Who Holds Multiple Jobs? Empirical Analysis of Multiple Job Holding Using a Japanese Online Survey

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This paper supplies a labor supply model of multiple job holding based on Casacuberta and Gandelman (2012) and investigates relationships between multiple job holding and the main job or personal status by using an internet survey. In this research, we focus on the motivation of multiple job holding. Three results are estimated. (1) Non-labor income does not stimulate workers to have a second job with monetary motives but stimulates to them to have a second job with both monetary and non-monetary motives. (2) Income from the main job decreases the probability of holding a second job. (3) Multiple job holding without monetary motives is not explained by main job status or personal characteristics. From a comparison of the second job's content, we investigate the relationship between the main job and second job by reasons of second job holding. Second jobs with only monetary motives are not useful for main jobs. On the other hand, second jobs with non-monetary motives stimulate the productivity of the main job, even though this result is based on the respondents' subject.

I. Introduction

   This article outlines hypotheses based on the models of Casacuberta and Gandelman (2012) and Kawakami (2017) regarding the effect of on the contents and conditions of a worker's main job (wage rate, working hours, unearned income) on multiple job[1] holding[2], and carries out an empirical analysis based on *Survey on Multiple Job Holding* conducted in 2007 by the Japan Institute for Labour Policy and Training (JILPT). This article also examines whether multiple job holding is beneficial for the employer or business owner by comparing the contents of multiple jobs according to type of motivation.
   In 2017, the Office of the Prime Minister of Japan formulated the Action Plan for Work Style Reforms

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1. "Multiple jobs" consists of a main job and an additional job or jobs. Here it becomes necessary to distinguish between the main job and additional job(s). These can be defined by length of working hours, salary amount, or which job the employee had first, but this article employs the definition from the *Survey on Multiple Job Holding*, based on the perceptions of the job holder. This is the same definition used in the Ministry of Internal Affairs and Communications *Employment Status Survey*.
2. The phrase "multiple job holding" is derived from previous research such as Shishko and Rostker 1976.
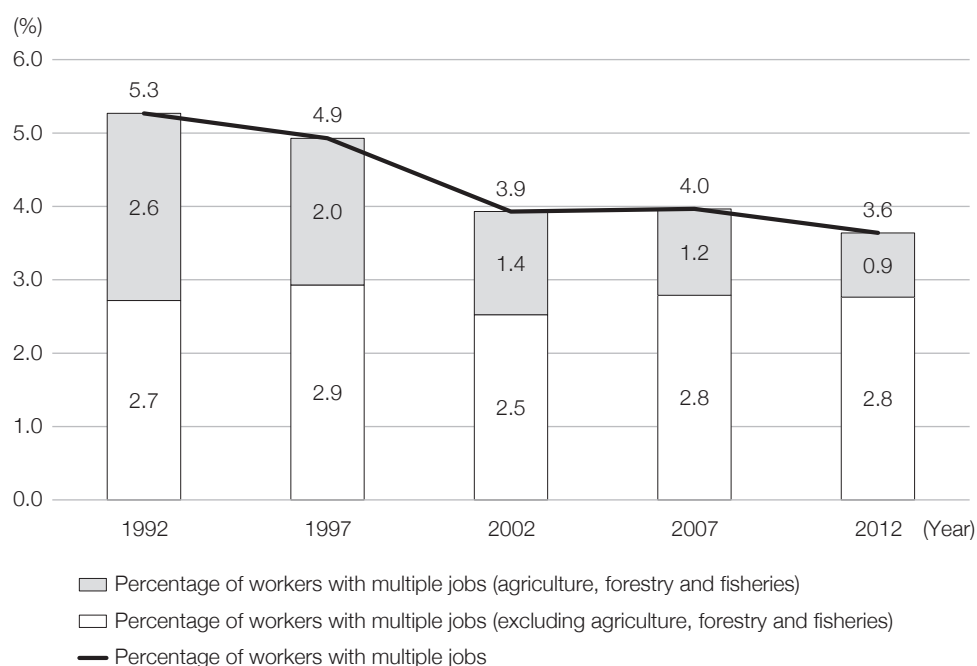
Source: Data aggregated from MIC *Employment Status Survey.* For 1992 data, anonymous data was used to divide respondents into "excluding agriculture, forestry and fisheries" and "agriculture, forestry and fisheries."

Note: Multiple job holding rate is defined as the percentage of employed persons who have multiple jobs. Figures for "agriculture, forestry and fisheries" include those whose main or additional jobs fell in this category.

Figure 1. Percentage of workers with multiple jobs of employed persons

as one of the measures to address the labor shortage that has become increasingly apparent since the 2010s, and low productivity in the service industry. In addition to such key issues as alleviation of excessively long working hours and correction of disparities between non-regular and regular employees, the Action Plan encourages multiple job holding as follows. Here we see that holding multiple jobs is expected to lead to technological innovation and launching of new businesses.

> "Side jobs and multiple jobs done in conjunction are effective means for development of new technologies, open innovation and entrepreneurship. It is also effective for preparation for a new life after retirement. In Japan's case, there are still extremely few telework users, or companies that allow side jobs and multiple jobs done in conjunction. It is extremely important that we work to spread these practices."[3]

Concerning the education and training effect of multiple job holding, Panos et al. (2014) used UK panel data, and Kawakami (2018) used data from the *Survey of Household Panels* provided by Panel Data Research Center at Keio University, to carry out empirical demonstrations, which indicate clearly, although to a limited extent, that multiple job holding has a positive effect on performance of main jobs.

With which industries and in what working styles do multiple jobs tend to be correlated? The status of multiple job holding in Japan is tabulated in the Ministry of Internal Affairs and Communications *Employment Status Survey* (Figure 1). The percentage of multiple job holders in Japan (the percentage of employed workers who hold multiple jobs) declined from approximately 5.3% to 3.9% during the 1990s, and has remained steady since then. When examining the breakdown of multiple job holders, however, the figures show that multiple job holding among business owners, family business operators, and employees engaged

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3. From the Prime Minister's Office website (https://japan.kantei.go.jp/97_abe/actions/201610/24article1.html)
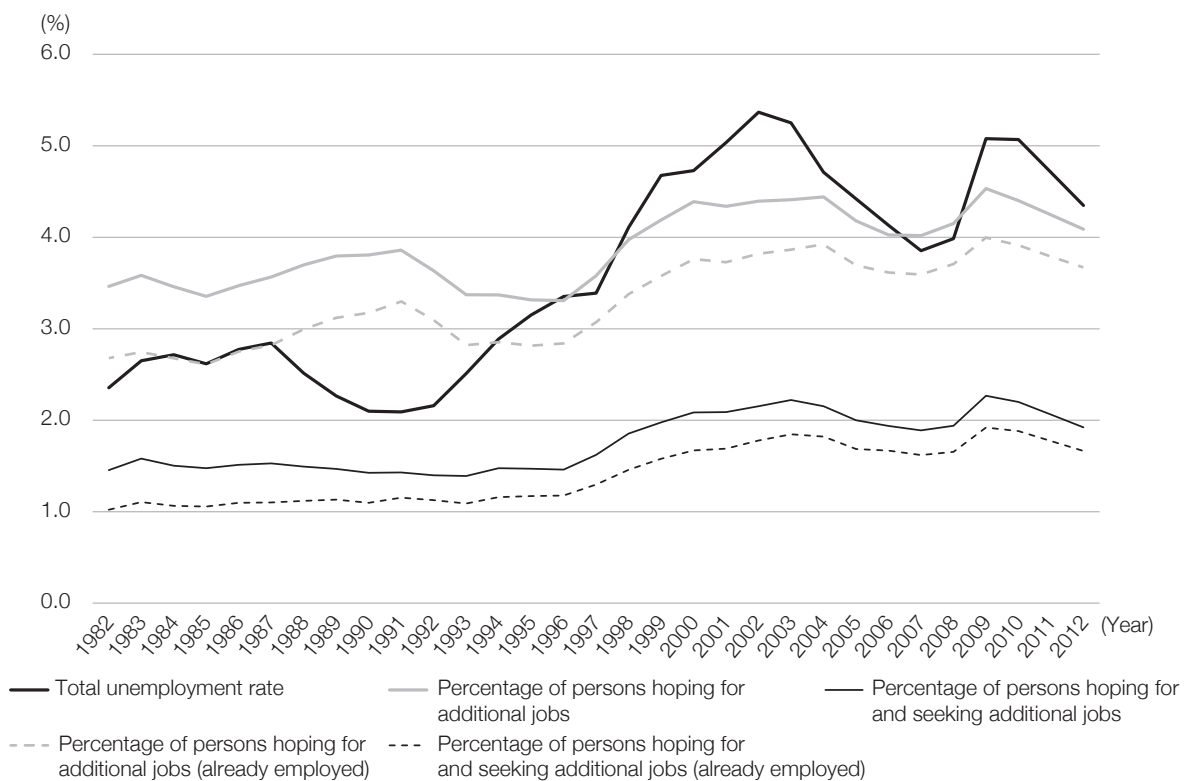
Source: The author, based on MIC *Labor Force Survey*.

Note: The percentage of workers hoping for additional jobs was calculated by dividing the number of workers hoping for additional jobs by the total labor force population. "Workers hoping for and seeking additional jobs" are, among those hoping for additional jobs, those who are actively conducting job-seeking activities.

Figure 2. Change in the total unemployment rate and percentage of workers hoping for additional jobs

in industries other than agriculture, forestry and fishery remained unchanged until 2012 and rose in 2017. We must note that overall decline of multiple job holders is largely the result of a shrinking number of people farming on the side[4] while holding main jobs (or farmers with side jobs). The drop in percentage of multiple job holders holds true when this side-job farming contingent is counted, and the decline has continued until 2017, the latest survey year at the time of this article's writing.

On the other hand, the demand for multiple jobs has also been consistently rising. Figure 2 shows, based on the Ministry of Internal Affairs and Communications *Labor Force Survey*, the percentage of people seeking multiple jobs, derived from the percentage of the working population that are seeking additional jobs. According to the figure, in the late 1990s and 2000s the percentage of workers seeking multiple jobs increased in the same manner as the total unemployment rate. As it appears that about half of unemployed people are engaged in job-seeking activities, we can understand that the scale of demand for multiple jobs is not to be overlooked.

In labor economics, early studies viewed multiple job holding caused by constraints on the working hours of main jobs, rather than an aspect of skills development or avoidance of unemployment risk. When working hours at main jobs are restricted, workers cannot earn enough income unless they have multiple jobs, which earn lower wage rates than the main job. Perlman (1966), who analyzed multiple jobs in the framework of economics, found that when an individual is not presented with a labor contract that pays a higher rate for

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4. Those engaged in forestry and fishery are also included among the "people farming on the side" mentioned here. Japanese households that farm while also having other jobs are discussed in detail in Prindle 1984.

additional working hours at second or side jobs than that of the prescribed working hours of the main job, he or she tends to work multiple jobs at a wage rate lower than that of the main job, and Perlman examined this using a model that is an extension of the textbook labor supply and demand model. This argument suggests that multiple job holding is closely connected with the problem of the working poor. According to Kawakami (2018), who showed that there were no training effects from holding multiple part-time jobs, those population in working poor work inefficiently; earning lower wage rates and taking time to move between work places. In Japan, meanwhile, the issue of multiple job holding is discussed in terms of skill development, unemployment risk reduction[5] and allowing or prohibiting provision.

As the interest in these multiple job-related issues indicates, diversification is a crucial aspect. Main jobs are generally held in order to earn a living, but among multiple job holders are those that secure a livelihood through their main jobs, but have motives for holding additional jobs other than income.

In previous studies, comprehensive theoretical models incorporating diverse reasons for multiple job holding have not been in place, and discussions have been focused on individual factors. On the empirical side, many studies have neglected to explore the factors[6] contributing to multiple job holding with the premise of diverse motivations, and have instead examined the types of multiple jobs based on the results of estimates of multiple job holding's labor supply function.[7] To supplement these studies, this article presents a labor supply model that generalizes the Casacuberta and Gandelman (2012) model of multiple job holding when there are both mercenary and non-mercenary motives, to clarify the differences between factors and content of multiple job depending on motivation. The model presented herein has been verified using the JILPT *Survey on Multiple Job Holding*. By verifying the benefits and drawbacks of the main job and additional jobs to business owners and workers themselves in cases of multiple job holding, this article examines to determine which issues related to multiple job holding in Japan require resolution.

The analysis results show that mercenary motives are less related to the content of the main job, and more likely to be present when the motivation for multiple job holding is constraints on hours at the main job (whether or not overtime is worked, number of working days). When non-mercenary motives are included, the results suggest that time constraints have a limited effect, and that the benefits include professional development, where additional jobs make a useful contribution to the main job.

The structure of this article is as follows: the next section (II) introduces previous research on multiple jobs and presents hypotheses to be verified. Section III outlines the *Survey on Multiple Job Holding* used for analysis in this article, and classifies multiple jobs for purposes of analysis by examining trends in overlapping of motivations for holding multiple jobs. Section IV examines the hypotheses using a multinomial probit model, and looks at the contents of multiple jobs by type. The analysis results are summarized in Section V, and future issues are outlined.

II. Previous studies and hypotheses for verification

Early studies on multiple jobs focused on the constraints to working hours. Using a labor supply model based on choice between income and leisure, Perlman (1966) showed that workers choose to hold additional jobs with lower wage rates than their main jobs when there are constraints to working hours at the main jobs. In addition, Shishko and Rostker (1976) and Frederiksen, Graversen and Smith (2008) focused on changes

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5. Ogino (2009) focuses on the role of diversifying the employment insecurity of regular employees. JILPT (2005), Ogura and Fujimoto (2006) analyze provisions prohibiting additional job(s).

6. This article uses the terms "reason" or "motive" with regard to the reasons for having multiple jobs that the individual perceived when responding to the survey. The term "factors" is used to indicate attributes of the main job and the individual that contribute to the holding of multiple jobs.

7. For the purposes of analysis, the types of multiple job holding are differentiated according to whether they entail constraints on working hours at main jobs or not. The criterion is whether or not the wage rate at the additional job(s) is lower than that of the main job.

in the wage rate based on budget constraint tendencies, and analyzed the effects of declining wage rates and income taxes on the multiple-job labor supply. Krishnan (1990) showed that household income, thought to be increased by wives' working, has a negative influence on husbands' multiple job holding. Conway and Kimmel (1998) presented a multiple-job labor supply model to explain both constraint-oriented and non-constraint-oriented factors, but thus far the common practice has been to focus on mercenary motives for holding multiple jobs.

From 2000 onwards, there has been a growing body of research, largely consisting of empirical analysis focusing on the influence on multiple job holding of factors other than working hours constraints. Panos, Pouliakas and Zangelidis (2011) cite four types of factors for multiple jobs selection: working hours constraints, financial motives, experience motives, and heterogeneity motives.

Like working hours constraints, the impact of financial motives is clearly shown by empirical demonstration of the role of wage rates at main jobs in increasing the multiple-job labor supply (Shisko and Rostker (1976), Krishnan (1990), Dickey, Watson and Zangelidis (2011)). In addition, Böheim and Taylor (2004) concluded that workers choose multiple jobs as their own employment security in consideration of unemployment risk, by using data from the 1991–1998 *British Household Panel Survey* (BHSP) that shows strong tendency for short-term employment contracts at main jobs to be correlated with multiple job holding. With regard to the experience motive, Heineck and Schwarze (2004) used data from the German Socio-Economic Panel (SOEP) and BHSP to show that some workers hold multiple jobs in order to acquire new skills and gain experience.

Böheim and Taylor (2004) performed one analysis focusing on heterogeneity of work content. They state that different practical effects obtained from main jobs and multiple jobs are among the factors encouraging multiple job holding (as an example, they cite people with day jobs moonlighting as nightclub singers.) Casacuberta and Gandelman (2012) demonstrated that the increase in wages obtained from work other than music reduces time spent on creative activities among musicians in Uruguay.[8] These activities differ from fields addressed in previous research, in that working hours have some of the same characteristics as leisure time, while it also assumes that this population obtains some practical effects from this time. Meanwhile, Casacuberta and Gandelman (2012) and Kawakami (2017), who interprets the model in general terms, show the labor supply function for multiple jobs when practical effects can be obtained from working multiple jobs in itself, based on non-mercenary motives. The following hypotheses for multiple job holding are derived from the conditions of the first order of the labor supply function.

> *Hypothesis 1: Increase in unearned income reduces multiple-job labor supply, i.e. reduces working hours at additional jobs, for mercenary motives.*
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> *Hypothesis 2: Increase in working hours at main job reduces multiple-job labor supply, i.e. reduces working hours at additional jobs, for mercenary motives.*
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> *Hypothesis 3: Increase in wage rate at main job reduces multiple-job labor supply, i.e. reduces working hours at additional jobs, for mercenary motives.*
>
> *Hypothesis 4: Increase in unearned income increases multiple-job labor supply, i.e. increases working hours at additional jobs, for non-mercenary motives.*
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> *Hypothesis 5: The influence of increase in wage rate at main job on multiple-job labor supply, i.e. working hours at additional jobs, for non-mercenary motives, depends on the size of income effect and substitution effect.*

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8. Various additional job selection factors have been analyzed in addition to the above four factors. Paxson and Sicherman (1996) focused on activities in preparation for career changes, and Guariglia and Kim (2006) and Cabinet Office, Government of Japan (2011) focused on additional job(s) as preparation for starting one's own business. Also, Kimmel and Powell (1999) revealed that employed wives were correlated with husbands' having multiple jobs, and Krishnan (1990) showed that young single women were more to have multiple jobs.

From the next section onward, I will conduct an empirical analysis using data from the JILPT *Survey on Multiple Job Holding*. Besides this survey, a body of research on multiple job holding has been accumulating in Japan:

Ohki (1997) was among the first to study multiple job holding in Japan. Having recognized an "increase in multiple job holding by those who are regular employees at their main jobs could erode employment opportunities for non-regular employees," Ohki (1997) categorized workers by form of employment and/or employment status at main job, as "regular employees," "non-regular employees," or "non-employees (self-employed, etc.)" based on a special aggregation of data from the special calculation of the *Employment Status Survey 1992*. Furthermore, by analyzing the *Survey on Salaried Workers' Activities Outside the Workplace and Support Measures*, Ohki indicates the mainstreaming of regular employees' multiple job holding with a subcontracting model of "earning money according to work performed."

Ogura and Fujimoto (2006) analyzed the influence of workplace environment, personal attributes, and attitudes toward work on whether or not workers hold or wish to hold multiple jobs, based on the *Working Persons' Survey* 2000 conducted by Recruit Works Institute. The estimate results indicate that it has been shown that having past experience of resigning from a job or working as a "freeter" (part-time workers employed on a casual basis) was correlated with both holding and wishing to hold multiple jobs. In addition, while many of those hoping to hold multiple jobs are male employees of large companies, more of those actually holding them are female employees of small and medium-sized enterprises. There is also a tendency to hold, or hope to hold, multiple jobs among those who seek to change jobs or start independent careers, verifying the aspect of multiple job holding for the purpose of acquiring experience pointed out by Heineck and Schwarze (2004).

Takaishi (2004) used the Japan Institute of Life Insurance's *Survey on Diversification of Work Styles and Life Design* to clarify factors of multiple jobs and, as a feature of this study it adds items to verify the influence of multiple job holding on main jobs. The results of probit analysis and simple summarization indicate that factors of multiple job holding can be divided into three categories: environment, motivation, and future career intentions. Environmental factors include influences such as age, mortgage payments, annual income, short working hours, and past experience of changing jobs. Motivation factors include degree of specialization. Regarding future career intentions, the survey indicates that many multiple job holders wish to change jobs or become independent. Also, in terms of the influence of multiple jobs on lifestyle and main job, it was confirmed that multiple jobs are held in order to boost income through the effects of self-development, attain security for retirement, and safeguard against unemployment.

Kawakami (2018) added verification of the effects of self-development to existing Japanese data. Kawakami used individual data from the *Japan Household Panel Survey* to show, with results of difference GMM estimates, that a main job with an analytical nature is correlated with a higher wage rate of the main job. Similar trends are also shown in studies by Hagiwara and Toda (2016) and Ishiyama (2018). Hagiwara and Toda (2016) note that the probability of holding multiple jobs increases when the holder is employed at both main job and additional jobs. It is clarified that multiple job holding among this population tends to be correlated with high annual income and the same with a high degree of specialization, as shown by data from Recruit Works Institute's Japanese Panel Study of Employment Dynamics 2016. Ishiyama (2018) notes that the results of online surveys suggest that holding multiple jobs due to dissatisfaction with the main job has a negative influence on the main job, whereas holding multiple jobs because of seeking new skills contributes to interaction with diverse people and has a positive effect on the main job.

III. Data

To verify the hypotheses from 1 to 5 above, it is necessary to classify reasons for multiple job holding into mercenary motives and non-mercenary motives. With many surveys asking whether respondents hold

multiple jobs, however, the survey is mainly concerned with main jobs and does not inquire into reasons for holding multiple jobs. For this reason, this article employs the JILPT *Survey on Multiple Job Holding*, which focuses on the actual situations of multiple job holders. This online survey targeted monitors registered with Rakuten Research nationwide, numbering about 1.36 million (at the time of the survey), specifically men and women aged 18–64 excluding those registered under the occupations of (1) "employees of governmental or other non-corporate organizations," (2) "students of high school age or younger," (3) "unemployed," and (4) "other," totaling approximately 825,230 people.[9]

The survey was conducted between November 22 and 29, 2007, the number of valid responses was 174,318, and the response rate was 21.1%. Of these, 133,522 answered that they were working, and 122,719 respondents had only one job, 8,567 had two jobs, and 2,236 had three or more jobs. Of respondents with only one job, 2,000 cases were randomly extracted from 122,719 samples and included in the data, therefore the analysis required data reconstitution.[10] The sample size available for analysis is 12,803 (133,522 samples when data is reconstituted). It should be noted that the distinction between additional job(s) and main job is left to the respondents' judgment in this survey.

This article limits the scope of analysis based on analysis concerns and estimation issues as follows. Because this article is concerned with multiple jobs held by employed persons, the scope of analysis is limited to (i) those directly employed (consisting of regular workers, contract and temporary workers and part-time workers[11]) and (ii) those whose main or additional jobs are non-agriculture and non-mining,[12] in order to eliminate families engaged in agriculture as a side business and so forth. Considering that there are differences in job selection behavior between dependents and heads of households and that unearned income may represent household income other than the respondent's own income, the target population is limited to (iii) heads of households. Also, (iv) respondents with two or more additional jobs are excluded from the analysis. As a result, the sample size to be analyzed is 54,140 (of which employees with only one job number 51,972 and multiple job holders number 2,168, and the sample size before restoration is 3,020 in total).[13]

Note that the *Survey on Multiple Job Holding* involves the following biases: (i) because it is an online survey, its scope is limited to those with Internet access, (ii) because the survey target consists of Rakuten Research monitors, the respondent group contains many Internet users. In addition, (iii) the possibility that those interested in multiple jobs tended to respond cannot be dismissed. In fact, among valid responses to the questionnaire, 8.1% of employees held multiple jobs, which is significantly higher than the aggregate value of 3.97% on the 2007 *Employment Status Survey*.

Figure 3-1 and 3-2 compare the *Employment Status Survey* and *Survey on Multiple Job Holding* in order to clarify these biases. Figure 3-1, which compares the age structure, shows that there are few respondents to the *Survey on Multiple Job Holding* among the younger generation (20–24 years) and older people (over 50 years old). Figure 3-2 compares the industries of multiple job holders' main jobs. In the *Survey on Multiple Job Holding*, there are fewer manufacturing industry workers while more service industry workers than the

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9. Specific methods of this survey are as follows: "The research agency creates a questionnaire page that is displayed on the web. The research agency then sends an email to survey target monitors asking them to respond to the survey. In the same email, the URL of the questionnaire page is given. Those who agree to respond access the web page themselves and inputs responses to the questionnaire on the screen. When the survey is finished and the respondent clicks the send button (end button), the content of responses is automatically stored on the server of the research agency." (JILPT 2009)

10. However, in Table 1, which examines the differences between average values, the examination is carried out without applying the restorative magnification.

11. The reason for including non-regular employees such as contract employees and part-timers, rather than limiting the scope of analysis to regular employees, is that working hours tend to be restricted (in other words, not be excessively long) for non-regular employees more than for regular employees. The goal is to investigate the influence of hours constraints on additional job holding.

12. In the *Survey on Multiple Job Holding*, agriculture, forestry, fisheries, and mining are a single item. For this reason, multiple job holders in all these occupations are omitted.

13. Section IV estimates the wage rate, using the monthly wage classes from the *Survey on Multiple Job Holding*. There is an insufficient data on the monthly income class of 700,000 yen or more to find representative values of the class, so they need to be excluded from the analysis. As a result, in the analysis in Section V, 249 respondents are excluded from the sample shown here.
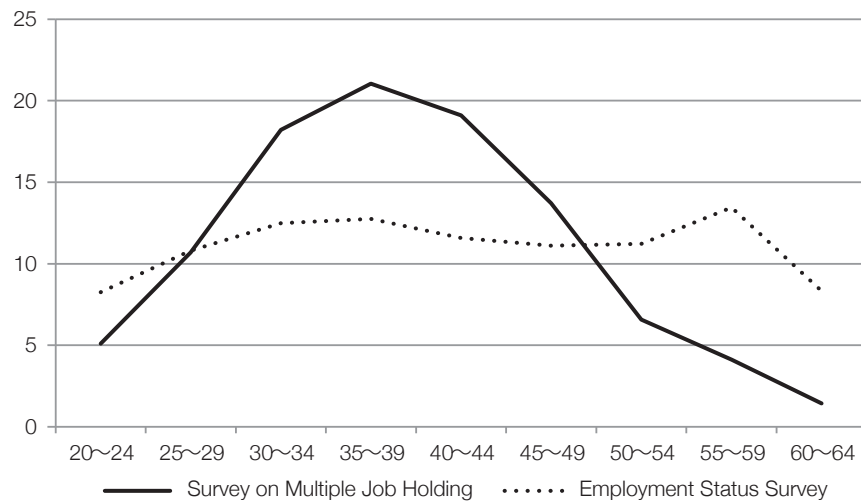
Note: The author, based on the Japan Institute for Labour Policy and Training (JILPT) *Survey on Multiple Job Holding* and Ministry of Internal Affairs and Communications *Employment Status Survey.*

Figure 3-1. Comparison of the *Survey on Multiple Job Holding and Employment Status Survey* (age comparison)
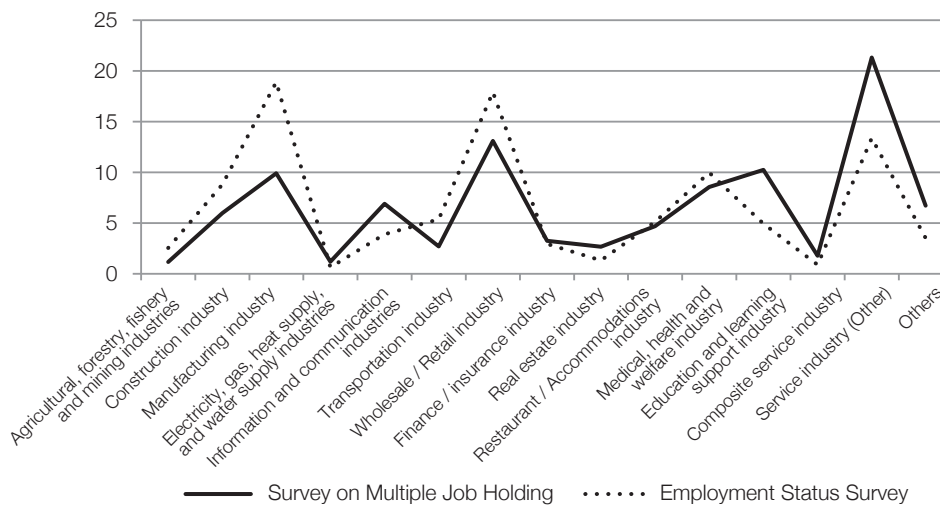
Note: See note in Figure 3-1.

Figure. 3-2. Comparison of the *Survey on Multiple Job Holding and Employment Status Survey* (main job occupation comparison)

trend. The analysis results in this article necessarily incorporate these biases.

The data's descriptive statistics are shown in Table 1. The numerical values in the table are the average values and standard deviations of the variables, the differences in value and null hypothesis test results used in the analysis of the three groups of multiple job holders, multiple job seekers (those who wish to have additional jobs but who do not have them), and multiple job non-seekers. Comparing the differences between multiple job holders and multiple job non-seekers, multiple job holders' working hours, monthly income, and unearned income are low compared to multiple job non-seekers, and the features of multiple job holding for mercenary motives indicated by Conway and Kimmel (1998) et al. can be seen.

Let us examine the overlapping tendencies of replies regarding reasons for holding multiple jobs, classifying them into mercenary and non-mercenary motives. The correlation coefficients used for overlapping

Table 1. Comparison of descriptive statistics and average values

	①Multiple job non-seekers (n=25193)		②Multiple job seekers (n=26779)		③Multiple job holders (n=2168)		③ – ① Average of the difference	② – ① Average of the difference	③ – ② Average of the difference
	Average	Standard deviation	Average	Standard deviation	Average	Standard deviation			
Working hours at main jobs (per day)	9.235	2.434	9.310	2.479	8.627	2.714	−0.608 ***	0.075	−0.682 ***
Working days at main jobs (per month)	21.550	4.085	22.032	3.266	20.833	4.716	−0.717 ***	0.482 *	−1.199 ***
Working hours at main jobs (per month)	203.448	72.019	207.688	72.223	183.644	76.111	−19.800 ***	4.240	−24.040 ***
Monthly income (Estimated record)	37.609	14.231	33.781	13.527	28.284	14.441	−9.325 ***	−3.828 ***	−5.497 ***
Unearned income (Estimated record)	581.398	266.970	510.467	244.251	467.449	288.249	−113.900 ***	−70.930 ***	−43.020 ***
Age	39.804	8.527	38.371	7.711	38.185	8.762	−1.619 ***	−1.433 **	−0.187
Women dummy	0.194	0.395	0.253	0.435	0.380	0.485	0.186 ***	0.059 **	0.127 ***
Marital status									
Married (unemployed spouse) dummy	0.291	0.454	0.269	0.443	0.140	0.347	−0.150 ***	−0.022	−0.129 ***
Married (employed spouse) dummy	0.332	0.471	0.321	0.467	0.307	0.461	−0.025	−0.011	−0.014
Bereaved or divorced dummy	0.082	0.275	0.093	0.291	0.155	0.362	0.073 ***	0.011	0.062 ***
Unmarried dummy	0.295	0.456	0.317	0.465	0.397	0.489	0.102 ***	0.021	0.081 ***
Academic background									
Graduated junior high or high school dummy	0.225	0.418	0.253	0.435	0.283	0.450	0.058 **	0.028	0.030
Graduated vocational school etc.dummy	0.119	0.323	0.134	0.341	0.143	0.350	0.024	0.016	0.009
Graduated junior college or technical college dummy	0.073	0.260	0.082	0.274	0.095	0.293	0.022	0.009	0.013
Graduated four-year university dummy	0.482	0.500	0.440	0.496	0.389	0.488	−0.093 ***	−0.042	−0.051 **
Completed graduate school dummy	0.102	0.302	0.091	0.288	0.091	0.287	−0.011	−0.011	0.000
Contents of main jobs									
Specialized or technical work dummy	0.373	0.484	0.358	0.479	0.319	0.466	−0.054 **	−0.015	−0.039
Administrative work dummy	0.211	0.408	0.157	0.364	0.113	0.317	−0.097 ***	−0.054 **	−0.044 **
Clerical work dummy	0.232	0.422	0.269	0.443	0.233	0.423	0.001	0.036	−0.035
Sales work dummy	0.077	0.267	0.096	0.294	0.117	0.321	0.039 **	0.018	0.021
Manufacturing work dummy	0.046	0.209	0.036	0.187	0.068	0.252	0.022 *	−0.010	0.032 **
Service work dummy	0.024	0.154	0.043	0.203	0.092	0.289	0.068 ***	0.019	0.049 ***
Others dummy	0.036	0.187	0.041	0.198	0.058	0.233	0.021 *	0.005	0.017
Provisions prohibiting multiple job holding									
Prohibited	0.603	0.489	0.424	0.494	0.178	0.382	−0.425 ***	−0.179 ***	−0.246 ***
Not prohibited	0.215	0.411	0.319	0.466	0.581	0.493	0.366 ***	0.103 ***	0.262 ***
Not sure	0.182	0.386	0.257	0.437	0.241	0.428	0.060 ***	0.076 ***	−0.016
Size of enterprises									
−29 employees dummy	0.213	0.409	0.301	0.459	0.339	0.473	0.125 ***	0.088 ***	0.038
30–99 employees dummy	0.174	0.379	0.210	0.407	0.190	0.393	0.016	0.035	−0.019
100–299 employees dummy	0.133	0.340	0.164	0.370	0.147	0.354	0.014	0.031	−0.017
300–499 employees dummy	0.075	0.263	0.073	0.260	0.058	0.234	−0.017	−0.002	−0.015
500–999 employees dummy	0.092	0.289	0.057	0.232	0.052	0.222	−0.040 ***	−0.035 *	−0.005
More than 1,000 employees dummy	0.293	0.455	0.187	0.390	0.179	0.383	−0.114 ***	−0.106 ***	−0.008
Not sure dummy	0.019	0.138	0.009	0.095	0.035	0.183	0.015	−0.010	0.026 ***

Note: The aggregated values are for main job and additional jobs, where work content is not agricultural, forestry or fisheries, and main job employment format of main job is regular or non-regular employee excluding temporary staff, limited-term and seasonal workers, and day laborers. Also excluded are those whose working hours at additional jobs exceed those at the main job. Weighting is not carried out in testing the differences of average values. Asterisks (*, **, ***) indicate that the null hypothesis (that the difference in mean value is 0) is rejected at the significance levels of 10%, 5% and 1% according to a *t* test.

tendencies are shown in Table 2.[14]

First, looking at the reasons for multiple job holding, the most frequent responses are "2. I want to increase my income" (57.3%), followed by "1. I cannot make a living with only one job" (29.0%) and "6. I would like to play a more active role in the workplace" (22.8%). Respondents who gives at least one of the mercenary motives (reason 1, 2, or "3. I have debts and liabilities such as loans" (14.7%)) amounts 65.4% of the multiple job holders analyzed. It is evident from the correlation coefficient that in many cases multiple job holding involves both mercenary and non-mercenary motives. (For example, those who have multiple jobs because they want to increase their income also tended to respond "4. I want to change jobs" and "9. I have free time available"). However, if we look at the correlation coefficient values, there are high correlation coefficients

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14. The variable concerning the reason for having multiple jobs is a binary variable of "Yes (= 1)" if the reason in the question is applicable, "No (= 0)" if not, the tetrahoric correlation coefficient was estimated. For more on tetrahoric correlation, see Brown (1977).

among the three mercenary motives "1. I cannot make a living with only one job," "2. I want to increase my income," and "3. I have debts and liabilities such as loans." This article classifies these items as a single group of "mercenary motives."

On the other hand, there are a significant number of multiple job holders with non-financial motives, notably "6. I would like to play a more active role in the workplace" and also including "7. I want to make connections with people in various fields" (17.7%), "10. My additional job is the one I truly like" (16.7%) etc. There are reasons related to multiple job holders' self-actualization ("6. I would like to play a more active role in the workplace," "7. I want to make connections with people in various fields," and "8. I would like to make more effective use of the expertise I have built at my current job"), reasons related to the fulfillment gained from the additional job in itself ("10. My additional job is the one I truly like") and reasons related to career formation at workplaces other than the main job ("4. I want to change jobs" and "5. I would like to become independent"). There are high correlation coefficients among these reasons, which are classified together in the group of "non-mercenary motives."

Based on these tendencies of replies, this article classifies the reasons for holding multiple jobs into four types of motives. First, multiple job holding with "mercenary motives" is defined as holding multiple jobs for one of the reasons "1. I cannot make a living with only one job," "2. I want to increase my income," or "3. I have debts and liabilities such as loans," with no other reason(s) given. Second, multiple job holding with "non-mercenary motives" is defined as holding multiple jobs for one of the reasons "4. I want to change jobs," "5. I would like to become independent," "6. I would like to play a more active role in the workplace," "7. I want to make connections with people in various fields," "8. I would like to make more effective use of the expertise I have built at my current job" or "10. My additional job is the one I truly like," with no other reason(s) given. Third, cases where one of the three "mercenary motives" and one of the six "non-mercenary motives" were cited are defined as "compound motives." Fourth, the reasons "9. I have free time available," "11. Given the nature of my main job, it is natural for me to have multiple jobs," "12. I was asked to do another job and was unable to refuse," and "13. Other" are treated as "other motives."[15]

IV. Analysis methods and results

The hypotheses derived from the theoretical model were verified using a multinomial probit model,[16] with the holding vs. non-holding or seeking vs. non-seeking of multiple jobs as explained variables. Here, employees who do not seek multiple jobs are the base group for explained variables. The main job's wage rate w_1, working hours h_1 and unearned income used to verify the hypotheses are as follows. The wage rate was obtained by dividing the monthly income reported on the survey by working hours per month, which were obtained by multiplying working days × working hours.[17] However, monthly incomes are grouped according to class rather than listed as specific numerical values, with the value representing each class obtained from the median value. Because a representative value cannot be obtained for the highest class of 700,000 yen or higher, it is excluded from the analysis.

With regard to working hours at main jobs, the *Survey on Multiple Job Holding* inquires about working hours per day and working days per month separately. Both variables are added to the estimation formula to confirm whether working hours constraints on multiple job holders with mercenary motives is due to the number of days per month or number of hours per day.

Unearned income was estimated by subtracting main job income from household income reported on the

15. "Other motivations" may overlap with mercenary and non-mercenary motives.
16. The multinomial probit model is a method used when explanatory variables are qualitative and the choices are not in any particular order. Since the multinomial logit model assumes independence from other options, a multinomial probit model was adopted here. For details of this method, see (Nawata 1997).
17. The question is "How much monthly income do you earn from your current job?" The response is before tax and social insurance fees are deducted, and does not include bonus and retirement allowance.

Table 2. Correlation coefficient between multiple job holding reasons

		Response rate (%)	1
1	I cannot make a living with only one job	29.0	1.000
2	I want to increase my income	57.3	0.160 *
3	I have debts and liabilities such as loans	14.7	0.425 *
4	I want to change jobs	4.2	−0.001
5	I would like to become independent	10.6	−0.088
6	I would like to play a more active role in the workplace	22.8	−0.152 *
7	I want to make connections with people in various fields	17.7	−0.086
8	I would like to make more effective use of the expertise I have built at my current job	12.7	−0.149 *
9	I have free time available	15.0	−0.060
10	My additional job is the one I truly like	16.7	−0.150 *
11	Given the nature of my main job, it is natural for me to have multiple jobs	5.2	−0.100
12	I was asked to do another job and was unable to refuse	14.3	−0.380 *
13	Others	3.5	−0.322 *

Note: Since multiple answers can be given for multiple job holding reasons, the total response rate exceeds 100%. The correlation coefficient is a quadruple (tetrachoric) correlation coefficient used when estimating the correlation coefficient between binary variables. Asterisks indicate that the null hypothesis with a correlation coefficient of 0 is rejected at a significance level of 1%.

survey.[18, 19] The hypotheses state that working hours, wage rates, and unearned income of main job should have a negative influence on multiple job holding with mercenary motives, but with regard to compound motives (multiple job holding with both mercenary and non-mercenary motives), unearned income has a positive influence, and there is no fixed positive or negative correlation to wage rate.

Because unearned income includes income from spouses, etc., in this case, in order to exclude its influence from the analysis, a distinction was made as to whether or not the spouse was employed, with marital status already being included as a control variable.

To take into account the specific content of length of working hours, presence or absence of overtime at the main job was added as a variable. If respondents can earn extra wages from overtime, it is expected that the need to hold multiple jobs for mercenary motives due to constraints on time and need for income will be reduced, and the tendency to hold multiple jobs will be smaller. If the number of household members is large, the impact on income necessary for living is expected to increase. Other than above, added to explanatory variables were the main job attributes of job content, industry type, and presence or absence of prohibition on additional jobs, and the personal attributes of age, gender and academic background.

Decision-making with regard to multiple job holding is considered as follows: first, employees seek multiple jobs (at this stage, the sample group is divided into multiple job non-seekers and others). Those who want to have multiple jobs can be further divided into those who actually hold them (multiple job holders) and those who seek but do not have them (multiple job seekers). Such branched choices cannot be estimated with a multinomial logit model because the choices are not independent of each other. Therefore, in the analysis, estimation is performed using a multinomial probit model, which is applicable even if the options are independent.

Table 3 shows the results of a multinomial probit analysis that assigns employees not seeking multiple jobs (multiple job non-seekers) a category variable of 0, those seeking but not having multiple jobs (multiple job seekers) a 1, and those having multiple jobs (multiple job holders) a 2, as explained variables.

Focusing on multiple job holding, we see that increases in number of working days per month and wage rate per hour have a negative effect on multiple job holding, which is consistent with the analysis results from

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18. The question is "What is your pre-tax household income bracket in the past year?" This includes income from pensions, interest, rent, dividends and inheritances.
19. There is a problem in that as indicated in footnotes 15 and 16, the working hours and wage rates are those at present, and bonus and retirement allowance are not included, but household income includes all income from the past year.

2	3	4	5	6	7	8	9	10	11	12	13
1.000											
0.290 *	1.000										
0.171 *	0.205 *	1.000									
0.073	0.086	0.438 *	1.000								
0.000	−0.086	0.361 *	0.329 *	1.000							
0.064	−0.003	0.265 *	0.225 *	0.712 *	1.000						
−0.018	−0.034	0.216 *	0.234 *	0.497 *	0.363 *	1.000					
0.122 *	−0.088	0.011	−0.039	0.088	0.172 *	0.070	1.000				
−0.129 *	−0.167 *	0.272 *	0.367 *	0.368 *	0.261 *	0.093	−0.058	1.000			
−0.155 *	−0.220 *	0.137	−0.047	0.279 *	0.111	0.316 *	−0.035	−0.067	1.000		
−0.287 *	−0.267 *	0.003	−0.107	−0.025	0.161 *	0.115	−0.097	−0.128	0.037	1.000	
−0.506 *	−0.239	−0.090	−0.215	−0.218 *	−0.113	−0.321 *	−0.201	−0.271 *	−0.242	−0.347 *	1.000

the model presented by Conway and Kimmel (1998). However, the marginal effect of unearned income had no observed effect on multiple job holding, which is inconsistent with previous research. Underlying this difference in results is the division of multiple job holding into mercenary and non-mercenary motives as described in Section III, with the results of unearned income divided into positive and negative, and results defining multiple job holding by integrating all reasons so that the unearned income variable did not produce significant results.

Based on these results, multinomial probit analysis was carried out for multiple job holding by dividing the sample group into non-multiple job seekers, multiple job seekers, mercenary motives, non-mercenary motives, combined motives, and other motives (Table 4).[20] Looking at the influence of working hours, wage rates, and unearned income, all had the effect of lowering multiple job holding due to mercenary motives. However, when the working hours are examined specifically, short working hours per day did not affect multiple job holding, while a low number of working days per month is connected to financially motivated multiple job holding. At the same time, multiple job holding for mercenary motives does not occur when there is frequent overtime work, and constraints on working hours per day can be explained by the presence or absence of overtime hours. The analysis results support hypothesis 1, hypothesis 2, hypothesis 3 relating to financially related multiple job holding. In addition, it is indicated that an increase in required income due to a large number of household members or an unemployed spouse encourage mercenary motives.

As for multiple job holding with non-mercenary motives, effects are divided into two types of cases for examination, those where there are also mercenary motives (compound motives) and where there are not (non-mercenary motives). Looking at the factors of compound motives, unearned income has a positive impact on multiple job holding, although the level of significance is 10%, supporting hypothesis 4 albeit to a limited extent. The wage rate has a negative influence, and as for hypothesis 5 we can interpret that the negative substitution effect works more strongly than the income effect. The magnitude of the marginal effect is lower, however, than that for mercenary motives, and the influence on multiple job holding of income at main job is relatively small.

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20. In the estimations below, various options are given for reasons for multiple job holding, but all reasons are combined into a single option for those who seek but do not have multiple jobs. This is because in the *Survey on Multiple Job Holding*, the options for this latter group do not include "10. My additional job is the one I truly like," "11. Given the nature of my main job, it is natural for me to have multiple jobs," and "12. I was asked to do another job and was unable to refuse" (Figure 2) thus the reasons for multiple job seekers cannot be compared to those for multiple job holders.

Table 3. Influence of individual attributes and main job attributes on additional job selection

	① Multiple job non-seekers	② Multiple job seekers	③ Multiple job holders
Working hours (per day, natural log)	−0.0187 **	0.0200 **	−0.0013
	−2.06	2.19	−0.39
Working days (per month, natural log)	−0.1482 ***	0.1667 ***	−0.0186 ***
	−13.44	14.99	−5.34
Wage rate (per hour, natural log)	0.0190 ***	−0.0084	−0.0107 ***
	2.73	−1.21	−4.44
Unearned income (per year, natural log)	−0.0042	0.0016	0.0026
	−0.73	0.28	1.21
Age (natural log)	0.1156 ***	−0.1172 ***	0.0017
	9.35	−9.35	0.32
Women dummy [Men]	−0.0622 ***	0.0580 ***	0.0042 *
	−9.37	8.67	1.67
Number of household members [1 person]			
2 persons	0.0229 ***	−0.0212 ***	−0.0017
	3.16	−2.91	−0.64
3 persons	−0.0703 ***	0.0554 ***	0.0149 ***
	−8.72	6.71	4.05
4 persons	−0.0260 ***	0.0153 *	0.0107 ***
	−3.15	1.81	2.82
5 persons	−0.0771 ***	0.0684 ***	0.0087 *
	−7.08	6.10	1.70
6 persons	0.0117	−0.0219	0.0101
	0.64	−1.19	1.16
Overtime work? (No)			
Yes, often	−0.0032	0.0247 ***	−0.0215 ***
	−0.50	3.77	−7.54
Yes, occasionally	−0.0551 ***	0.0627 ***	−0.0076 ***
	−8.45	9.51	−2.63
Marital status [Unmarried]			
Married (unemployed spouse)	−0.0097	0.0315 ***	−0.0217 ***
	−1.13	3.61	−6.40
Married (employed spouse)	−0.0074	0.0203 **	−0.0129 ***
	−0.95	2.58	−4.07
Bereaved or divorced	−0.0150 *	−0.0006	0.0156 ***
	−1.72	−0.07	3.50
Contents of main jobs [specialized or technical work]			
Administrative work	0.0657 ***	−0.0635 ***	−0.0022
	9.88	−9.55	−0.72
Clerical work	−0.0187 ***	0.0267 ***	−0.0080 ***
	−3.05	4.32	−3.43
Sales work	−0.0223 **	0.0182 **	0.0042
	−2.48	1.99	1.06
Manufacturing work	0.1025 ***	−0.1286 ***	0.0262 ***
	9.17	−11.93	4.32
Service work	−0.1616 ***	0.1508 ***	0.0108 *
	−13.26	11.71	1.91
Others	−0.0905 ***	0.0866 ***	0.0039
	−7.98	7.39	0.79
Primary employer prohibits additional jobs? [Not prohibited]			
Prohibited	0.1923 ***	−0.1350 ***	−0.0573 ***
	35.98	−24.81	−22.75
Not sure	0.0263 ***	0.0030	−0.0293 ***
	4.36	0.48	−9.35
Sample size	54140		
Chi2 value	6488.249		
Prob>chi2	0.000		
Log likelihood	−41760.000		

Note: Modeling was carried out with a multinomial probit model, with explained variables of "multiple job non-seekers" assigned a value of 0, "multiple job seekers" 1, and "multiple job holders" 2. The reported values are the marginal effect in the upper row, and the asymptotic t value in the lower row. Figures in parentheses indicate the reference group. Asterisks (*, **, ***) indicate that the null hypothesis (that the difference in mean value is 0) is rejected at the significance levels of 10%, 5% and 1% according to a t test. The results omit the results of control variables (main job occupation, company size, final academic background).

Table 4. Influence of individual attributes and main job attributes on additional job selection (multiple job seekers, by motive for holding multiple jobs)

| | ① Multiple job non-seekers | ② Multiple job seekers | Multiple job holders | | | |
			(③ mercenary motives)	(④ non-mercenary motives)	(⑤ combined motives)	(⑥ other motives)
Working hours (per day, natural log)	−0.0183 **	0.0204 **	−0.0015	0.0005	−0.0013	0.0002
	−2.02	2.24	−0.77	0.34	−0.78	0.08
Working days (per month, natural log)	−0.1484 ***	0.1665 ***	−0.0044 **	−0.0015	−0.0033 **	−0.0089 ***
	−13.50	14.96	−2.19	−1.19	−2.08	−4.53
Wage rate (per hour, natural log)	0.0193 ***	−0.0081	−0.0057 ***	−0.0006	−0.0033 ***	−0.0015
	2.77	−1.17	−4.32	−0.71	−3.00	−1.08
Unearned income (per year, natural log)	−0.0043	0.0014	−0.0033 ***	0.0010	0.0019 *	0.0032 **
	−0.75	0.25	−3.11	1.21	1.96	2.38
Age(natural log)	0.1154 ***	−0.1175 ***	0.0055 *	−0.0001	−0.0034	0.0001
	9.35	−9.39	1.78	−0.06	−1.43	0.04
Women dummy [Men]	−0.0620 ***	0.0582 ***	0.0008	0.0014 *	−0.0014	0.0029 *
	−9.35	8.71	0.54	1.68	−1.18	1.95
Number of household members [1 person]						
2 persons	0.0227 ***	−0.0209 ***	0.0005	0.0000	0.0004	−0.0027 *
	3.14	−2.86	0.30	0.01	0.32	−1.78
3 persons	−0.0705 ***	0.0555 ***	0.0086 ***	0.0001	0.0027 *	0.0035
	−8.75	6.73	3.65	0.12	1.66	1.57
4 persons	−0.0263 ***	0.0153 *	0.0073 ***	0.0005	0.0023	0.0010
	−3.19	1.81	2.87	0.35	1.35	0.46
5 persons	−0.0775 ***	0.0685 ***	0.0070 **	0.0008	0.0024	−0.0012
	−7.11	6.10	2.00	0.38	1.03	−0.42
6 persons	0.0116	−0.0219	0.0000	0.0009	0.0081	0.0013
	0.63	−1.18	−0.01	0.31	1.59	0.26
Overtime work? (No)						
Yes, often	−0.0031	0.0248 ***	−0.0071 ***	−0.0007	−0.0025 *	−0.0116 ***
	−0.47	3.78	−4.33	−0.70	−1.87	−6.28
Yes, occasionally	−0.0548 ***	0.0627 ***	−0.0033 **	0.0001	−0.0010	−0.0038 *
	−8.40	9.51	−1.99	0.12	−0.77	−1.95
Marital status [Unmarried]						
Married (unemployed spouse)	−0.0096	0.0315 ***	−0.0074 ***	−0.0036 ***	−0.0045 ***	−0.0064 ***
	−1.11	3.60	−3.52	−3.34	−2.85	−3.13
Married (employed spouse)	−0.0071	0.0206 ***	−0.0048 **	−0.0014	−0.0033 **	−0.0040 **
	−0.91	2.61	−2.48	−1.23	−2.36	−2.12
Bereaved or divorced	−0.0150 *	−0.0003	0.0038	0.0023	0.0045 **	0.0047 *
	−1.72	−0.03	1.48	1.26	2.00	1.79
Contents of main jobs [specialized or technical work]						
Administrative work	0.0656 ***	−0.0636 ***	−0.0013	0.0014	−0.0016	−0.0004
	9.86	−9.57	−0.86	1.09	−1.15	−0.22
Clerical work	−0.0190 ***	0.0265 ***	0.0024 *	−0.0012	−0.0030 ***	−0.0057 ***
	−3.10	4.28	1.72	−1.46	−2.82	−4.05
Sales work	−0.0226 **	0.0177 *	0.0028	0.0010	0.0000	0.0011
	−2.51	1.95	1.31	0.65	−0.02	0.43
Manufacturing work	0.1026 ***	−0.1289 ***	0.0107 ***	0.0026	0.0039	0.0091 **
	9.18	−11.95	3.13	1.16	1.47	2.19
Service work	−0.1617 ***	0.1500 ***	0.0107 ***	−0.0006	0.0029	−0.0013
	−13.33	11.65	2.96	−0.31	1.00	−0.46
Others	−0.0903 ***	0.0861 ***	0.0069 **	−0.0001	−0.0005	−0.0021
	−7.96	7.35	2.30	−0.07	−0.21	−0.74
Primary employer prohibits additional jobs? [Not prohibited]						
Prohibited	0.1920 ***	−0.1351 ***	−0.0164 ***	−0.0101 ***	−0.0091 ***	−0.0214 ***
	35.94	−24.84	−11.56	−9.85	−8.10	−13.95
Not sure	0.0260 ***	0.0028	−0.0053 ***	−0.0061 ***	−0.0046 ***	−0.0129 ***
	4.31	0.45	−2.85	−4.94	−3.31	−6.88
Sample size	54140					
Chi2 value	6896.871					
Prob>chi2	0.000					
Log likelihood	−44420.000					

Note: Modeling was carried out with a multinomial probit model, with explained variables of "multiple job non-seekers" assigned a value of 0, "multiple job seekers" 1, "multiple job holders with mercenary motives" 2, "multiple job holders with non-mercenary motives" 3, "multiple job holders with compound motives" 4, and "multiple job holders with other motives" 5. For more information, see the note for Table 3.

In terms of multiple job holding for purely non-mercenary motives, the attributes of the main job are a focus of attention, but do not influence any of the variables. Only for marital status, added as a control variable, there is a tendency not to hold multiple jobs when the spouse is unemployed. This result seems to indicate that the decision to use time outside the main job for leisure time, or for additional jobs with non-mercenary motives, does not depend on work at main job or on household circumstances, but it is determined by individual choice.

Regardless of motivation for multiple job holding, a prohibition on multiple job holding at the main job has an observed negative effect across the board. Even when respondents are "not sure" about whether there is a prohibition provision, it has the effect of curtailing multiple job holding, about half that of cases where it is "prohibited." At the same time, "prohibited" status also curtails the hope for holding multiple jobs.

Analysis of multiple job holding factors by multiple job holding attributes, using a multinomial probit model, showed that multiple job holding due to mercenary motives can be correlated to the factors of constraints on hours at the main job, low unearned income, and low wage rates. On the other hand, multiple job holding due to compound motives showed a tendency to be correlated with individuals with high unearned income, while the effect of constraints on working hours was small. With regard to purely non-mercenary motives, neither income factors nor working hours had an impact on multiple job holding. The above results show that there are major differences in job holder attributes depending on the reasons for multiple job holding.[21]

Table 5 shows the working styles of multiple job holders, by reason for holding. Multiple job holders with mercenary or compound motives tend to work a large number of days per month, although the difference in working hours per day is small compared to other motives. This tendency appears clearly in the frequency with which additional jobs are worked. Those with mercenary motives work additional jobs "almost every day" or "half of the week," in contrast to those with non-mercenary motives. Individuals working additional jobs "almost every day" are seen as working them after (or before) their main jobs. This is consistent with the result in Table 4 for workers with mercenary motives who do not work overtime of their main jobs. By contrast, those with non-mercenary motives tend to work additional jobs irregularly

Multiple job holders with mercenary motives tend to be employed part-time more frequently than those with other motives. The types of their work are more often related to "clerical," "sales," or "manufacturing." This suggests that for those holding multiple jobs with mercenary motives, there tends to be time required to relocate from the main job to the additional job, and the number of hours worked at main job and additional jobs tend to be close. Meanwhile, with regard to the relationship between main job and additional jobs, multiple job holders with mercenary motives tended to respond that they were "totally unrelated" and additional job(s) were "not at all useful (in terms of the main job)," their length of experience was also short compared to those with non-mercenary motives, suggesting that working multiple jobs did not contribute to formation of skills for main jobs among this population.

In contrast to workers with mercenary motives, those with compound motives and non-mercenary motives tended to work in formats with more discretion, such as self-employed or freelance, and their work content was more specialized. They tended to prepare their own workplaces, and could flexibly allocate time between leisure and main job. Their duration of experience at additional jobs was often one year or more, and they tended to respond that the additional job was useful for the main job more often than those with mercenary motives, although there was only a small degree of complementarity of content between main and additional job.

Among multiple job holders with mercenary motives, constraints on working hours were observed, as was a tendency toward substitution of additional jobs for overtime. The aggregated values in Table 5 show that this group tend to take time to travel between the main job and other jobs, and work at two jobs over the course of a day. Additional jobs are carried out in places unrelated to the main job, and not useful for the main job.

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21. Here we are unable to analyze the opposite causal relationship, i.e. that those who do not consider holding additional job(s) in the first place tend to work for companies that prohibit them from doing so.

Table 5. Comparison of attributes by reason for holding multiple jobs

	Multiple job holders						② − ① Average of the difference	③ − ① Average of the difference
	(① mercenary motives) (n=718)		(② non-mercenary motives) (n=281)		(③ combined motives) (n=419)			
	Average	Standard deviation	Average	Standard deviation	Average	Standard deviation		
Working days at multiple jobs (per month)	11.106	7.857	9.199	7.294	11.415	8.037	−1.907 ***	0.309
Working hours at multiple jobs (per day)	4.868	2.733	4.936	3.040	4.575	2.616	0.068	−0.293 *
Working hours at multiple jobs (per month)	47.909	43.212	42.726	43.301	48.527	47.368	−5.183 *	0.618
Frequency								
Almost everyday	0.170	0.376	0.107	0.309	0.167	0.373	−0.063 **	−0.003
Half of the week	0.223	0.416	0.160	0.367	0.208	0.406	−0.063 **	−0.015
One or two days of the week	0.263	0.441	0.278	0.449	0.236	0.425	0.014	−0.027
On days off from main job, such as weekends	0.127	0.333	0.146	0.354	0.162	0.369	0.019	0.036 *
Several days a month	0.132	0.339	0.157	0.364	0.119	0.325	0.024	−0.013
Indefinite (seasonal, when employees are especially needed, etc.)	0.085	0.279	0.153	0.361	0.107	0.310	0.068 ***	0.022
Monthly income at multiple jobs (Estimated record)	6.512	4.141	6.745	4.867	7.073	4.476	0.234	0.561 **
Employment status of multiple jobs								
Regular employees	0.015	0.123	0.018	0.132	0.014	0.119	0.002	−0.001
Contract and temporary employees	0.049	0.215	0.078	0.269	0.074	0.262	0.030 *	0.025 *
Part−time workers	0.602	0.490	0.214	0.411	0.296	0.457	−0.388 ***	−0.306 ***
Dispatched−type temporary workers	0.008	0.091	0.011	0.103	0.002	0.049	0.002	−0.006
Registered temporary staff	0.056	0.230	0.025	0.156	0.036	0.186	−0.031 **	−0.020
Limited−term, seasonal, or day laborers	0.013	0.111	0.011	0.103	0.005	0.069	−0.002	−0.008
Company officials	0.007	0.083	0.046	0.210	0.014	0.119	0.039 ***	0.007
Self−employed	0.046	0.210	0.149	0.357	0.146	0.353	0.104 ***	0.100 ***
Employee of or participant in family business	0.015	0.123	0.011	0.103	0.010	0.097	−0.005	−0.006
Freelance or independent contractor (including at-home work)	0.185	0.389	0.420	0.494	0.387	0.488	0.235 ***	0.201 ***
Others	0.004	0.065	0.018	0.132	0.017	0.128	0.014 **	0.013 **
Contents of multiple jobs								
Specialized or technical work	0.136	0.344	0.384	0.487	0.351	0.478	0.248 ***	0.214 ***
Administrative work	0.022	0.148	0.093	0.290	0.033	0.180	0.070 ***	0.011
Clerical work	0.169	0.375	0.103	0.305	0.079	0.270	−0.065 ***	−0.090 ***
Sales work	0.130	0.336	0.060	0.239	0.136	0.343	−0.069 ***	0.007
Manufacturing work	0.086	0.281	0.025	0.156	0.045	0.208	−0.061 ***	−0.041 ***
Transport and communications work	0.067	0.250	0.007	0.084	0.021	0.145	−0.060 ***	−0.045 ***
Security work	0.003	0.053	0.004	0.060	0.005	0.069	0.001	0.002
Work related to agriculture, forestry, or fisheries	0.001	0.037	0.000	0.000	0.000	0.000	−0.001	−0.001
Service work	0.248	0.432	0.117	0.323	0.136	0.343	−0.130 ***	−0.112 ***
Others	0.138	0.345	0.206	0.405	0.193	0.395	0.069 ***	0.055 **
Relationship with main job								
Totally related	0.014	0.117	0.028	0.167	0.029	0.167	0.015	0.015 *
Somewhat related	0.178	0.383	0.171	0.377	0.224	0.418	−0.007	0.046 *
Quite different	0.262	0.440	0.288	0.454	0.289	0.454	0.026	0.027
Totally different	0.546	0.498	0.512	0.501	0.458	0.499	−0.034	−0.088 ***
Useful for main job?								
Very useful	0.093	0.291	0.235	0.425	0.227	0.419	0.142 ***	0.133 ***
Somewhat useful	0.301	0.459	0.345	0.476	0.365	0.482	0.044	0.064 **
Not very useful	0.294	0.456	0.235	0.425	0.255	0.437	−0.059 *	−0.039
Not useful at all	0.312	0.464	0.185	0.389	0.153	0.360	−0.127 ***	−0.159 ***
Work format								
Work at a company, factory, office, etc.	0.631	0.483	0.352	0.479	0.372	0.484	−0.279 ***	−0.259 ***
Work in own workplace prepared outside my house	0.046	0.210	0.096	0.295	0.050	0.218	0.050 ***	0.004
Work in a room dedicated to work at home	0.058	0.235	0.125	0.331	0.117	0.322	0.066 ***	0.058 ***
Work in a residential room at home	0.149	0.356	0.320	0.467	0.325	0.469	0.171 ***	0.176 ***
Others	0.116	0.320	0.107	0.309	0.136	0.343	−0.009	0.020
Length of experience								
Over one year	0.606	0.489	0.762	0.427	0.671	0.471	0.156 ***	0.065 **
Over six months less than one year	0.185	0.389	0.121	0.327	0.184	0.388	−0.064 **	−0.001
Over one months less than six month	0.153	0.360	0.093	0.290	0.107	0.310	−0.061 **	−0.046 **
Over one week less than one month	0.028	0.165	0.018	0.132	0.026	0.160	−0.010	−0.002
Started very recently (just a few days ago)	0.028	0.165	0.007	0.084	0.012	0.109	−0.021 **	−0.016 *

Note: See Table 1. Note that the sample sizes for multiple job monthly salary estimates are 687 for mercenary motives, 261 for non-mercenary motives, and 379 for compound motives.

Multiple job holding with non-mercenary motives tends not to be correlated with constraints on working hours at the main job. Underlying this is the frequency among this group of self-employed multiple job holding, which allows flexible choice of working hours, and which effectively utilizes unoccupied time. Although the contents of main job and additional jobs tend to differ, respondents often said the additional job contributed positively to their main job, and while this observation is based on subjective answers, multiple jobs appear to have benefits in terms of self-development.

V. Conclusion and issues

This article has generalized the multiple-job labor supply model of Casacuberta and Gandelman (2012), and hypothesized about how the influence of main jobs' working hours, wage rates, and unearned income on the multiple-job labor supply ought to differ depending on motives for holding multiple jobs. The article verified these hypotheses with a multinomial probit model using data from the *Survey on Multiple Job Holding* and compared the contents of side jobs among multiple job holders with different motivations. The following points became clear.

Multiple job holders with mercenary motives tend to have low household incomes, and short working hours and low wage rates at the main job are factors that encourage these employees to work additional jobs. Examining the detailed attribute of working hours, we see that fewer monthly working hours, and short working hours manifested as a difference in number of overtime hours, are positively correlated with multiple job holding. We can interpret these workers as holding part-time jobs that tend to have short working hours. In addition, the fact that employees who work overtime do not have multiple jobs suggests that additional jobs held with mercenary motives are substitutions for overtime work at main jobs. A high percentage of those holding multiple jobs due to mercenary motives are employed as part-time workers, and a high percentage work at factories or business establishments, doing work with content that differs from that of their main job and tends not to contribute usefully to the main job.

Multiple job holders with non-mercenary motives can be divided into those with compound motives (where mercenary motives are also present) and those with purely non-mercenary motives, and the two groups showed different tendencies. With compound motives, workers tend to hold multiple jobs if the number of working days per month and the wage rate are low at their main jobs, and low income from the main job is interpreted as encouraging multiple job holding. However, higher unearned income is also correlated with holding multiple jobs. This supports the hypothesis that when unearned income is high, additional jobs play a partly leisure-oriented role entailing reduced working hours at main jobs. The data suggests that multiple job holding in such cases is not greatly linked with constraints on working hours. The negative effect of overtime on multiple job holding was small in comparison with the mercenary motives group.

For those with purely non-mercenary motives, the influence of attributes used in the analysis in this article could hardly be observed in terms of personal attributes or main job contents, and multiple job holding appeared to depend on differences in individual preferences. However, examination of the content of multiple jobs shows a strong tendency for additional jobs to have a self-employed or freelance format, and the duration of experience tends to be long. While their contents may not relate to those of the main job, additional jobs were viewed as being useful for main jobs, suggesting a self-development effect contribution to the main job.

It appears valid to say that multiple job holding with mercenary motives is detrimental to the holder. Because time at the main job is constrained, multiple job holders take time to commute and relocate from their main jobs and engage in another job. This means sacrificing free time, which is seen as a significant burden especially for the child-rearing generation.[22] In addition, skills obtained at each job are independent of one another, and holding additional jobs does not lead to productivity improvements for the business owners

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22. Oishi (2015) shows that there is a tendency toward multiple job holding among single mothers who hope to see their children receive higher education.

that are either primary or additional employers. In that respect, to ensure these workers secure the necessary income only at their main jobs, employers must bring overtime and working hours closer to the standards of regular employees. For example, even if wages rise along with a hike in the minimum wage, it is also necessary to ensure sufficient working hours in order to reduce the undesirable state of multiple job holding.[23]

Meanwhile, multiple jobs held with non-mercenary motives tend to be substituted for leisure time rather than for insufficient working hours at main jobs. One reason for this is that among self-employed additional job holders, working hours can be flexibly chosen. Meanwhile, multiple job holders with non-mercenary motives tended to respond that their additional jobs made useful contributions to their main jobs, suggesting that multiple jobs may entail a self-development effect. In contrast to multiple job holding with mercenary motives, non-mercenary motives could encourage workers to control the workload at their additional jobs so as not to interfere with their main jobs, which may lead to improvements in employees' productivity.

That being said, the results outlined in this article leave many issues unresolved. In seeking to analyze multiple jobs as a whole, this article was not able to analyze detailed reasons for holding them, because it employed the generalized framework of mercenary, non-mercenary, and compound motives. Especially with regard to the self-development effect that appeared present for multiple job holders with non-mercenary motives, there is a need to clarify conditions for obtaining this effect, including its measurement. These measurement results could be utilized as one index when evaluating provisions prohibiting multiple job holding. Meanwhile, with regard to the effect of avoidance of unemployment risk, it is necessary to trace the survey subjects using panel data and to observe unemployment trends among multiple job holders. This point is especially significant with regard to multiple job holding based on mercenary motives, and further attempts at verification are needed.

Regarding the data from the *Survey on Multiple Job Holding* used in the analysis, shown in Figure 3-1 and 3-2, biases in terms of respondents' age and the industries of main jobs must be noted, and more detailed investigation and analysis are required.[24]

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23. Neumark, Schweitzer and Wascher (2004) analyzed data from the US and demonstrated that raising the minimum wage encourages adjustment not only of the number of employees but also their working hours.

24. There are already many statistics and questionnaire surveys that give a picture of multiple job holding. Governmental statistics include the MIC *Employment Status Survey*, and questionnaire surveys include the JGSS Research Center *Japanese General Social Surveys*, the Panel Data Research Center at Keio University *Japan Household Panel Survey*, and the Recruit Works Institute *Survey on Employment of Experienced Workers*. Further analysis using this relatively unbiased data to explore multiple job holding factors could be carried out. However, such an analysis could not include classification of multiple job holders or seekers as in this article because they do not cover reasons for multiple job holding.

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