7 | 11.2 | 10.9 |
| Education | College or above | 34% | 14% | 26% |
| | Middle/High/Vocational Schools | 66% | 86% | 74% |
| Tenure (Years of services) | Average | 14.4 | 8.9 | 12.2 |
| | s.d. | 10.8 | 8.4 | 10.3 |
| Experience (Outside the company) | Average | 6.4 | 12.0 | 8.6 |
| | s.d. | 8.5 | 10.9 | 9.9 |
| Company size | Large (employees 300+) | 51% | 41% | 47% |
| | Medium/Small (employees <300) | 49% | 59% | 53% |
| Marital status | Married | 66% | 58% | 63% |
| | Unmarried | 34% | 42% | 37% |
| Type of employment | Regular Employees | 94% | 57% | 80% |
| | Non-regular Employees | 6% | 43% | 20% |

*Source*: Anonymized data of the Employment Status Survey (2002), Ministry of Internal Affairs and Communications.

Table 2. Variables used in the model

| Variables \ Models | | ⓪ Baseline Model | ① Level Difference Model | ② Regular/Non-regular Divide Model | | ③ Latent Divide Model | |
|---|---|---|---|---|---|---|---|
| | | Wage eq. (X) | Wage eq. (X) | Wage eq. (X) | Class eq. (Z) | Wage eq. (X) | Class eq. (Z) |
| Intercepts | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Education | College or above dummy | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Tenure | Years of services | ✓ | ✓ | ✓ | | ✓ | |
| | Years of services (squared) | ✓ | ✓ | ✓ | | ✓ | |
| Experience | Outside the company | ✓ | ✓ | ✓ | | ✓ | |
| | Outside the company (squared) | ✓ | ✓ | ✓ | | ✓ | |
| Company size | Large company (employees 300+) dummy | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Gender | Female dummy | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Marital status | Married dummy | ✓ | ✓ | ✓ | | ✓ | ✓ |
| | Female * Married | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Working hours | Working hours per week | ✓ | ✓ | ✓ | | ✓ | |
| Type of employment | Non-regular employees dummy | | ✓ | | ✓ | ✓ | ✓ |

*Source*: Created by the author.

of employment in the classification equation but not in the wage equations. Model 3, the latent divide model, also includes type of employment in the classification equation, but together with other covariates. Note that this model also puts type of employment into wage equations so that it could affect the wage level within each

class.

For the covariates in the classification equation of Model 3, education and company size are included, given that these two factors have played an essential role in the Japanese employment system (Ujihara 1966; Ishikawa and Dejima 1994). Gender and marital status are included as well, as these two factors are also critical for explaining the composition of non-regular employees (Horn-Kawashima 1985; Osawa 2001).[6] On the other hand, tenure and experience should not be included, as these variables do not influence the allocation of classes when people first enter the labor market (Ishikawa and Dejima 1994). Model 0 and Model 1 both estimate a single wage equation, while Model 2 and Model 3 estimate two wage equations and one classification equation. Model 3 can be extended into models with more than three classes.

## 3. Model and hypotheses

The model used in this paper is called a Finite Mixture Model (FMM), a kind of latent class analysis. This is the same model as that referred to as a "switching model with unknown regimes" in Dickens and Lang (1985) and Ishikawa and Dejima (1994).[7]

In specifying a FMM, the analyst needs to set the number of latent classes to be estimated. The model will then consist of wage equations, the number of which is equal to the number of latent classes, as well as one classification equation that determines the allocation of individuals to the estimated classes. The likelihood function is derived from these two kinds of equations, and the model is simultaneously estimated with Maximum Likelihood Estimation (MLE).

The detailed specification is presented below (Greene 2012; Vermunt and Magidson 2013). The subscript $i$ for each variable represents an individual and the subscript $k$ represents the class to be assigned.

Wage equations of individual $i$ in class $k$ are expressed as:

$$f(lnW_i|k)=X_i\beta_k+u_{ki} \tag{1}$$

where $W_i$ is the wages for each individual, $X_i$ is a vector for explanatory variables, $\beta_k$ is a vector for parameters, $u_{ki}$ is an error term (normally distributed), and $\sigma_k^2$ is the variance of error terms.

The classification equation, determining the probabilities of individual $i$ assigned to class $k$, is:

$$y_{ki}{}^*=Z_i\gamma_k+\varepsilon_{ki} \tag{2}$$

where $y_i{}^*$ is a latent variable determining class assignment, $Z_i$ is a vector for explanatory variables, $\gamma_k$ is a vector for parameters, and $\varepsilon_i$ is an error term.

We have two random variables of wage ($lnW_i$) and probability of class assignment ($y_{ki}^*$), and the marginal density of individual $i$ can be considered as a mixture of joint distribution, consisting of conditional densities (1) weighted by classification probabilities (2), which can be expressed as follows:

$$f(lnW_i|Z_i, X_i)=\sum_{k=1}^{K} Pr\left(class_i=k|Z_i\right)\cdot f(lnW_i|class_i=k, X_i) \tag{3}$$

To parameterize classification probabilities (2), conditioned on the individual characteristics (i.e., covariates $Z_i$ in equation (2)), we assume multinominal distribution on $\varepsilon_i$, and then equation is expressed as follows:

$$Pr\left(class_i=k|Z_i\right)=Pr\left(\varepsilon_i>-Z_i\gamma_k|Z_i\right)=\frac{\exp\left(Z_i\gamma_k\right)}{\sum_{k=1}^{K}\exp\left(Z_i\gamma_k\right)} \tag{4}$$

Similarly, to parameterize the wage equation, conditioned on class $k$ (1), we assume a normal distribution for $u_{ki}$, and the equation can be expressed as follows, using the variance of the error term $\sigma_k^2$:

$$f(lnW_i|class_i = k, X_i) = N\left(X_i\beta_k, \sigma_k^2\right) = \frac{exp\left[-\frac{1}{2}\left(lnW_i - X_i\beta_k\right)^2/\sigma_k^2\right]}{\sigma_k\sqrt{2\pi}} \quad (5)$$

where $k$=1, 2, ..$K$.

Therefore, by substituting these two parameterized equations (4) and (5) into equation (3), the marginal density of individual $i$ is defined as:

$$f(lnW_i|Z_i, X_i) = \sum_{k=1}^{K}\left\{\frac{\exp\left(Z_i\gamma_k\right)}{\sum_{j=1}^{K}\exp\left(Z_i\gamma_j\right)} \cdot \frac{exp\left[-\frac{1}{2}\left(lnW_i - X_i\beta_k\right)^2/\sigma_k^2\right]}{\sigma_k\sqrt{2\pi}}\right\} \quad (6)$$

Then, the log-likelihood is defined as:

$$lnL = \sum_{i=1}^{n} ln\left[\sum_{k=1}^{K}\left\{\frac{\exp\left(Z_i\gamma_k\right)}{\sum_{j=1}^{K}\exp\left(Z_i\gamma_j\right)} \cdot \frac{exp\left[-\frac{1}{2}\left(lnW_i - X_i\beta_k\right)^2/\sigma_k^2\right]}{\sigma_k\sqrt{2\pi}}\right\}\right] \quad (7)$$

Using this log-likelihood function (7) with observed data of $lnW_i$, $X_i$, $Z_i$, we can simultaneously estimate parameter $\beta_k$, $\gamma_k$, as well as the variance $\sigma_k^2$, with MLE. Class assignments are influenced by the individual characteristics as well as by the fit to wage equations.

In Model 0 and Model 1 in Table 2, wage equations are reduced to a single equation, with the classification equation disappearing due to the equality constraint of parameters, $\beta_1$=$\beta_2$. In Model 2 and Model 3, the model consists of two different wage equations and one classification equation, with parameters $\beta_1 \neq \beta_2$. Constraints of perfect classification according to the type of employment are imposed on Model 2, while there is no constraint on Model 3.[8]

Three questions will be addressed using the model specified above. First, which of the three models in Figure 1 will be the best to explain the impact of type of employment on wages? Second, if we adopt models with two or more classes, what characteristics do these wage equations have? Third, which factors determine the classification of individuals to latent classes? Answering these questions will help to clarify the latent structure of the labor market in Japan.

## III. The results

### 1. Which model best explains the data?

The methods to evaluate the validity of FMM can be broadly divided into two categories: the first employs testing procedures, while the second uses information criteria (IC). While the Likelihood Ratio Test is a standard procedures for MLE in the first category, the method cannot be applied to FMM due to the lack of regularity conditions (Chen et al. 2001; Morduch and Stern 1997; Günther and Launov 2012).[9] However, we can rely on the approaches in the second category using information criteria. Based on the discussion of Tuma and Decker (2013) that provide simulation studies of various criteria, BIC and AIC3 were chosen as evaluation criteria in this paper.[10]

The first question is which of the three models in Figure 1 can best explain the data to capture the effect of type of employment on wages. Table 3 shows the estimation results for the models specified in Table 2.[11] The results shows that the Model 3 can best explain the data among the three models. Model 1, the level difference model, has better goodness of fit, compared to Model 0, the baseline model. Similarly, Model 2, the regular/non-regular divide model, also has better goodness of fit compared to Model 0. These results tell us that the

Table 3. Results of model estimations (goodness of fit)

| Models | | ⓪ Baseline Model | ① Level Difference Model | ② Regular/ Non-regular Divide Model | ③ Latent Divide Model | | |
|---|---|---|---|---|---|---|---|
| Use of "type of employment" | Wage eq. | — | ✓ | — | ✓ | | |
| | Class eq. | — | — | ✓ | ✓ | | |
| Number of wage equations | | 1 | 1 | 2 | 2 | 3 | 4 |
| LL | | −18,411,121 | −15,485,838 | −14,606,103 | −12,937,873 | −12,101,170 | — |
| AIC3 | | 36,822,277 | 30,971,715 | 29,212,282 | 25,875,841 | 24,202,493 | — |
| BIC | | 36,822,448 | 30,971,899 | 29,212,636 | 25,876,295 | 24,203,217 | — |
| (Ratio of Decrease) | | | | | (−16%) | (−6%) | — |
| Number of parameters | | 12 | 13 | 25 | 32 | 51 | 69 |
| Class errors | | 0 | 0 | 0 | 0.118 | 0.194 | — |
| $R^2$ | | 0.650 | 0.714 | 0.723 | 0.770 | 0.799 | — |

*Source*: Created by the author based on the estimation results.

type of employment has impacts on wages in both models. Comparing these two models indicates that Model 2 fits the data better, which suggests that the type of employment affects the wage through choosing different wage-determining systems rather than directly determining the wage level. Further comparison of Model 2 and Model 3 indicates that the fit significantly improves with Model 3, suggesting that the dividing line of two different wage-determining systems is not the same as the divide by the type of employment.

On adopting Model 3, it becomes necessary to answer to the question of how many segments, or different wage-determining systems, should be assumed. The calculation did not converge when more than four classes are assumed. Both BIC and AIC3 are better in a three-class model than in a two-class model, but the difference is not as large as that of the change from one-class model to two-class model. Since a large sample is used in this analysis, which means it tends to detect even small heterogeneity in the data, we should determine an appropriate number of classes not only by the statistical significance, but also by the substance of each class. In the next section, we will adopt a three-class model to discuss the characteristics of the estimated equations, and then consider if it is appropriate to assume the third class.

## 2. What are the characteristics of the wage equations?

Table 4 summarizes the estimation results for Model 1, the level difference model, and Model 3, the latent divide model (with three classes). The results for Model 1 should be interpreted similarly to OLS. For Model 3, the three columns on the left report the coefficients for wage equations, while the three columns on the right report the coefficients for the classification equation. The "Compositions (%)" rows show the size of each latent class: Class 1 accounts for 55%, Class 2 for 36%, and Class 3 for 9%.[12] The "Error variance" and "$R^2$" rows tell us the goodness of fit for the wage equations within each class. The error variance for Class 3 is larger than that for Class 1 and Class 2, while $R^2$ is smaller for Class 3 than Class 1 and Class 2. These two statistics suggest that Class 1 and Class 2 are cohesive segments with substantial size, while Class 3 is much smaller and less concentrated. Thus, caution is required in regarding Class 3 as an independent segment.

How can we characterize the wage-determining system for each class? Figure 2 visualizes the returns for individual attributes for each class. The upper bar graph shows the effects of education, tenure, experience, and company size. The lower graph shows the effects of gender and marital status, having unmarried males as the base category.

The wage-determining system for Class 1 has higher returns for college graduates and large premiums for working for large companies. It also has a high return for tenure but less for experience outside the company.

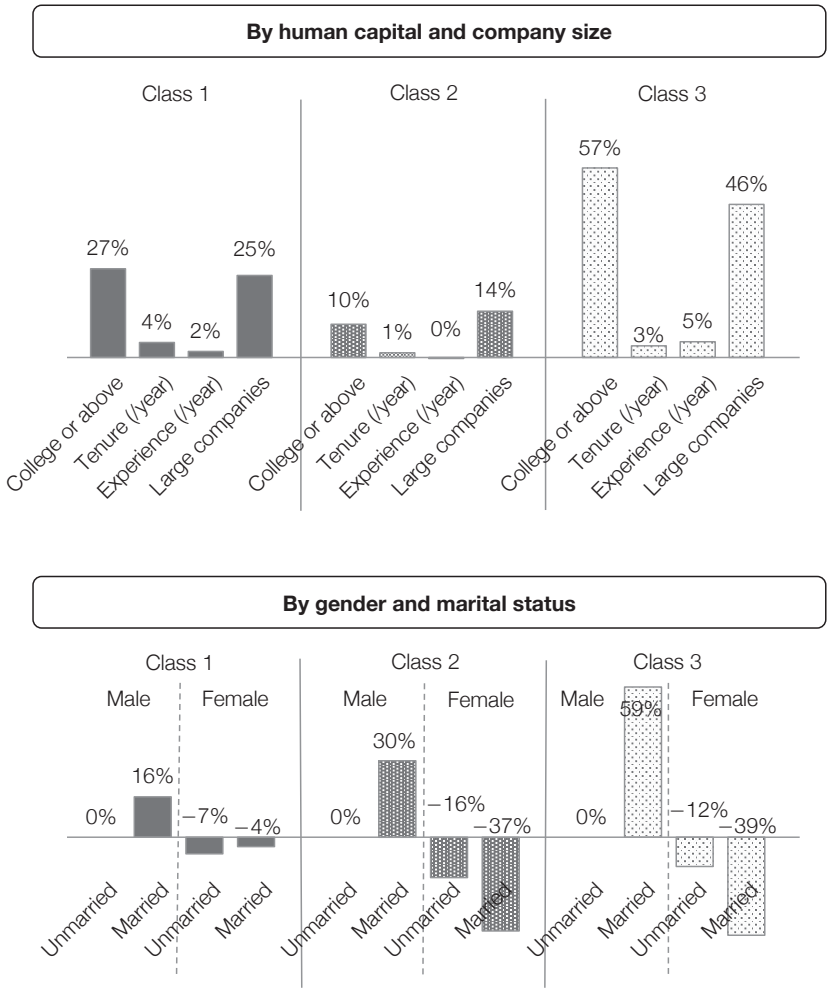
Table 4. Estimation results for Model 1 and Model 3

| | ① | ③ Latent Divide Model (Three classes) | | | | | |
|---|---|---|---|---|---|---|---|
| | Level Difference Model (One class) | Wage equation | | | Classification equation | | |
| | | Class 1 | Class 2 | Class 3 | Class 1 | Class 2 | Class 3 |
| Intercepts | 14.020 *** | 14.176 *** | 14.437 *** | 13.738 *** | 0.828 *** | 0.578 *** | −1.406 *** |
| | (0.001) | (0.001) | (0.001) | (0.003) | (0.003) | (0.004) | (0.004) |
| Human capital | | | | | | | |
| College or above dummy | 0.232 *** | 0.236 *** | 0.095 *** | 0.450 *** | 0.785 *** | −2.065 *** | 1.280 *** |
| | (0.000) | (0.000) | (0.003) | (0.002) | (0.004) | (0.008) | (0.006) |
| Tenure | 0.029 *** | 0.044 *** | 0.014 *** | 0.034 *** | | | |
| | (0.000) | (0.000) | (0.000) | (0.000) | | | |
| Tenure (squared) | 0.000 *** | 0.000 *** | 0.000 *** | −0.001 *** | | | |
| | (0.000) | (0.000) | (0.000) | (0.000) | | | |
| Experience | 0.007 *** | 0.018 *** | −0.003 *** | 0.046 *** | | | |
| | (0.000) | (0.000) | (0.000) | (0.000) | | | |
| Experience (squared) | 0.000 *** | 0.000 *** | 0.000 *** | −0.001 *** | | | |
| | (0.000) | (0.000) | (0.000) | (0.000) | | | |
| Company size | | | | | | | |
| Large company dummy | 0.288 *** | 0.220 *** | 0.130 *** | 0.378 *** | 1.339 *** | −0.722 *** | −0.617 *** |
| | (0.000) | (0.000) | (0.001) | (0.002) | (0.002) | (0.002) | (0.003) |
| Gender | | | | | | | |
| Female dummy | −0.078 *** | −0.068 *** | −0.174 *** | −0.123 *** | −0.355 *** | 0.353 *** | 0.002 *** |
| | (0.000) | (0.000) | (0.001) | (0.002) | (0.003) | (0.004) | (0.005) |
| Marital status | | | | | | | |
| Married dummy | 0.210 *** | 0.148 *** | 0.264 *** | 0.466 *** | −0.327 *** | 0.281 *** | 0.046 *** |
| | (0.000) | (0.000) | (0.001) | (0.002) | (0.003) | (0.004) | (0.004) |
| Female * Married | −0.375 *** | −0.118 *** | −0.553 *** | −0.833 *** | 0.249 *** | −0.612 *** | 0.364 *** |
| | (0.000) | (0.001) | (0.001) | (0.006) | (0.004) | (0.006) | (0.007) |
| Type of employment | | | | | | | |
| Non-regular dummy | −0.655 *** | −1.150 *** | −0.407 *** | −0.773 *** | −3.171 *** | 1.559 *** | 1.612 ** |
| | (0.000) | (0.001) | (0.001) | (0.004) | (0.011) | (0.005) | (0.010) |
| Working hours | | | | | | | |
| Working hours/week | 0.013 *** | 0.008 *** | 0.008 *** | 0.008 *** | | | |
| | (0.000) | (0.000) | (0.000) | (0.000) | | | |
| Compositions (%) | 100% | 55% | 36% | 9% | | | |
| (Regular employees) | (80%) | 55% | 21% | 5% | | | |
| (Non-regular employees) | (20%) | 1% | 15% | 5% | | | |
| Average wage (Annual income, JPY) | 3,558,501 | 5,004,009 | 2,248,559 | 2,249,571 | | | |
| Error variance | 0.170 | 0.073 | 0.121 | 0.570 | | | |
| $R^2$ | 0.714 | 0.709 | 0.718 | 0.553 | | | |
| N (weighted) | 29,067,129 | | 29,067,129 | | | | |
| Log-likelihood | −15,485,838 | | −12,101,170 | | | | |

*Source*: Created by the author based on the estimation results.
*Notes*: 1. "Compositions" are calculated as averaged probabilities of assignments to each latent class.
2. "Average wage" is the averaged predicted value of wages. JPY: Japanese yen.
3. Estimation is weighted with the sample multiplier.
*** p<0.001, ** p<0.01, * p<0.05

The penalties for being female, especially married female, are not evident. These characteristics, estimated from the data, correspond to those of the traditional "Japanese employment systems." On the other hand, the wage-determining system for Class 2 has low returns for college degree and working for large companies. The returns for tenure and experience are also negligible. These characteristics of Class 2 are similar to the image of the peripheral/secondary sector suggested by dual labor market theory. As for gender, our estimated results show that there are much larger penalties for being female, and especially married female, in Class 2.

Figure 3 shows the wage distributions for each class, having each observation assigned exclusively to one of the three classes. While there is a significant difference between the medians, the lower half of Class



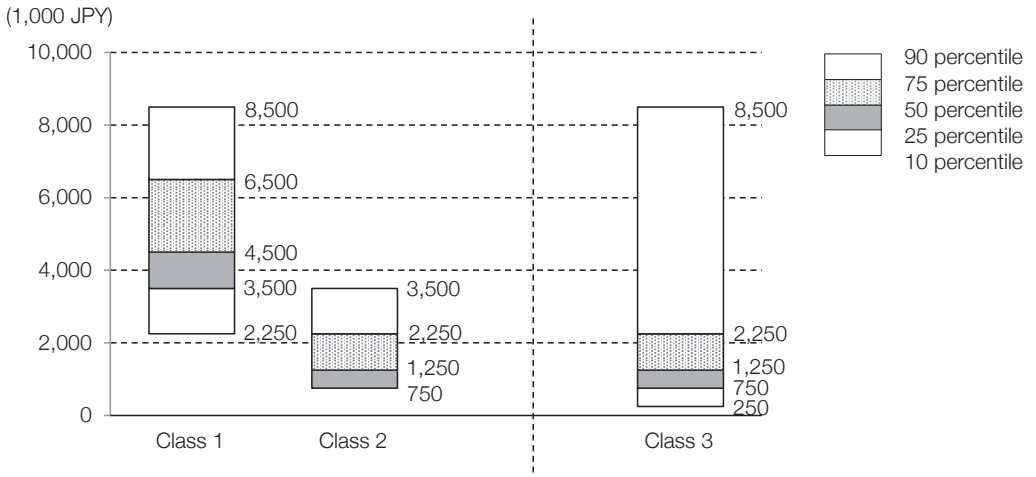

*Source*: Based on the coefficients in Table 4 .
*Notes*: 1. Estimated coefficients are converted to exponential form and displayed in %.
2. "Large companies" refer to companies with 300 employees or more.

Figure 2. Characteristics of the wage-determining systems

1 largely overlaps the upper half of Class 2. The distribution for Class 3 ranges from the lowest of Class 2 to the highest of Class 1.

Note that the type of employment is included both in the wage equations as well as in the classification equation, which means it could directly affect the wage level within each class. From the coefficients of Table 4, the wage of non-regular employees is 68% lower than regular employees in Class 1, and 33% lower in Class 2,[13] suggesting that type of employment also influences wage level within each class.

The intercepts of the wage equations can be understood as the wage level at one's entry into the labor market if we evaluate tenure and experience at zero. Although the intercept is larger in Class 2 than Class 1, the predicted wage will be higher in Class 1 than in Class 2, if we evaluate other variables at mean within each class.[14] In this case, we can consider that the initial wage level is also higher in Class 1 compared to Class 2.




*Source*: Created by the author based on the estimation results.
*Note*: Each observation is assigned to one class for which the classification probability is highest among the three.

Figure 3. Wage distributions by class

## 3. What determines the classification into two classes?

The next question will be what determines the assignment of each worker into estimated classes. To answer this question, we need to look at the effects of each variable on the probabilities of assignment, holding other variables constant. Partial Effect at Average (PEA) can be obtained as a difference between "probability of belonging to Class $k$, given the variable=1" and "probability of belonging to Class $k$, given the variable=0":

$$PEA=\Pr(class_i=k \mid Z_i\gamma, z_j=1)-\Pr(class_i=k \mid Z_i\gamma, z_j=0)$$

where $k$=1, 2..$K$, and $z_j$ is the variable for which the effect is calculated.

Table 5 shows the PEA for each variable, calculated based on the coefficients for the classification equation in Table 4.

Looking at the PEA for Class 1, type of employment has the most significant impact on the allocation to Class 1. If a person is a non-regular employee, the probability of being Class 1 decreases by 74%. Company size and education, which have been long regarded as essential factors in the dualism in Japan, increase the probability of allocation by 46% and 32%, respectively, but the effects are smaller than that of the type of employment. On the other hand, the effects of gender and marital status on class allocation, independently of other factors, are relatively small, which contradicts the common view. Since this is an important aspect to clarify the role of the type of employment, I will examine it further in the next section.

# IV. Discussion

## 1. How many segments are there in the labor market?

It is now necessary to answer a question that we have deferred so far: How many segments should we identify in the labor market? First, we can confirm that Class 1 and Class 2 are independent segments, because the class errors are small (see Table 4) and their estimated characteristics correspond to findings from other research. These two classes have much in common with those estimated by Ishikawa and Dejima (1994), who examined the structure of the labor market for regular employees in the 1980s and 1990s, using the same analytical model. They concluded that the estimated two segments correspond to those suggested by dual labor market theory: primary sector with high returns on education and tenure; and a secondary sector

Table 5. Partial Effect at Average for classification probabilities

| | | Mean | Class 1 | | | | Class 2 | | | | Class 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coef. | x=1 | x=0 | PEA | Coef. | x=1 | x=0 | PEA | Coef. | x=1 | x=0 | PEA |
| Intercepts | | | 0.828 | | | | 0.578 | | | | −1.406 | | | |
| Education | (College or above dummy) | 0.263 | 0.785 | 74% | 42% | 32% | −2.065 | 5% | 51% | −46% | 1.280 | 20% | 7% | 13% |
| Company size | (Large companies dummy) | 0.474 | 1.339 | 79% | 33% | 46% | −0.722 | 15% | 51% | −35% | −0.617 | 5% | 16% | −11% |
| Gender | (Female dummy) | 0.393 | −0.355 | 47% | 62% | −15% | 0.353 | 42% | 27% | 14% | 0.002 | 11% | 10% | 1% |
| Marital status | (Married dummy) | 0.632 | −0.327 | 52% | 65% | −13% | 0.281 | 37% | 25% | 12% | 0.046 | 11% | 10% | 2% |
| | (Female * Married dummy) | 0.230 | 0.249 | 66% | 53% | 13% | −0.612 | 20% | 37% | −17% | 0.364 | 14% | 10% | 4% |
| Type of employment | (Non-regular employees dummy) | 0.203 | −3.171 | 3% | 77% | −74% | 1.559 | 72% | 17% | 55% | 1.612 | 25% | 6% | 19% |

*Source*: Based on the coefficients in Table 4.
*Note*: PEA refers to Partial Effect at Average. In calculating the partial effects, other variables are evaluated at mean across the whole sample.

with less/no return on these factors. Our results for Class 1 and Class 2 also agree with these points. For example, education, company size, tenure, and experience have higher returns on wages in Class 1 (and the primary sector) than Class 2 (and the secondary sector), with the same order of their size of effects. With the classification equation, being male, in a large company, and a college graduate increases the probability of belonging to Class 1 (the primary sector). The question then becomes whether the third class, Class 3, can be regarded as an eligible segment.

There are broadly two perspectives maintaining that the Japanese labor market should consist of three tiers/segments rather than two. The first view suggests that an intermediate layer came to exist between regular and non-regular employees, as companies began to "internalize" some part of non-regular employment (Inagami 1999; Genda 2008). If Class 3 accords with this type of segment, the coefficients of the wage equations should fall somewhere between Class 1 and Class 2. However, the results do not support this: some coefficients are larger than Class 1, while others are even smaller than Class 2. Therefore, this perspective does not explain the results for Class 3, though the argument is most likely empirically valid.

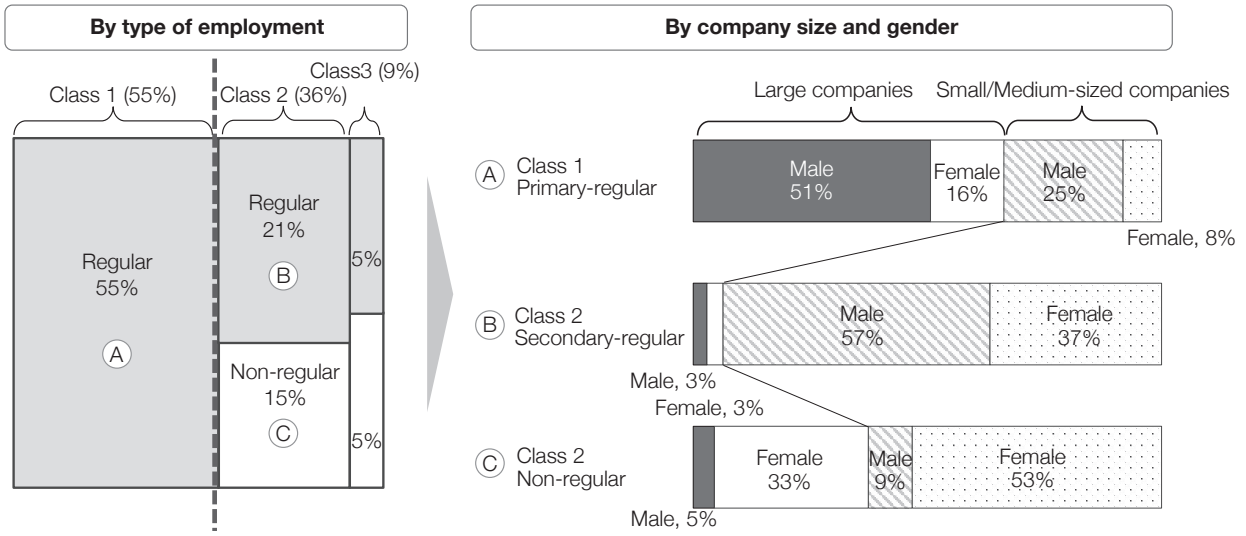
The second view is to conceptualize the third segment as being qualitatively different from the existing two. A good example of this is the well-known proposal "Japanese-style Management in a New Era" published by Nikkeiren (Japan Federation of Employers' Associations) in 1995 (Nikkeiren 1995). This report proposed that Japanese companies should manage their human resources with three different types of workforce: "long-term skill accumulation," "flexible employment," and "highly specialized skills." We can recognize the parallels between the long-term skill accumulation type and Class 1, as well as between the flexible type and Class 2. However, the estimated Class 3 does not seem to correspond to the highly specialized skills type in terms of wage level as well as the characteristics of wage-determining systems. It is reasonable to conclude that a segment of highly specialized skills type has not been emerged yet in the 2000s.

It seems more appropriate to consider the estimated Class 3 as being the residuals of Class 1 and Class 2 rather than as an independent segment, given that the goodness of fit for the wage equations are small and that the class errors are large (Table 4). This view can also explain some of the extreme values for coefficients for Class 3 (Figure 2).

Therefore, we can conclude that the Japanese labor market is not a single homogeneous entity, nor is it divided into more than three segments, but consists of two different segments, or wage-determining systems, which have continued from the 1980s and 1990s.

## 2. How does the type of employment relate to latent classes?

How does the type of employment relate to these two latent segments in the labor market? Figure 4 represents the breakdown of compositions by type of employment as well as company size and gender. The chart on the left shows that the division of the latent classes does not coincide with the division by the type of employment. Class 1 consists exclusively of regular employees, whereas Class 2 includes all non-regular




*Source*: Created by the author based on the estimation results.
*Notes*: 1. Figures in the left-hand chart represent percentages of the total.
2. Figures are based on the estimation results of the three-class model in Table 4.
3. (Right) Each observation is assigned to the one from among the three classes for which the estimated probabilities are highest.

Figure 4. Class assignment and its breakdown by attributes

employees (15% of the total) plus a significant part of regular employment (21% of the total). The division of the latent classes (the dotted vertical line in the chart) cuts through the regular employees and merges a quarter of this type with non-regular employees. These workers (segment B in the chart) are more like non-regular employees in terms of wage-determining systems despite being called "regular employees." Segment A can be called "primary-regular" and segment B can be called "secondary-regular."

Then, what kind of people are secondary-regular (B), i.e., regular employees but assigned to Class 2? The bar graph on the right shows the composition by company size and gender for each segment (A, B, C) in the chart on the left. Compositions broadly differ across segments. Segment A, primary-regular, is dominated by males, and especially those at large companies, while Segment B, secondary-regular, mostly consists of workers at small or medium-sized companies, also dominated by males. Segment C, non-regular, is mainly composed of females at both large and small or medium-sized companies. These compositions suggest that the findings by Ishikawa and Dejima (1994) identifying gender and company size as key factors in class allocation are still unchanged. It appears odd that gender has a strong relationship with class allocation, since it contradicts the findings in Table 5 that gender and marital status only have modest partial effects on allocation. The reason for this puzzle is obvious from the bar graph on the right. It shows that gender effectively exercises strong influences on class allocation through closely relating to the type of employment.[15] We can consider type of employment to be a "pipeline" that mediates women (especially married women) to the disadvantaged class in the labor market.

There is another finding regarding the influence of gender. While Ishikawa and Dejima (1994) found larger disparities between men and women in the primary sector, our results indicate more significant penalties for women (especially married women) in Class 2. It is not clear why penalties for married women are strong in Class 2. Given that the annual wages of workers allocated to Class 2 amount to around 1.25 million JPY (See Figure 3), which is limit for the spousal tax deduction, we can assume they control their working hours so that their income will not exceed it. In sum, married women are brought into Class 2 by taking employment as non-regular employees, and then choose to keep their income low, which in turn realizes severe penalties

for married women in Class 2.

### 3. How can we understand the impact of type of employment on wages?

The commonly accepted belief that the wages of non-regular employees are lower than regular employees is correct, because the type of employment also directly affects the wage level within each class (see Table 4), resulting in wage levels in the order A > B > C in Figure 4. What is new here is that the prevailing division line exists within regular employees, between primary-regular and secondary-regular, which has continued since the 1980s.

While Ishikawa and Dejima (1994) estimated the size of the primary sector in the 1980s as 14 million,[16] here the size of Class 1 in the 2000s is roughly estimated as 16 million.[17] This implies that there has not been a large change in the size of the primary-regular employees segment, and that the division line between the two segments basically continued into the 2000s. Secondary-regular employees, many of whom work for small or medium-sized companies, also continue to exist in the 2000s, and the quality of these jobs cannot be differentiated from those of non-regular employees.

The results also demonstrate that non-regular employees, who rapidly expanded through the 1990s, have been allocated exclusively in what was called the "secondary sector." All non-regular employees follow a single wage-determining system in spite of their considerable heterogeneity. Viewed from the present point in time, it might seem natural and reasonable that non-regular employees are located exclusively in Class 2. However, this was not an inevitable result, given that a three-sector model was once a reasonable plan for the Japanese labor market where some type of non-regular employees should have been better off (Nikkeiren 1995). Nonetheless, non-regular employees have expanded in line with the existing division in the labor market.

Our analysis has revealed that this latent division, existing under the observable layer of regular and non-regular employees, has supported the continuing disparities in the employment system. In turn, the categories of regular and non-regular employees that can be regarded as socially constructed have played a critical role in maintaining this structural division in the workplace.

## V. Conclusion

This paper has examined the structure of the labor market and the impact of the type of employment on wage disparities. The results indicate that the type of employment influences wages by choosing different wage-determining systems rather than by directly determining the wage level. Also, the labor market is not a single homogenous entity, nor does it consist of more than three segments, but is divided into two heterogeneous wage-determining systems. The division line between two latent classes does not coincide with the division line by regular/non-regular employees, though they partly overlap. This finding requires reconsideration of the prevailing view that the Japanese labor market is divided into regular and non-regular employees.

The two estimated segments are differentiated in terms of the wage-determining system. Class 1 has a higher return for education, company size, and tenure on wages, corresponding to the traditional "Japanese employment systems." More than half of regular employees are allocated to this segment. Class 2 has small returns for those factors and severe penalties for married women. All the non-regular employees are allocated exclusively in this segment. The rest of the regular employees, who mostly work for small or medium-sized companies, are also allocated to this segment, and the quality of their jobs is not differentiated from those of non-regular employees.

The most significant factor affecting the class allocation is the type of employment, but education and company size also have some impacts. Gender and marital status demonstrate strong relationships with class allocation, but only through the mediation of the type of employment. In this respect, type of employment

works as a pipeline that transfers people with specific attributes (women in general, and especially married women) to the disadvantaged wage-determining system.

This divide can be regarded as a continuation of one found in the 1980s through the 1990s, suggesting that non-regular employment has expanded in line with the existing division and has contributed to maintaining it in turn.

This research relies on data from a single year more than ten years ago. It cannot demonstrate the transition of the labor market, and we may find new developments in the labor market today. We should not blindly rely on the category of regular and non-regular employees, but should be aware of the structure that exist latently but substantively in the labor market. We need to consider how we could resolve these disparities and realize more fairness in the Japanese labor market.

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**Notes**

1. Gordon (2017) gives an extensive account of how the category of "non-regular employees" has emerged in the context of enduring dual structure of the Japanese labor market. Kambayashi (2013) analyses three definitions of the term in government statistics, which helps us to understand how the term is used differently from other countries.
2. The highest category of income is top-coded. The average value for that category is estimated using the quantile method (Ligon 1989) to be 18 million yen.
3. Variables for the Mincer wage equation were chosen according to Kawaguchi (2011).
4. Years of external experience=Age−(Years of education＋6)−Years of service
   This formula assumes that workers continue working after graduation, suggesting there would be measurement errors in cases of being unemployed or not in the labor force. Age is only provided as categories of 5-year intervals, and the median of each category is used.
5. Coefficients for "hours of work per week" are constrained to be equal across classes, while coefficients for other variables in wage equations are assumed to be different. This makes it easier to compare coefficients across estimated latent classes (Yamaguchi 2017).
6. Including marital status in the classification equation suggests that a person should be re-allocated when he/she gets married. This may not be realistic for men, who do not usually change jobs at marriage. However, this does happen for women: many choose to leave the labor market due to marriage or childbirth, and then re-enter it several years later. These women become excluded from their original status and are forced to enter peripheral jobs in the labor market.
7. Hori (2012) and Yamaguchi (2017) discussed the same model, and this paper refers to their suggestions on model specifications and evaluations. This model differs from what is now generally called a "switching regression." The structural forms of the specification model look similar for these two models, but there are some differences in objective of the models as well as in the technical aspects. The former is used to correct biases, when the choice of class is correlated with the outcome of the equations. In estimating the classification equation, a manifest variable is used as the dependent variable. On the other hand, the latter is used to detect heterogeneity (more than one distribution) in the data. A latent variable is used as the dependent variable of the classification function.
8. There is a possibility of sample selection bias from the unobserved wages of people who are not in the sample, since people with fewer working days or irregular work patterns are excluded. Günther and Launov (2012) proposed a modified model for correcting sample-selection bias, but its implementation is not available with standard software. The sample selection bias in the FMM is an issue to be dealt with in the future.
9. Some proposed alternative methods include modified LRT using statistics from a modified likelihood function (Chen et al. 2001), or a Bayesian approach using posterior predictive evaluation (Morduch and Stern 1997).
10. Tuma and Decker (2013) provided a review of simulation studies that evaluated the effectiveness of these criteria and found that many of them consider AIC3 to be the best. Also, they found that BIC is widely adopted as a criterion for model selection in empirical studies using FMM.
11. Latent Gold Ver. 5.0 was used for estimation.
12. The estimated latent classes are not observable segments in the labor market, but are constructs to represent the heterogeneity in the data, and each observation belongs to each class with specific probabilities rather than belonging exclusively to any single class.

13. Class 1: exp (−1.150)=0.32; Class 2: exp (−0.1407)=0.67. However, Class 2 is a mixture of regular/non-regular employment, whereas Class 1 has almost no non-regular employment.
14. There are three different approaches in evaluating variables: (1) Evaluate variables at zero; (2) evaluate variables at mean across all classes (as in Table 5); (3) evaluate variables at mean within each class. Option (1) means we would assume a typical worker to be "a high school graduate, working for a small/medium-sized company, unmarried, male, and a regular employee," which is not a very useful assumption. Also, it is a more realistic assumption to use individual attributes (3) averaged within each class rather than (2) averaged across all classes.
15. This point is one of the central issues in Yamaguchi (2017), but the same conclusions were reached in this paper despite the difference in data and model specifications.
16. From the results of Ishikawa and Dejima (1994) in Table 6-1, the number of general workers is 24.7 million people (36.3 million×67.8%) for males, and 10.02 million people (24.1 million×42.0%) for females, leading to 34.8 million people in total. Dividing this by the size of sectors in Table 6-6 (primary : secondary=27.5 : 41.3), the size of the primary sector will be 14.0 million people. This composition was based on the assumption that non-regular employees are included.
17. The estimated population using sample weights is 29 million people, as seen in Table 1. If we divide this number by the composition rate for Class 1, 55%, we obtain the result of 16 million people as workers in the primary sector. We should stop at comparison of "primary sector" and "Class 1" and should not go further, as people working with fewer days are excluded from the sample in this paper, and also "part-timers" are excluded from the sample in Ishikawa and Dejima (1984), leaving the size of the secondary/Class 2 sector undecided.

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