Goal Oriented Rational Behavior on Paid Holidays for Female Workers:
Empirical Analysis of Influence to Income by Using Paid Holidays

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Many Japanese workers do not use all of the paid holidays they are entitled to take. One reason is the economic significance of not using paid holidays, that not taking paid holidays leads to an increase in future income. Although it is pointed out that in theory taking paid holidays adversely influences future income in the long run, are disparities in compensation really occurring in the actual labor market? To test this proposition, this paper makes a dynamic empirical analysis with regard to disparities in future income as a result of using paid holidays using the data on individuals available in the “Japanese Panel Survey of Consumers (JPSC)” conducted by the Institute for Research on Household Economics. The survey base includes both males and females but the male case was not analyzed. As a result of the analysis, it was found that there was no compensation disadvantage arising from the number of paid holidays taken.

1. Introduction

Discussions on employment and labor have been active nowadays, including overwork, unpaid overtime, disparities in labor income, employment destruction, non-regular employment, working poor, unused (annual) paid holidays, etc. and these keywords catch our eyes in research journals and newspapers. Paid holidays are part of this discussion, and it is difficult to use them up because of the significant indirect costs to companies.

The issues in paid holidays are not improving just like the other problems, and under the current situation, it is difficult to use paid holidays even though there is the right to use them. Paid holidays, the system to release workers from work with pay for a certain period of time, are different from normal holidays in the sense that wages are guaranteed during the time period. Thus, income does not change regardless of the use of paid holidays from the standpoint of workers. The goal oriented rational behavior on paid holidays for workers is normally to use them up; however many workers in Japan do not use paid holidays. One of the reasons is economic interpretation of not using paid holidays, i.e., future income increases by not using them, which will be paid later on [Mitani, 1995]. Although it is pointed out that in theory use of paid holidays adversely influences future income in the long run, are disparities in working conditions (e.g. income reduction, adverse effects on performance evaluation, lower possibility of promotion, etc.) really occurring in the actual labor market in the long run by using paid holidays? From this viewpoint, empirical analysis is conducted in this paper in regards to future income difference as a result of using paid holidays, based on the data of individuals in the “Japanese Panel Survey of Consumers (JPSC)” conducted by the Institute for Research on Household Economics. The same individuals remained as the target in this survey, which is the first case that enables chronological observation of the number of paid holidays used in the past by these individuals. However, the survey tar-
get includes females only, and males were not analyzed. As a result of the analysis, the goal orient-
ed rational behavior on paid holidays for females as well as loss of future income is clarified.

Many previous studies and research indicate that females statistically use more paid holidays
compared with males, and the act to use them is considered to be significantly different between
males and females. Males and females are positioned under economically different ranks, and
their wages are believed to be determined by double standards. It is also easy to imagine that paid
holidays to be replaced with housekeeping and childcare have a different influence on perform-
ance evaluation between males and females. Based on the above discussion, the existing hypothe-
sis is reviewed, and attempts are made to clarify the actual situation using a slightly different
viewpoint from existing theories.

2. Previous studies

Are there disparities in working conditions (e.g., income reduction, adverse effects on perform-
ance evaluation, lower possibility of promotion, etc.) in the long run by using paid holidays? In
general, it is the opinion of management level employees that their subordinates who work for
longer hours tend to receive high personnel evaluation, and this might be true for workers who do
not use paid holidays, in accordance with the studies in industrial sociology. (2) Kawanishi [2009]
actually clarified from an interview survey that there are companies that treat the use of paid holi-
days as missed work, when management’s authority is strong in the workplace. (3) Mitani [1995]
analyzed the relationship between unused paid holidays and labor efforts based on a question-
naire survey, and pointed out the possibility that unused paid holidays represent the results of
labor efforts to increase performance based on the idea that to work at present leads to increase
in future income. The Japan Institute for Labor Policy and Training [2002] and Ogura [2003] pre-
sented the framework to analyze unused paid holidays in Japan with the income-leisure prefer-
ence model, as hints were received from studies on absenteeism in Europe and the U.S. (4)
According to The Japan Institute for Labor Policy and Training and Ogura, complete use of paid

![Figure 1. Conceptual diagram of not using a certain number of days](Source: The Japan Institute for Labor Policy and Training 2002 and Ogura 2003)

Note: This is a conceptual diagram of the change in income and wages in the case that there is a premium
by not using paid holidays as discussed by the Japan Institute for Labor Policy and Training [2002] and
Ogura [2003]. This diagram is not based on the empirical analysis by the Japan Institute for Labor Policy
and Training [2002] or Ogura [2003] where the number of paid holidays used is the dependent variable.
holidays to increase leisure hours normally leads to reasonable labor provision since they are with pay, with 170 working days and 10 paid holidays a year as indicated in Figure 1. However, it is assumed that Japanese workers choose the combination of 175 work days (five paid holidays) and income far exceeding Yen 3 million (Point B) instead of the combination of 170 work days (10 paid holidays) and Yen 3 million income (Point A). This is considered to be because use of paid holidays has a negative influence that could cause the loss of income from a long-term perspective. The factors include adverse effects on performance evaluation and lower likeliness of promotion, suggesting that unused paid holidays increase income on a long-term basis. Kobayashi [1995] clarifies the internal structure of promotion based on a questionnaire survey(5) including questions about paid holidays. He points out that a type of worker who receives promotion early is characterized by those who do not use paid holidays very often and are indifferent to “hobbies, etc. rather than work as motivation in life.” However, both of these are cross-section analyzes at one point of time. The Japan Institute for Labor Policy and Training [2002] and Ogura [2003] also confirms that even after controlling basic attributes, awareness of work and leisure, etc., there is a significant relationship between annual salary and the number of paid holidays used, which suggests that workers with high annual salaries use more paid holidays. This is the data at one point of time and not representative of future income. (It analyzes the influence of annual salary on paid holidays used, and only identifies whether the influence of annual salary has strong income effects or substitution effects.) In this regard, the Japan Institute for Labor Policy and Training [2002] and Ogura [2003] also points out the possibility of the decrease in future income, but demonstration remains as the next step. In this paper, therefore, actual loss of income in the long run as a result of using paid holidays is dynamically verified.

3. Discussion

The point of discussion in this paper is the goal oriented rational behavior on paid holidays for female workers, in other words, presence of income loss in the long run as a result of using paid holidays. To clarify this point will answer the question of whether or not disadvantages including disparities in working conditions exist based on the number of paid holidays used in the case of female workers, i.e., illegal treatment. However, since there is a significant difference between males and females in the labor market, in regards to the number of paid holidays used as well as their income level, the framework of analysis is necessary in consideration of the difference between males and females in the behavior to use paid holidays in Japan.

In 2009, the difference in monthly wages between males and females in Japan was 100 to 69.8 for general workers, and wages for males exceed wages for females in all age groups (Figure 2). In regards to transition of wage amounts by gender, wages for women have less fluctuation by age in general. They slightly increase toward and peak around the mid 40’s then slowly decrease. On the other hand, wages for males sharply increase at an early age, which continue until the early 50’s then start to decrease. Seniority-based wages are generally observed in males, but do not seem to be applicable for average female workers. Seniority is slightly observed in female wages from an early age until the 40’s and then becomes a factor of wage reduction after that [Ikeya 2005]. Economic interpretation of not using paid holidays to increase future income which will be paid later might not be applicable to female workers whose wages are low and not based on seniority. A demerit system strongly connecting with this seniority-based wage is prevalent in Japanese corporations [Yamaguchi 2008]. The demerit system is a characteristic about behavior evaluation stipu-
lating the principles of compensation: you will receive the same promotion as everyone else if your job performance is as acceptable as everyone else, while your promotion will be delayed if your behavior is negative. As indicated by previous studies, disadvantages exist including disparities in working conditions, and if the behavior of using paid holidays leads to deduction of points, female workers may not be the target of the demerit system because seniority-based wages supposedly connecting with such system may not be applicable to female workers. Thus, the hypothesis is drawn that use of paid holidays does not influence the future income of female workers.

It is theoretically pointed out that using paid holidays has adverse effects on future income in the long run; however in the case of female workers, is it really influencing future income in the actual labor market? By clarifying this issue, it is possible to find clues to ease the anxiety of female workers who do not (cannot) use paid holidays fearing the influence on performance evaluation, etc., and to promote the use of paid holidays at a government policy level (enforcement of Article 136 of the Labor Standards Act prohibiting creation of different working conditions because of the use of paid holidays) as well as at a corporate level.

4. Data used, variables, method and results

(1) Data used
The data of individuals in the “Japanese Panel Survey of Consumers (JPSC)” conducted by the Institute for Research on Household Economics is used. The annual follow-up survey has been conducted from 1993 to the present. The target consists of three cohorts: (1) 1,500 females ages 24–34 in 1993 (Cohort A), (2) 500 females ages 24–27 in 1997 (Cohort B), and (3) 836 females ages 24–29 in 2003 (Cohort C), sampled nationwide using the two-stage stratified random sampling method [Sakamoto, 2004] (Figure 3).

There are two main kinds of survey sheets: without spouse and with spouse. Survey items extend a very wide variety, including consumption, income as the center of interest and use of paid holidays, as well as work, residence, events in life, and consciousness of life. The placement method is used and the response rate from the previous year is approximately 95% every year. The target of analysis in this report includes Cohort A to C, to avoid bias by distribution of ages. Thus, data for 2003 (Panel 11) to 2005 (Panel 13) is used.
(2) Variables, method of analysis and results

How does the use of paid holidays influence future income? This is verified by conducting a 
multi-regression analysis with annual salary (logarithm) as the dependent variable.

In order to review the influence on future income by using paid holidays, the number of paid
holidays taken for the relevant year is used from the data in 2003 to 2005 as the independent variable (a short-term influence will be reviewed in the case of the number of paid holidays used in 2005).

Actual work hours per week are entered as the control variable in addition to basic attributes and variables on ways to work. Job changes cause a break in performance evaluation due to the use of paid holidays; therefore those who changed jobs during these three years were excluded from the target for the purpose of accurate analysis. The dependent variables are from 2005, to see the influence of paid holidays on future income. Control variables of the same year are also entered. Table 1 indicates descriptive statistics of variables used for analysis and the results are included in Table 2.

As a result, the numbers of all paid holidays used from 2003 to 2005 were not significant and definite wage differences did not occur due to the use of paid holidays; therefore it might be possible for female workers that disadvantages including disparities in working conditions due to the use of paid holidays from the present to the future do not actually exist.

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**Table 2. Influence of the use of paid holidays on future income (multi-regression analysis)**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Coefficient value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>3.602</td>
<td>0.000</td>
</tr>
<tr>
<td>Age</td>
<td>0.016</td>
<td>0.000</td>
</tr>
<tr>
<td>Family size</td>
<td>-0.029</td>
<td>0.004</td>
</tr>
<tr>
<td>Graduate of junior high school</td>
<td>0.326</td>
<td>0.168</td>
</tr>
<tr>
<td>(Graduate of high school)</td>
<td>0.110</td>
<td>0.007</td>
</tr>
<tr>
<td>Graduate of vocational school, special training school, junior college or technical college</td>
<td>0.136</td>
<td>0.008</td>
</tr>
<tr>
<td>Graduate of 4-year college or graduate school</td>
<td>0.136</td>
<td>0.008</td>
</tr>
<tr>
<td>Job title: craft, blue-collar work</td>
<td>-0.192</td>
<td>0.002</td>
</tr>
<tr>
<td>Job title: sales, service</td>
<td>-0.251</td>
<td>0.000</td>
</tr>
<tr>
<td>(Job title: clerical)</td>
<td>0.848</td>
<td>0.009</td>
</tr>
<tr>
<td>Job title: management</td>
<td>0.138</td>
<td>0.341</td>
</tr>
<tr>
<td>Job title: specialty</td>
<td>0.020</td>
<td>0.663</td>
</tr>
<tr>
<td>Job title: technical</td>
<td>0.015</td>
<td>0.821</td>
</tr>
<tr>
<td>(9 or less)</td>
<td>0.161</td>
<td>0.068</td>
</tr>
<tr>
<td>10 to 99 or less</td>
<td>0.220</td>
<td>0.011</td>
</tr>
<tr>
<td>1,000 or more</td>
<td>0.263</td>
<td>0.001</td>
</tr>
<tr>
<td>Industry type: agriculture and forestry, fishery, marine products, mining</td>
<td>0.231</td>
<td>0.478</td>
</tr>
<tr>
<td>Industry type: construction</td>
<td>-0.071</td>
<td>0.381</td>
</tr>
<tr>
<td>Industry type: manufacturing</td>
<td>-0.002</td>
<td>0.969</td>
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<tr>
<td>Industry type: wholesale, retail</td>
<td>-0.006</td>
<td>0.915</td>
</tr>
<tr>
<td>Industry type: financing, insurance, real estate</td>
<td>-0.065</td>
<td>0.307</td>
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<tr>
<td>Industry type: transportation, communication</td>
<td>-0.017</td>
<td>0.857</td>
</tr>
<tr>
<td>Industry type: electricity, gas, water supply, heat supply (Industry type: service)</td>
<td>-0.142</td>
<td>0.533</td>
</tr>
<tr>
<td>Industry type: civil service</td>
<td>0.115</td>
<td>0.051</td>
</tr>
<tr>
<td>Full-time (Part-time, temporary, contract, etc.)</td>
<td>0.063</td>
<td>0.000</td>
</tr>
<tr>
<td>Weekly work hours</td>
<td>0.016</td>
<td>0.000</td>
</tr>
<tr>
<td>Paid holidays used in 2005</td>
<td>0.001</td>
<td>0.848</td>
</tr>
<tr>
<td>Paid holidays used in 2004</td>
<td>0.005</td>
<td>0.169</td>
</tr>
<tr>
<td>Paid holidays used in 2003</td>
<td>0.007</td>
<td>0.074</td>
</tr>
<tr>
<td>Determination coefficient adjusted by the degree of freedom</td>
<td>0.709</td>
<td></td>
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<tr>
<td>P value</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Note (1): Based on author’s estimation
Note (2): Significant at 5% for *, 1% for ** and 0.1% for ***.
5. Review

(1) Income-leisure preference model in regards to the use of paid holidays for female workers

In Table 2 above, a wage gap due to the use of paid holidays was not observed in the case of female workers. As a result, income remains unchanged in both short and long runs regardless of the use of paid holidays. The income-leisure preference model by the Japan Institute for Labor Policy and Training [2002] and Ogura [2003] was applied which focused on the premium of paid holidays including increase in long-term income by not using paid holidays on the assumption that future income will decrease as a result of using paid holidays. Since there is no wage gap due to the use of paid holidays, the premium of paid holidays is gone and the B-A gradient is horizontal in Figure 4.

Therefore, when it comes to female workers, this is consistent with the basic diagram of the income-leisure preference model in regards to the use of paid holidays, suggesting that income remains unchanged for a short term regardless of the use of paid holidays since they are with pay as previously indicated by the Japan Institute for Labor Policy and Training [2002] and Ogura [2003]. In this figure, the income constraint line for female works is B–A–H_m and the maximum utility is obtained at the contact point A with the utility line U_1, indicating that the goal oriented rational behavior on paid holidays is to choose income at 0-B and the number of paid holidays at 0-H_0. Thus, complete use of paid holidays is the goal oriented rational behavior.

However, considering that most people as the subject of analysis including female workers in Japan leave several paid holidays unused, the fact that future income does not decrease as a result of using paid holidays is not equal to the fact that the premium wage rate for female workers by not using paid holidays is flat at present. Rather, good balance is observed in this regard and other influences might be considered.

Paid holidays might be substituted with other vacations. This is indicated by the survey on paid holidays to regular employees conducted by the Japan Institute for Labor Policy and Training in 2010. 64.6% workers mentioned that they keep paid holidays unused because “they need to save them for illness and urgent personal business.”[10] In other words, paid holidays are used for non-
occupational illness or injury. Use of sick leave benefits might lead to decrease in current income, and supposing that a few days are missed for non-occupational illness and injury during a year, saving paid holidays for this purpose will become a reasonable behavior to prevent decrease in income. Although this survey did not cover buy-back of “paid holidays” as the problem of expired paid holidays, the possibility is assumed that unused paid holidays are leading to increase in income, considering that approximately half of paid holidays remain unused under the current situation.

(2) Corporate view to female workers

Then, why do quantitative disadvantages of the illegal treatment, i.e., disparities in working conditions based on the number of paid holidays used, not exist in the case of female workers? The verified results are interpreted.

Interpretation is easy if we consider the view on the gender role as well as the influence to human capital which is supposed to be sociologically important. According to the “Human Capital” [Becker 1974], females tend to specialize in the household role due to their physical characteristics of bearing children and males tend to specialize in the earning role outside the household, and the division of roles is economically reasonable. In particular, the division of the gender role is largely incorporated into households as well as society in Japan [Sugimoto 2005], and companies are also considered to support this idea. Thus, companies consider or understand the use of paid holidays to be replaced with nursing or caring for families, housekeeping and childcare in the case of female workers who are mainly in charge of unpaid work such as housekeeping in addition to work. Unpaid work hours for male workers in Japan to whom companies strictly require long work hours are at the lowest level in the world. The proverb “men may not enter the kitchen” is still common today, and in this social awareness, it is not difficult to imagine that companies give some consideration to females who have to take on housekeeping, childcare and nursing care exclusively.

On the other hand, the fact that future wages are not influenced by not using paid holidays in the case of females can be considered as an indication that corporations do not fully provide opportunities for promotion to females whose role is not exclusively to earn income. In fact, economic benefits for workers are different by gender, and the assessed amount of monthly wages(11) is smaller for females compared with males [Endo 1993]; therefore unused paid holidays might not be considered at the time of appraisal. The gender-differentiated wage structure includes the nature of gender discrimination in a personnel evaluation system as well as the seniority-based wage where gender discrimination is internalized [Mori 2005]. This standard to determine wages includes the possibility to incorporate as much gender differentiation as possible, as long as a common concept does not exist [Kamiya 2009].

These characteristics of labor and gender in Japanese society cause double standards for wages(12), and economic interpretation of not using paid holidays to increase future income might only be applicable to the ever-increasing wage curve for male workers (seniority-based wage curve).

6. Conclusion—to be able to use paid holidays

As a result of the analysis, it is suggested that disadvantages due to use of paid holidays do not actually exist in the case of female workers, including disparities in working conditions. Based on
this understanding, a proposal is made to promote the use of paid holidays. While the problem of disparities in wages or differences in promotion opportunities exists in the case of female workers, many of them do not use paid holidays from the “concern for personnel matters and working conditions,” companies need to spread the word to clarify that there is no disadvantage including disparities in working conditions because of the use of paid holidays. Paid holidays are not very enjoyable from the viewpoint of corporate management in an economic downturn due to reasons including the cost of substitute workers, etc. in general. Workers are also implicitly pressured against the use of paid holidays because of the concern about working conditions. However, management, etc. should appeal at least to female workers that they have certain understanding on the use of paid holidays.

Upon review of paid holidays and income, the problem of substitution of paid holidays is considered as far as there is no disadvantage associated with use of paid holidays such as disparities in working conditions. According to the Comprehensive Survey on Wages conducted by the Ministry of Health, Labor and Welfare, the payment rate of average wages in sick-leave benefits in 2010 was 72.0%. Considering the possibility of using paid holidays rather than sick-leave benefits for non-occupational illness and injury in relation to income, it is effective to increase the payment ratio of wages in sick-leave benefits in order to increase the use of paid holidays. However, the perspective of reasonable disparities between people who take and do not take leaves of absence is also important in regards to the level of income security [Sato and Takeishi, 2004], and full discussion is necessary including the problem of substitution. In regards to “buyback of paid holidays,” the substitution effect will increase because additional allowances are paid, and decrease in the number of paid holidays used is expected, which is out of the scope of the original purpose of paid holidays; therefore such benefits might not be established or recommended without careful consideration.

Although the complete use of paid holidays is a goal oriented rational behavior, the use rate of paid holidays is actually less than half in Japan. The relationship between income and use of paid holidays was reviewed in this paper, while a significant increase in the use rate is hard to imagine even though the concern about working conditions or the problem of substitution with sick-leave benefits, etc. is eliminated. This is because factors of unused paid holidays not only include income, but also span a wide range such as issues of personnel management and workload management, negativity to vacations, etc. However, step-by-step improvement will lead to more use of paid holidays for workers in Japan.

It is not possible to verify the presence of disadvantages for male workers including disparities in working conditions, etc. because of data characteristics at this time. There were also data restrictions, etc., and only the influence on future income up to two years later as a result of using paid holidays was successfully verified. In view of significance probability only, it will approach the level of significance by going back in the past, and a significant influence might appear by going back further in the past. It is believed that promotion is not differentiated at the early stage of service years in Japanese corporations, and the time when a clear difference of evaluation appears as disparities in working conditions varies. If there is a similar tendency in evaluation of unused paid holidays, the possibility of disparities in working conditions cannot be denied. This will require additional verification with further statistical research, interviews of management, etc. However, considering that there was no dynamic study on paid holidays in the past, what was demonstrated for female workers is considered to be meaningful.
Notes
(1) The author was provided with the data of individuals from 1993 (Panel 1) to 2005 (Panel 13) in the “Japanese Panel Survey of Consumers (JPSC)” conducted by the Institute for Research on Household Economics.

(2) In the survey to the management by the Japan Management Association organized by Atsushi Sato, etc. [2005], the question was asked: “What are the types of subordinates under regular employees whose overtime work was long?” As a result, types of workers with the longest overtime included “strong sense of responsibility,” “cooperative,” “well-organized,” and “high personnel evaluation.” The portrait of “capable person” often mentioned at a workplace is relevant to workers with long work hours [Sato, 2008].

(3) In accordance with Kawanishi [2009], the Hiroshima Electric Railway Branch of the Chugoku District Private Railway & Bus Workers Union went into a battle to win paid holidays and menstruation holidays against the Hiroshima Electric Railway in the past. However, management’s authority was strong at the workplace, and the situation was far from using paid holidays for workers. When paid holidays were used, workers were even pointed out as if they missed work. Refer to Kawanishi [2009] and Igusa [2009] for details.

(4) Winkler [1980] discussed the influence of sick leave by applying the income-leisure preference model. In the case of absenteeism in the income-leisure preference model, the maximum number of work days is not selected but instead, sick leave with pay is used for absence in order to maximize the utility of sick-leave benefits even if it is necessary to abandon wages from working for a certain number of days. However, it is also pointed out that if some kind of premium is given in the case of not using sick leave, absenteeism decreases as a result of the substitution effect. The Japan Institute for Labor Policy and Training [2002] and Ogura [2003] discussed this issue by applying it to Japan.

(5) Career survey for white-collar workers: The “Committee to Study Employment System” by the Research Institute for Advancement of Living Standards (Chief Examiner: Toshiaki Tachibanaki) conducted this survey with cooperation from five unions of major private companies as members of the Institute (one union from each industry including automobile, electricity, chemical, power, and department store).

(6) The number of effective answers is not published.

(7) Since the “with spouse” sheet distributed to married females has survey items on their husbands (work, living hours, etc.) in this panel survey, it is possible to chronologically observe males as well; however it is not used in this paper due to the bias on marital status.

(8) According to Kamiya [2009], wages in Japan vary depending on people as a general opinion, because of different amounts of increase at the time of evaluation. Wages for many regular employees are connected to people instead of their posts (job duties), and the amounts of increase become “void” for mid-career employment at many companies (the wage level won’t go down to the level of starting wage for new graduates). Therefore, the influence of the use of paid holidays to performance evaluation is considered to disappear at the time of job change.

(9) Cases with missing values in variables entered in the model, omitted samples, and those who changed jobs or retired between 2003 and 2005 are excluded with list-wise case deletion, resulting in 428 females as the target of analysis. Panel data surveys are very useful to analyze economic behavior by repeatedly investigating the same target and capturing the changes throughout the time period; however it also means that the representation of the respondent group to the parent population is gradually lost over time. Actually, the target of analysis at this time consists of 74% full-time and 26% part-time, and the actual parent population is not reflected where the majority of female workers is occupied by part-time workers (54% full-time and 46% part-time before list-wise case deletion). However, it is not constructive to avoid the use of panel data because of the problem of omitted samples, etc. We should rather consider that carefulness is required to use data upon statistically confirming the magnitude of such bias on a constant basis. Since this is to verify future income in particular, the target of analysis consists of contin-
uous workers, and differences in the probability of separation and job change occur between full-time with relatively longer service years and part-time with relatively shorter service years. Thus, more samples of part-time workers are excluded from samples originally selected in comparison with full-time workers, which causes a distorted relationship between samples and the parent population. As noted from the age structure for the target of investigation in Figure 3, there is also a factor that many of them are relatively young workers who are hired as full-time. However, the history of panel data accumulation is not very long in Japan and its actual use is also limited; therefore it is considered as valuable as available data.

(10) Positive percentage for each item
(11) Refer to Tachibanaki [1992] in regards to appraisal system.

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