Working as an Independent Contractor in Japan and the U.S.: Is It a Good Option for Married Women with Young Children?*

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This research focuses on married women with children, and asks whether independent contract work, which is known as offering freedom and flexibility, is really an attractive option for such women, through a comparison of data from Japan and the U.S. The analysis results show that in both Japan and the U.S., women are more likely to be employed in independent contract work if they have children under the age of six, and that the greater the number of children they have the more likely they are to be employed as independent contractors. This indicates that it is an employment format that offers future opportunities when considered from the perspective of work-life balance. On the other hand, regular employees earn 1.5 times (in the U.S.) to 2.3 times (in Japan) the income of independent contractors, and the benefits and working conditions for independent contractors are poor. Furthermore, the probability of independent contractors falling into a situation where they are working for low pay or long hours is higher than regular employees by 17.1% points and 16.2% points, respectively, in the U.S., and by 47.1% points and 30.0% points, respectively, in Japan. This research established that independent contractors in Japan are particularly at risk of falling into "bad jobs" when compared to those in regular employment. This difference in benefits, etc., when compared with regular employees, can be partially accounted for by individual differences in educational attainment, social experience, residential area, etc., as well as individual preferences, but there is a significant proportion that remains unexplained by these factors.

I. Introduction

"Independent contract work" is a type of employment that has recently been gaining significant attention in Japan. The term describes a self-employed person who enters into an outsourcing contract with a company, enabling them to work at their own discretion. An independent contract represents what has conventionally been known not as "employment," but rather, as a type of "self-employment." However, the traditional occupations in which self-employed people may have worked in the past—individually run stores and restaurants—have been decreasing, and are being replaced by industries such as publishing, advertising, and computer-related professions, which conventionally had far larger proportions of regular employees.

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In Japan, people working based on independent contracts still represent a small proportion of the overall workforce, but this proportion is growing year by year. Research by Yamada (2007) is an example of research that has collected macro-level data on independent contract employment. Yamada used the National Census to calculate the number of "unemployed self-employed people" in industries considered to have a large proportion of independent contractors. This figure totaled 1.141 million people (1.8% of the total workforce) in 2005, which was an 80% increase over the 2000 figure of 633,000 people.

In the U.S., on the other hand, independent contract work is significantly more common than in Japan, and has become a more typical form of non-standard employment than working via an agency or as a contracted employee. According to a Supplemental Survey done as part of the Current Population Survey (CPS) by the U.S. Labor Department's Bureau of Labor Statistics (BLS), as of February 2005 there were an estimated 10.34 million independent contractors in the U.S., representing a total of 7.4% of all workers (while, incidentally, employees hired through staffing agencies comprised no more than 0.9%). This indicates that out of all those employed in outsourcing,[1] approximately 70% are working under independent contracts. Furthermore, independent contracts cover around 60% of all self-employed people, making them a bigger presence than the conventional self-employment trades such as individual store owners (BLS 2005).

While the prevalence of independent contract work differs, the reasons behind people choosing to work as independent contractors are similar in both Japan and the U.S.: freedom and flexibility. As the name suggests, independent contracts allow individuals to undertake a contract that allows them to work in a location of their choosing during hours that can be set at their own discretion, as well as allowing them to specify their own work methods. This is attractive to many. The U.S. CPS Supplemental Survey, for example, includes a question category asking "What was your reason for selecting your current job?" to which 27.9% of independent contractors responded "[Because it allowed me to have] job freedom." Combined with the two additional responses "Because I prefer to work without being formally employed" (33.4%) and "For personal or family reasons" (9.9%), more than 70% of independent contractors in the U.S. indicated freedom or flexibility in their jobs as their reason for selecting this format. In Japan, a Survey of Attitudes towards Work Styles implemented in 2004 by the Japan Institute for Labour Policy and Training (JILPT) asked similar questions, which, while it did not produce such high figures as in the U.S., demonstrated that nearly 30% of independent contractors gave "job freedom" as their reason for choosing this work style.

The image of an independent contractor that is naturally conjured up from these statistics is someone who requires freedom and flexibility in their work style. People with family members who require nursing care, for example, or those with disabilities, as well as

[1] "Outsourcing" is the term used to describe independent contracts, temporary employment, the work of employees hired through staffing agencies and contract employees. According to DiNitale (2001), these styles of work are referred to as "alternative work arrangements."

women raising children, need to ensure a work-life balance (WLB), and presumably prefer a more flexible style of working. In Japan, these categories of people have conventionally found it difficult to become employed, or have had to work for very low wages, and have been the subject of policy support aimed at people at a disadvantage in employment. In the future, however, as work based on independent contracts becomes a more normalized job format, such people will find they have greater opportunities of employment, and as a result, they may find they have the ability to escape being the focus of policy support. Therefore, promoting policies that encourage the greater application of independent contract work could kill two birds with one stone, having the effect of solving the shortages within the labor force, while at the same time releasing people from their employment disadvantage.

There is an urgent need to verify whether or not desirable and positive employment opportunities are being provided for independent contractors. Given the premise that if all other conditions are equal, independent contracts are being selected by people with a high degree of need for a WLB, then such people (those with a high degree of need for WLB) will be seen in the data to represent a higher proportion of independent contractors than average workers (the "employment ratio hypothesis"). Furthermore, it should be possible to observe that the benefits and working conditions of contracted employment are no worse than conventional employment formats, and that such contracted workers are not working in "bad jobs" (the "non-bad job hypothesis"). "Benefits" and "working conditions" as used here indicate both income and health insurance and other benefits, but job satisfaction and whether or not a worker works long hours are also considered to be indirect indicators.

This research focuses on married women with children, a group that is considered as having a particularly high level of need for WLB, and implements analysis to establish whether the two theories above are supported by statistics. The issues being considered through this analysis include whether or not independent contract employment is actually allowing women in this category to genuinely achieve WLB or not, and whether it appears to offer future opportunities. The objective of the analysis is to establish whether women select independent contract work purely out of a sense of choice, or whether in fact they are unavoidably trading WLB for poor benefits and conditions.

Few surveys have been done either in Japan or the U.S. on independent contractors, but in the course of this research the author was able to make use of indicators from two comparable representative surveys, in the form of the CPS February Supplemental Survey (U.S. Labor Department's Bureau of Labor Statistics) and the Integrated Survey into Japanese Working Practices (JILPT). The former is a large-scale national survey of the state of workers in non-typical employment formats (including independent contractors) and fixed-term employment, while the latter was also a national-level survey of the state of workers in a range of employment formats, including independent contractors. Furthermore, since both surveys were implemented in 2005, they facilitate a comparison of Japan and the U.S. at a similar point in time.

This research has three particular features compared to existing research. The first is

that it includes an aspect of comparison between Japan and the U.S. Through comparing the structures of independent contract work for married women with children in two different economic environments, the unique features of independent contract work in the two countries, as well as the future potential and issues for independent contract work in Japan, can be identified. The second is that it brings together frameworks for comparative research between Japan and the U.S. (in terms of scope and implementation methods, etc.). Previous research in Japan and the U.S. has often produced differing results, but it has been impossible to tell whether this was due to the difference in the scopes of their research or their verification methods, or just due to the difference between Japan and the U.S. Unifying the research framework is thought to allow the differentiation of these issues. The third unique feature is that this research focuses on married women who are currently raising children, a particularly significant group in terms of social policy from the viewpoint of addressing declining birth rates and promoting gender equality.

II. Previous Research

As indicated by Yamada (2007), independent contracts are considered an attractive form of work for people wanting to balance their work and aspects of their home lives, such as raising children. Since independent contracts involve commissions from companies to undertake specific tasks, they should give workers a high level of discretion to select when, where, and how the job is done. Further examination is needed, however, to see if this is actually the case.

In fact, other than Zhou (2006), almost no verification has been carried out on the "employment ratio hypothesis," focusing on independent contract work, either in Japan or in the U.S. Zhou (2006) implemented an empirical analysis on Japanese independent contract work, which demonstrated that the attributes of being female, having children, and being married were not, in fact, raising the proportion of those selecting independent contract work.

At the same time, in the U.S., significant quantities of verification analysis have been carried out regarding the relationship between women's WLB and broadly-defined self-employment, although this is not restricted to independent contract work, and a number of results suggest consistency with the "employment ratio hypothesis." According, for example, to the analysis of Edwards and Field-Hendrey (2002), a higher proportion of women with small children work at home than other women. Furthermore, among women who choose to work at home, a particularly high proportion of women who are the mothers of small children choose self-employment. Furthermore, Wellington (2006) used panel data from the 1970s to the 1990s in the U.S. to analyze employment selection behavior by white, married women between the ages of 22 and 40, and found that women with younger (pre-school) children and women with greater numbers of children were far more likely to be self-employed. This trend was even more pronounced among women with better aca-

demic backgrounds. Notably, as indicated by Carnoy (2000), even though self-employment was broadly considered as a good option for women raising children, allowing them to maintain a WLB, it was not considered a realistic option by many women, particularly those with poorer academic backgrounds or those with fewer skills.

On the other hand, previous research in both Japan and the U.S. has largely produced negative results regarding the "non-bad job hypothesis," which states that independent contract work does not necessarily offer poorer benefits and working conditions. Zhou (2006), for example, states that the average annual income of an independent contractor in Japan is around 1.5 million yen lower than that of a regular employee, and that insurance and other benefits remain at low levels. Kalleberg, Raskin, and Hudson (1999) implemented a verification analysis that showed the scores of benefits and working conditions for female independent contractors in the U.S. were 43% lower than those of regular female employees.

Previous research in both Japan and the U.S., however, has been diverse in terms of its scope, analysis period, estimation models, estimation methods, etc., and it has been difficult to identify the factors leading to conclusions that either support or do not support the theories. This research, therefore, reconsiders the employment ratio hypothesis and the non-bad job hypothesis, in the light of a unified research scope (married, working women aged between 18 and 45) and analysis period (2005), and using the same estimation model and methods.

III. Data and Research Model

1. Data

Two data sources are used in this research. The first is Japanese, in the form of JILPT's Integrated Survey into Japanese Working Practices, which was implemented between August and September 2005. The second is the individual survey data on the February Supplemental Surveys of the "Current Population Survey, Contingent and Alternative Employment Arrangements" collected by the U.S. Labor Department's BLS in February 2001 and 2005.

The Integrated Survey into Japanese Working Practices was a mail survey of 3,000 regular employees, 3,500 non-regular employees, and 3,000 people who run their own businesses or who work for a family business, all of whom were selected in an indiscriminate way from among survey volunteers contacted through Intage Inc. Of the people surveyed, valid responses were received from 1,576 people running their own businesses or working for a family business (52.5% valid response rate). In this research, an "independent contractor" is defined as someone who fulfills all three of the following conditions: he/she "works without an employer" (this excludes company directors, people working for a family business, or self-employed business owners who are in the position of hiring others), "does not take instruction from anyone regarding the way in which he/she works," and "is able to decide by him/herself when to start work and how long to work for." The survey

results contained 613 subjects who met all three of these conditions, of whom 187 subjects were married working women between the ages of 18 and 45.

At the same time, the CPS February Supplemental Survey is an additional CPS survey implemented alongside one of the largest-scale monthly surveys in the U.S., which has a history that spans more than 50 years. The CPS February Supplemental Survey is implemented with the aim of understanding how many people are working in non-typical employment or fixed-term employment, as well as their job status, and it has been carried out five times to date (in 1995, 1997, 1999, 2001 and 2005). In this research, the author uses survey data from the two most recent separate surveys. Two years' worth of data gave a total of 127,581 subjects, of which 17,714 were married working women between the ages of 18 and 45. Of these subjects, 71.0% were regular employees, 21.6% were working in part-time jobs, and 2.6% (461 people) were independent contractors. For the purpose of this research, the definition[2] of "independent contractors" is people who meet the following three criteria in the CPS February Supplemental Survey: they are "workers treated as individual consultants or freelancers," "not employed by a third party," and "not employers."

Of these subjects, while the U.S. CPS survey is in the form of panel data, since there were extremely few subjects who matched the criteria, in this research, the survey is used not as panel data but as cross-sectional data. Cross-sectional estimations, however, require the presumption that variables such as preferences regarding marriage, the expected number of children, etc., have no relationship to employment preferences. In fact, decisions regarding when to get married and how many children are wanted are highly likely to be made at the same time as considering whether or not to have a job, or what form of work is to be selected, and as a result, this presumption is problematic. If a good instrumental variable were available, this problem of endogeneity could be sufficiently solved through methodology, but finding an appropriate instrumental variable is not necessarily a simple matter. In order to solve this problem of endogeneity with cross-sectional estimations, therefore, in this research, we restricted the scope of estimations to married, working women aged between 18 and 45. By doing this, the author was able to remove variables with a strong possibility of endogeneity (whether or not a subject was married, and whether or not they were working) from the estimation models. At the same time, restricting the scope to working women removes work/non-work behavior from the scope of analysis, allowing a simple model for analysis, which focuses solely on selection of work format.

2. Theories and Verification Models

Much of the previous research looks at the decision to select a particular work format within the framework of "maximizing utility" (Willington 2006). In other words, if the anticipated income from independent contract work is higher than the anticipated income

[2] The CPS February Supplemental Survey identifies independent contractors as "workers treated as independent consultants or freelancers," since it does not collect information relating to "work style" or "starting time or time spent at work."

from other work formats, the "utility" gained by independent contract work is maximized, making the selection of independent contract work a natural one for rational individuals. However, when using the framework of maximizing utility in research that focuses on married women with children, who are the very subjects of this research, it is necessary to consider the impact that the presence of children has on the selection of a work format.

Say, for example, that a woman with children has decided to work H_w hours per day, and to spend the rest of her available time in childrearing. Since independent contract work (or self-employed work) allows her to select her workplace and working time with comparative freedom, it is possible for her to spend a proportion of the time she is working, defined as αH_w ($0 \leqq \alpha \leqq 1$), in childrearing activities. Employees, however, are unable to do any childrearing activities, in principle, during the time in which they are working. Regardless of the employment format, women incur childcare costs during the time that they are not able to look after their own children, which we will cost at C yen per hour. If independent contract work is paid at rate W_{ic}, and employees' rates of pay are defined at W_e, the following relational expression is created:

(Net) anticipated income for an independent contractor: $I_{ic} = W_{ic} \times H_w - C \times (1-\alpha) H_w$ (1)

(Net) anticipated income for an employee: $I_e = W_e \times H_w - C \times H_w$ (2)

Difference in (net) anticipated incomes: $I_{ic} - I_e = H_w \times (W_{ic} - W_e) + \alpha \times H_w \times C$ (3)

The decision for a married woman with children as to whether or not she should become an independent contractor will depend on the difference in anticipated (net) incomes (formula [3]) above). The higher the cost of childcare (C) and the higher the proportion of work time that can be combined with childrearing activities (α), the higher the likelihood of selecting work as an independent contractor. For this reason, the increasing cost of childcare, the increasing proportion of working mothers with very young children, for whom childcare costs are higher, and the increasing number of independent contractor jobs that can be combined with childrearing (for example, jobs involving work on computers or via fax, which can be done from home), may be sociological reasons for the increase in independent contracting work.

Furthermore, in addition to C and α, unearned income such as income from a woman's husband, and individual preferences, also impact the selection of work format. For example, the higher a household's unearned income, the easier it is to provide startup costs (such as the purchase of a computer or initial startup capital, etc.), which results in increasing the proportion of independent contractors. In other words, as shown in formula (4) below, the probability of becoming an independent contractor is influenced by C, α, unearned income and individual preference.

Pr (work format = independent contractor)
= f (C, α, unearned income e.g. husband's income, individual preferences) (4)

Let us consider the probability of a woman choosing to become an independent contractor if given five possible choices of work format (1= regular employment, 2= part-time work, 3= contractual work or work found through a staffing agency, etc., 4= conventional self-employment, 5= independent contracting). If the IIA hypothesis[3] (Independence of irrelevant alternatives), which assumes the independence of each possible choice, is proven, then it will be possible to use a multinomial logit model to estimate the probability of selecting independent contract work. Using one work format (in this case, 1= regular employment) as a benchmark, the probability of an individual i with attribute X_i selecting option j (in this case, $j=5$) can be expressed using the following logistic distribution:

$$P(y_i = j \mid X_i) = \frac{\exp(X_i \beta_j)}{1 + \sum_{j=2}^{5} \exp(X_i \beta_j)} \qquad \text{j=2,3,4,5} \tag{5}$$

With $X_i \beta_j = \beta_j^0 + x_i^1 \beta_j^1 + x_i^2 \beta_j^2 + x_i^3 \beta_j^3$

x_i^1 : Variable expressing the cost of childcare (the number of pre-school aged children and whether the woman has children who are minors).
x_i^2 : Household income (excluding income of the subject)
x_i^3 : proxies for α (type of job, industry),
Proxies for individual preferences (academic background, race, age, area of residence)

When using a multinomial logit model, the signs of explanatory variable's parameter and the explanatory variable's marginal effect will not necessarily be the same (Norton, 2009). To be able to judge whether the explanatory variable x_i^k increases the possibility of selecting independent contract work, the marginal effect value must be calculated, instead of judging merely by the sign of parameter.

IV. Verification Results

1. Descriptive Statistics

Table 1 shows a summary of the work status of married women between the ages of 18 and 45, by the age of their children. The percentage of women who work, and their work format, can be seen from Table 1 to be closely related to the number of children a woman

[3] With the objective of verifying the validity of this IIA hypothesis, calculations were carried out on two models – one with options "3= contractual work or work found through a staffing agency, etc." and "4= conventional self-employment" dropped, and one with all five options available – and the Hausman Test was used to verify whether the estimated coefficients for the two models were statistically different or not. As a result, the IIA hypothesis was accepted, for both the Japanese and American data sets.

Table 1. Ages of Children and Work Status of Married Women Aged 18-45

	Overall (Married women aged 18-45)			Youngest child aged 3 or under			Youngest child aged 3-6		
	U.S. 01	U.S. 05	Japan 05	U.S. 01	U.S. 05	Japan 05	U.S. 01	U.S. 05	Japan 05
Percentage in work	68.1	66.9	61.7	52.7	52.7	33.1	61.9	62.1	49.6
Breakdown of those in work									
Regular employees	71.4	70.6	28.2	62.1	62.7	57.5	64.8	64.0	22.9
Part-time employees	21.4	21.8	46.1	29.4	28.5	23.4	27.4	27.5	50.8
Contractual/dispatcher worker or temporary employees	2.1	2.3	11.8	1.9	2.5	8.5	2.2	2.2	9.8
Self-employed (other than independent contractors)	2.6	2.7	12.0	3.0	2.8	8.5	2.9	3.4	14.8
Independent contractors	**2.5**	**2.7**	**1.8**	**3.7**	**3.5**	**2.1**	**2.7**	**2.9**	**1.6**
Sample size	12,755	13,753	807	2,980	3,308	148	1,906	2,157	127
Of whom in work	8,601	9,113	490	1,553	1,738	47	1,166	1,321	61

Sources: Compiled by the author using U.S. Data from BLS CPS February Supplemental Survey (2001, 2005), and Japanese data from a separate JILPT survey (Survey into the Work Styles of Japanese People 2005). The Survey into the Work Styles of Japanese People 2005 was implemented in regard to 8,000 Japanese men and women aged between 20 and 65 throughout Japan, selected from the Basic Resident Register, via home visits, and is considered highly representative. The survey resulted in 4,939 valid subjects, with a 61.7% response rate.

has, and the age of her youngest child. In sum, (1) the proportion of women who are employed when they have a very young child, particularly when their youngest child is below the age of three, is very low in both Japan and the U.S., and (2) a high proportion of working women in the U.S. whose youngest child is under three years old are independent contractors; both of these facts are consistent with the employment ratio hypothesis mentioned above.

Next, we see that looking at the attributes of the analysis subjects by work format also gives a result consistent with the employment ratio hypothesis. Table 2 shows that between 40% and 60% of independent contractors have children under the age of 6 (compared to between 30% and just under 50% of regular employees), and that independent contractors are raising, on average, 1.6 minor children (compared with 1.3 to 1.4 among regular employees). Hence, all indicators show that independent contractors belong to a group for which childcare costs are relatively high.

On the other hand, taking a look at the benefits and working conditions of independent contractors, by average annual income[4], in comparison with an average annual income among U.S.-based independent contractors of 2.333 million yen (calculated at one US dollar = 100 yen), the average annual income of Japanese independent contractors is only 1.599 million yen (Table 2). While the average annual income of independent contractors in the U.S. is slightly higher than in Japan, the positioning of independent contractors' annual salaries somewhere in between those of regular employees and part-time employees is similar in both countries. Of course, it would be premature to automatically judge from this difference in average annual income that independent contractors' working conditions equate to them being in a "bad job." Concluding whether or not a job is a "bad job" depends on being able to control for other conditions such as educational attainment, social experience, profession, area of residence, etc., and comparing independent contracting with conditions available in other work formats. Detailed verification in regard to this is given in Section 3 below.

2. Verification of the Employment Ratio Hypothesis

Table 3 shows the results of cross-sectional estimations using a multinomial logit model. In order to make the table a printable size, only coefficient parameters for independent contracting (choice 5) are reported. The benchmark used is regular employment.

Both the dummy of youngest child under six and the number of children under 18, which are the two variables that indicate childcare costs—the issue most requiring attention—are shown definitively to be factors impacting the proportion of women working as independent contractors. Comparisons of women whose youngest child is under six, for example, with those who are not in that situation, shows that the proportion of such women

[4] "Annual income" here is defined on a tax-inclusive basis. The income of self-employed or independent contractors is not the total income of their business, but rather their individual income once costs have been deducted.

Table 2. Attributes of Married Working Women Aged 18-45, Viewed by Work Format (2005)

	U.S. 2005					Japan 2005				
	Regular employees	Part-time employees	Contractual/ dispatcher workers etc.	Self-employed persons (other than independent contractors)	Independent contractors	Regular employees	Part-time employees	Contractual/ dispatcher workers etc.	Self-employed persons (other than independent contractors)	Independent contractors
Age	35.7	35.5	35.2	36.9	36.9	36.4	36.7	36.6	36.4	37.3
Graduated junior high school (%)	6.1	5.9	7.9	4.9	4.9	1.9	2.9	0.5	3.2	3.7
Graduated senior high school (%)	27.3	28.6	19.4	25.0	21.3	35.4	49.3	41.1	32.3	28.9
Graduated junior college or vocational school (%)	29.6	32.6	31.3	31.6	35.7	36.9	36.6	32.5	38.3	34.8
Graduated university (or graduate program) (%)	37.1	32.9	41.4	38.5	38.1	25.8	11.1	25.9	26.2	32.6
Annual personal income (in 10,000 yen units)	351.5	166.8	230.3	227.6	233.3	372.1	89.6	163.1	158.5	159.9
Household income (in 10,000 yen units)	726.1	671.7	678.5	706.3	718.4	965.2	494.0	586.6	697.2	760.2
Youngest child under 6 (%)	30.8	44.4	34.4	38.1	40.6	48.1	71.5	59.4	78.0	63.1
Number of children under 18	1.3	1.8	1.6	1.7	1.6	1.4	1.8	1.4	1.9	1.6
Sample size (max.)	6,889	2,260	227	244	244	260	655	197	313	187

Sources: Results of U.S. Data from BLS CPS Supplemental Survey (February 2005), and Japanese data from JILPT Integrated Survey into Japanese Working Practices (August 2005).

Note: When calculating annual income, one U.S. dollar is taken as equal to 100 yen.

Table 3. Determinants of Working as an Independent Contractor (Cross-Sectional Estimations)

Benchmark = regular employment	U.S. 2001	U.S. 2005	U.S. 2001-2005	Japan 2005
	Marginal effect (S.D.)	Marginal effect (S.D.)	Marginal effect (S.D.)	Marginal effect (S.D.)
Youngest child under 6	0.025 ***	0.021 **	0.022 ***	0.002 ***
	(0.009)	(0.008)	(0.006)	(0.018)
Number of children under 18	0.002 *	0.009 ***	0.006 ***	0.005 *
	(0.002)	(0.003)	(0.002)	(0.005)
Age	0.002 *	0.003 ***	0.002 ***	0.001 ***
	(0.001)	(0.001)	(0.001)	(0.001)
Senior high school graduate	-0.020	-0.015	-0.019 *	-0.044 **
	(0.007)	(0.006)	(0.006)	(0.029)
Junior college/Vocational college graduate	-0.012	0.004	-0.004	-0.034 **
	(0.005)	(0.004)	(0.003)	(0.025)
University (graduate school) graduate	0.002	-0.014	-0.007	-0.017 ***
	(0.008)	(0.005)	(0.005)	(0.022)
Log (Household annual income) (excluding annual personal income)	0.004 **	0.005 **	0.004 ***	0.065 ***
	(0.004)	(0.002)	(0.003)	(0.034)
Racial dummy	Yes			No
Regional dummy	City population size			Regional block
Log likelihood	-2952.6		-6376.8	-4711.5
Sample size	2,637		5,501	3,808

Notes: 1. All of these results were estimated using multinomial logit models.

2. Estimated results for "part-time workers," "employees hired through staffing agencies and contracted employees, etc." and "self-employed persons (other than independent contractors)" have been omitted from this table.
3. The marginal effect has been calculated for each subject, and the average treatment effect and standard deviation (SD) reported.
4. *, **, and *** indicate that the estimated coefficients are not zero, at a confidence level of 10%, 5%, and 1% respectively.

who work as independent contractors is 2.1-2.5% points higher among married women in the U.S. Furthermore, with every additional child under the age of 18, the probability of a woman working as an independent contractor rises between 0.2-0.9% points. Similar trends can be seen among married women in Japan. The cross-sectional estimation results for both Japan and the U.S., therefore, can be said to be consistent with the theoretical model proposed in 3.2 above; the ratio of independent contractors to workers in other employment formats is higher among women with preschool children and among women with greater numbers of children under 18.

The marginal effect of childcare costs in Japan is slightly smaller than in the U.S. For

example, in Japan, a mother with a child under the age of six is only 0.2% points more likely to be employed as an independent contractor, and the effect is 1/10 of that seen in the U.S. The background to this difference is thought to be in the difference between childcare center systems and childcare costs in Japan and the U.S. In Japan, a significant amount of public money is invested in licensed childcare facilities, and the cost of childcare is reduced to less than 1/4 of its actual value (Zhou, Oishi, and Ueda 2003). On the other hand, childcare facilities in the U.S. have almost no public funding, and therefore the cost is significantly higher. Since the market price of childcare that women with young (particularly pre-school) children in the U.S. are faced with is so much higher than in Japan, the marginal effect of the two variables relating to the cost of raising children (youngest child under six, number of children under 18) is very likely to be larger for the U.S. than it is for Japan.

To summarize the above information, for married women with children, independent contracting is thought to offer opportunities and future prospects from the perspective of WLB. The ability to select the time and location of work means that independent contracting allows women to at least partially reduce the costs of childcare while they are at work, and also offers them the attractive option of being able to spend more time with their children. Both Japanese and American data support the idea that the higher the cost of caring for children, the higher the probability is that a woman will become an independent contractor. This is a clear result of the fact that for such women, independent contracting offers an opportunity for a job future.

The analysis above gives differing results to those in Zhou (2006), which showed that the attributes of being married and having children did not increase the possibility of becoming an independent contractor. This is thought to be as a result of using different data, a different scope of analysis, different estimation methods, and different verification models. The results contained in this paper are considered as potentially more accurate for three reasons. Firstly, while the postal survey used in this research had a valid response rate of 52.5%, the response rate in the Internet survey used by Zhou (2006) was non-measurable and therefore unclear (although the response rate calculated against the number of survey requests distributed was 5.3%). From the perspective that a high or low response rate is an important indicator of the margin of error within the sample, it could be considered that the data used in this research was more representative. Secondly, this paper limits the scope of its analysis to married, working women between the ages of 18 and 45, focusing on an age range in which it is fairly easy to extract the impact of childcare costs on work. Thirdly, this research uses an estimation model in which it is not necessary to consider variables with a strong possibility of endogeneity (whether or not a woman is married, and whether or not she is working), and as a result, is considered to have achieved more reliable results.

3. Verification of the Non-Bad Job Hypothesis

(1) Nominal Income

Next, let us look at whether married women working as independent contractors have

worse benefits and working conditions than those of employed workers. In order to verify this, we must first reconfirm the conditions applicable to the independent contract work model. In the model of "maximizing utility" given above, married women with comparatively high anticipated incomes (I_{ic}-I_e＞0), for whom the following is applicable, are likely to be working as independent contractors.

$$\alpha \times H_w \times C \ > \ H_w \times (W_e - W_{ic}) \qquad (7)$$

The left hand side of formula (7) above represents the reduced cost of childcare, achieved through raising children while working as an independent contractor, and the right hand side gives the differential in income between an employed worker and an independent contractor. In other words, even if the income of an independent contractor does not equate to that of a regular employee, provided that the childcare costs saved are large enough, independent contracting is the more rational option. At the same time, however, as Table 1 shows, most married women with children in both Japan and the U.S. choose not to work as independent contractors but rather as employees. For most of the married women with multiple children, the conditions for the formula in (7) above do not apply, and it is thought that the difference in income between employed work and independent contracting is significant enough not to be offset by any saving in childcare costs.

In fact, annual incomes of regular employees in the U.S. are 1.5 times those of independent contractors, and 2.3 times in Japan. Both countries pay less to independent contractors (Table 2). 90.3% (Japan) and 69.0% (the U.S.) of independent contractors fall into a low income bracket (earning under 2.5 million yen per year), far more than the equivalent proportion of regular employees (Table 4). Furthermore, a significantly high proportion of independent contractors fall into the category of workers paid under 1,000 yen per hour (71.4% in Japan and 40.7% in the U.S.). It is therefore impossible to deny that independent contracting has some elements of a "bad job," particularly when considered from the perspective of income.

The fact that the difference between the annual incomes of Japanese regular employees and independent contractors is larger than that in the U.S. is, however, unexpected. Considering the fact that childcare costs are so much more expensive in the U.S. than in Japan, it would be natural for annual incomes to be around 1.5 times higher. According to the latest American surveys, the average annual cost of professional childcare for children under three was US$15,895, and for children between the ages of three and five was US$11,680. For children aged six and over, the cost of after-school care was US$10,720 (National Association of Child Care Resource & Referral Agencies 2009). In the U.S., the difference between the average incomes of independent contractors and regular employees is around US$12,000, a differential which can be fully covered by the saving achieved in childcare costs. On the other hand, the significant investment of public finance in accredited childcare facilities in Japan means that the average cost of childcare is 1/5 that of the U.S. Regardless of this, regular employees' income in Japan is 2.3 times higher than that of

Table 4. Comparison of the Levels to Which Different Work Formats Constitute a "Bad Job" (for Married Women Aged 18-45)

	Japan			U.S.		
	Regular employees	Part-time employees	Independent contractors	Regular employees	Part-time employees	Independent contractors
Level to which work format is a "bad job" (0-3)	0.48	0.98	1.80	0.76	1.27	1.19
Long working hours	55.0%	1.5%	20.6%	5.0%	0.0%	10.8%
Annual income under 2.5 million yen	24.7%	96.6%	90.3%	43.2%	84.9%	69.0%
Wage rate equivalent to under 1,000 yen/hour	19.2%		71.4%	29.0%	42.9%	40.7%
Benefits						
Participating in employer7's health-care insurance				82.9%	30.8%	
Participating in Employer's pension or retirement plan				66.6%	33.3%	0.7%
Job satisfaction						
Hope to continue in current employment	83.7%	51.0%		74.4%	80.0%	84.2%

Notes: 1. "Long working hours" indicates a minimum of 45 hours per month of overtime, or 205 hours of work per month (8 hours/day x 20 days + 45 hours = 205 hours). Since no variables are provided for working hours of non-regular employees (in Japan), respondents who fulfilled the conditions of "having designated working hours that are longer than other regular employees in the same workplace" and "sometimes or often working overtime" are considered to have "long working hours."

2.When calculating annual income, one US dollar is taken as equal to 100 yen.

independent contractors—a greater differential than that of the U.S.—and the difference in average annual income is significant, at 2.1 million yen. Therefore, the low incomes earned by independent contractors in Japan cannot be close to sufficiently explained within the framework of "maximizing utility."

(2) Insurance and Other Benefits and Working Hours

It is of course necessary to consider not only income, but also health insurance and

other benefits when making a comparison. When considering benefits, however, it is surely the case that independent contractors are in a less advantageous position. Independent contractors are not employees, but are considered "self-employed." Companies outsourcing their business rarely provide benefits to people in such positions. For example, more than 80% of regular employees in the U.S. are members of health insurance plans provided for employees, and just under 70% are members of employee pension and retirement plans. Compared to this, the proportion of independent contractors involved in such plans is virtually zero. According to Zhou (2006), in Japan, as well, the benefits available to independent contractors are significantly less advantageous than those given to employees. For example, only 13.2% of independent contractors receive travel expenses from the companies they work for (compared with 90.0% of regular employees and 53.2% of non-regular employees). The proportion of contractors receiving other types of benefits is similarly low (2.5% receive skills development support; 0.5% receive housing allowances from a company).

Furthermore, in the U.S., the proportion of independent contractors who work long hours (more than 205 hours/month) reached 10.8%, which is approximately double the number of regular employees (5.0%). In other words, nominal income, benefits, and working hours could all be described as strongly defending the view of independent contracting as being a "bad job" in the U.S. On the other hand, in Japan, although fewer independent contractors work long hours than regular employees (20.6% as opposed to 55.0%), there is a significant gap in income and benefits, making it difficult to state definitively that independent contracting is not a "bad job," based on this information alone.

(3) Is Independent Contracting a "Bad Job" Even If Academic Background, Age, and Childrearing Costs Are the Same?

The comparisons of average values given above generally show that a higher proportion of married women working as independent contractors work long hours compared to regular employees (in the U.S. only), that their incomes are lower, and that their benefits are less comprehensive. But is independent contracting a "bad job" even in cases where individual attributes such as academic background, age, the number of children, etc. are controlled?

Table 5 shows an estimation using a probit model to express the three prescriptive factors for a "bad job"—"annual income under 2.5 million yen," "working 205 or more hours per month" and "non-enrollment in corporate pension or retirement plans." Specifically, the author controlled explanatory variables including the subject's age, academic background, the age of the subject's youngest child, the number of under-age children, race, union membership, area of residence, etc., to estimate the probability of independent contracting being a "bad job" in comparison with being employed as a regular employee.

Table 5 shows that in comparison with regular employees, independent contractors are between 23.8% points (Japan) and 27.2% points (the U.S.) more likely earn under 2.5

Table 5. Prescriptive Factors in "Bad Job" Aspects of Work (2005)

	Y1: Probability of annual income being under 2.5 million yen		Y2: Probability of working long hours		Y3: Probability of participating in employer's pension/retirement plan (U.S.)
	U.S. 2005	Japan 2005	U.S. 2005	Japan 2005	
	Marginal effect (S.D.)	Marginal effect (S.D.)	Marginal effect (S.D.)	Marginal effect (S.D.)	Marginal effect (S.D.)
Work format					
Part-time employee	0.395***	0.466***		-0.3725491***	0.309***
	(0.110)	(0.294)		(0.198)	(0.082)
Contractual/dispatched worker	0.241***	0.166***	-0.015	-0.208***	0.337***
	(0.089)	(0.188)	(0.006)	(0.211)	(0.106)
Self-employed (Not including independent contrators)	0.226***	0.279***	0.117***	-0.094***	0.558***
	(0.083)	(0.284)	(0.028)	(0.107)	(0.211)
Independent contractor	0.272***	0.238***	0.052***	-0.112***	0.557***
	(0.104)	(0.270)	(0.016)	(0.129)	(0.212)
Youngest child under 6	-0.041**	-0.020	-0.021***	-0.019	-0.049***
	(0.013)	(0.013)	(0.008)	(0.018)	(0.014)
Number of children under 18	0.016**	0.035***	-0.002	0.010	0.009
	(0.005)	(0.017)	(0.001)	(0.008)	(0.002)
Age	-0.006***	-0.002	0.000	-0.003	-0.009***
	(0.002)	(0.001)	(0.000)	(0.002)	(0.003)
Senior high school graduate	-0.132***	-0.034	-0.027**	-0.104**	-0.157***
	(0.045)	(0.022)	(0.01)	(0.099)	(0.051)
Junior college or vocational college graduate	-0.205***	-0.041	-0.02*	-0.064	-0.222***
	(0.072)	(0.026)	(0.008)	(0.063)	(0.075)
University (graduate school) graduate	-0.400***	-0.089	0.001	-0.088**	-0.337***
	(0.078)	(0.046)	(0.001)	(0.093)	(0.093)
Log Likelihood	-1862.7	-452.1	-1435.1	-381.2	-3221.7
Racial/Union membership dummy	Yes	No	Yes	No	Yes
Regional dummy	City population size	Regional block	City population size	Regional block	City population size
Sample size	3,455	1,516	6,819	1,388	5,695

Notes: 1. All results estimated use a probit model.

2. The marginal effect has been calculated for each subject, and the average treatment effect and standard deviation (SD) reported.
3. *, **, and *** indicate that the estimated coefficients are not zero, at a confidence level of 10%, 5%, and 1% respectively.

million yen per year. Furthermore, the likelihood of American independent contractors being excluded from company pension and retirement plans is 55.7% points higher than that for regular employees. On the other hand, while the likelihood of American independent contractors working long hours is 5.2% points higher than that for regular employees, the opposite result is seen in Japan—the probability of long working hours is 11.2% lower for independent contractors than for regular employees. The results of these estimates are roughly consistent with the results of the simple comparisons carried out in Table 4. Even considering the impact of individual attributes and the cost of raising children, the likelihood is high that independent contracting is a "bad job" when compared with being a regular employee.

At this point we must remember that Table 4 and Table 5 appear to give opposite results regarding long working hours. Table 5 shows that independent contractors in Japan are less likely than regular employees to work long hours, whereas in the U.S., this is more likely to happen. On the other hand, Table 4 shows that approximately 20% of independent contractors work long hours in Japan, but that only around 10% do in the U.S., indicating that Japanese independent contractors work comparatively longer hours. In fact, this apparent difference in results is caused by the comparative benchmark of "long working hours among regular employees," which is significantly divergent between Japan and the U.S. In Japan, 55.0% of regular employees work long hours, whereas this applies to only 5.0% of regular employees in the U.S. If, therefore, the comparison was done against absolute criteria, Japanese independent contractors would be shown as working significantly longer hours than their U.S. counterparts, but comparing them to regular Japanese employees makes it seem that they are not in fact working such long hours.

(4) Is Independent Contracting a "Bad Job" Even When Restricted to Full-Time Workers?

One thing must be noted from the results in Table 5. Despite the fact that between 47.7% (the U.S.) and 45.4% (Japan) of the independent contractors who are the subject of this research work less than 35 hours per week, all of the regular employees used in comparison are full-time employees who work 35 or more hours per week. Since there is a possibility that this comparison is not fair, next, we will consider whether independent contracting is a "bad job" when restricted to full-time employees only.

The estimation results in Table 6 are restricted to independent contractors working full-time – more than 35 hours per week—but still show that independent contracting has aspects of being a "bad job" when compared to regular employment. Specifically, independent contractors have a 17.1%-point (the U.S.) to 47.1%-point (Japan) higher probability than their regular employee counterparts of earning under 2.5 million yen per year, and are 16.2% points (the U.S.) to 30.0% points (Japan) more likely to be working long hours. While Table 5, which includes employees who work short hours, shows noticeably low estimated results for long working hours for Japanese independent contractors when compared

Table 6. Prescriptive Factors in "Bad Job" Aspects of Work (for full-time workers)

	Y1: Probability of annual income being under 2.5 million yen		Y2: Probability of working long hours	
	U.S. 2005	Japan 2005	U.S. 2005	Japan 2005
	Marginal effect (S.D.)	Marginal effect (S.D.)	Marginal effect (S.D.)	Marginal effect (S.D.)
Work format				
Contractual/dispatched worker	0.035		0.015	
	(0.009)		(0.006)	
Self-employed (Not including independent contrators)	0.162***	0.521***	0.209***	0.318***
	(0.034)	(0.245)	(0.043)	(0.099)
Independent contractor	0.171***	0.471***	0.162***	0.300***
	(0.036)	(0.282)	(0.039)	(0.095)
Log Likelihood	-1209.5	-114.0	-1399.5	-57.8
Sample size	2,139	298	6,571	305

Notes: 1. Estimation results use the same verification model as Table 5. Estimation results for explanatory variables other than work format have been omitted.

2. Since no information is available regarding the working hours of workers hired from staffing agencies or contract employees within the Japanese data, comparisons between work formats have been done only for regular employees, conventionally self-employed people, and independent contractors.
3. *, **, and *** indicate coefficient estimated values that are not zero, at a confidence level of 10%, 5%, and 1% respectively.

with regular employees, Table 6, which restricts the scope of the comparison to full-time workers, shows a higher risk of long working hours for independent contractors than for regular employees.

Furthermore, the probability of independent contractors earning low salaries and having to work long hours is higher than for regular employees by 17.1% points and 16.2% points, respectively, in the U.S., while such probability is much higher in Japan by 47.1% points and 30.0% points, respectively. It is interesting to note that the marginal effect of independent contracting is around double in Japan what it is in the U.S. In other words, the risk of independent contractors ending up in a "bad job" is extremely high in Japan compared to regular employees.

V. Conclusions

This research focuses on married women with children, and compares data from Japan and the U.S. in order to ascertain whether independent contracting, which is considered to offer freedom and flexibility, is in fact an employment format that offers future opportunities for such women.

The results of analysis showed that in both Japan and the U.S., women with children under the age of six and women with higher numbers of children are more likely to end up in working as independent contractors (as opposed to regular employees). At the same time, the average annual income of a regular employee is 1.5 times (for the U.S.) and 2.3 times (in Japan) that of an independent contractor, and benefits and working conditions for independent contractors are relatively poor. The difference in benefits between independent contractors and regular employees can be partly explained by individual differences and preferences such as academic background, social experience, area of residence, etc., but this does not fully explain the issue. In particular, in Japan, there are some clear aspects of independent contracting that make it a "bad job," with noticeable levels of risk of independent contractors ending up with low incomes and long working hours, when compared with regular employment.

At this point, the author would like to look at the outstanding issue of the reason behind the difference in benefits, which has not so far been explained. One possibility indicated by Hundley (2000), is that this is being caused by individual preference. People working in independent contracting and those who are self-employed tend to place a lower emphasis on income, and may be feeling a sense of fulfillment or enjoying their freedom. This may be a particularly clear trend in women who are currently raising children and who can count on their husbands' income. In reality, it is true in both Japan and the U.S. that independent contracting seems to lead to a high level of job satisfaction. Table 4 shows that 84.2% of American independent contractors say that they "would like to continue at their current job," compared with 74.4% of regular employees and 80.0% of part-time workers. Japanese independent contractors also express a higher level of satisfaction with their jobs than regular employees (Zhou 2006).

One other possibility is that there may be a significant number of independent contractors working for less than the minimum wage. Since independent contracting is legally considered to be self-employment (not employment), it is not subject to labor laws, and there is no protection regarding minimum wages. For this reason, when compared to employees, a manner of sample selection has occurred based on the fact that no employees receive less than minimum wage, and this may be observed as the disparity. This situation is almost certainly affected by the fact that there is little information available regarding appropriate remuneration for independent contracting, and it is extremely difficult for independent contractors to negotiate with companies regarding benefits. More than anything, the scale of the independent contractor labor market is small (in particular in Japan) compared

with the employment market as a whole, meaning that companies have a monopolistic or oligopolistic advantage when negotiating regarding remuneration for contracted work. It is possible that independent contracting as a whole has poor benefits and conditions as a result of all these factors working together.

Several of these factors will not find solutions until the independent contracting market grows, as it has in the U.S. In the future, as independent contracting expands in Japan, it is anticipated that the disparity in benefits between independent contractors and regular employees will gradually narrow. Japanese policy will need, in the future, to support the development of the independent contractor market, and ensure that information is coordinated regarding appropriate remuneration for contracted work. In addition, considering the fact that in general, independent contractors are individual players and do not have the negotiating power of a group or organization, the author suggests that it may be necessary for a fair trade commission or other such organization to investigate whether companies are implementing monopolistic or oligopolistic negotiations and paying inappropriately low rates, and where necessary, to publish the names of, or issue warnings to, such companies. Disparities that occur because of individual preferences should be distinguished from disparities such as these, which must be eliminated, and therefore identifying and shining the light of investigation on such practices is extremely important.

References

Bureau of Labour Statistics. 2005. Contingent and alternative employment arrangements, February 2005. Economic News Release. http://www.bls.gov/news.release/conemp.nr0.htm (accessed December 1, 2010).

Carnoy, Martin. 2000. *Sustaining the new economy: Work, family and community in the information age*. New York: Russell Sage Foundation; Cambridge and London: Harvard University Press.

DiNitale, Marisa. 2001. Characteristics of and preference for alternative work arrangements, 1999. *Monthly Labor Review* 124, no. 3:28-49.

Edwards, Linda. N., and Elizabeth Field-Hendrey. 2002. Home based work and women's labor force decisions. *Journal of Labor Economics* 20, no. 1:170-200.

Hundley, Greg. 2000. Male/female earnings differences in self-employment: The effects marriage, children, and the household division of labor. *Industrial and Labor Relations Review* 54, no. 1:95-114.

Kalleberg, Arne L., Barbara F. Reskin, and Ken Hudson 1999. Bad jobs in America: Standard and nonstandard employment relations and job quality in the United States. Inequality Summer Institute 1999, Mimeo. http://www.hks.harvard.edu/inequality/Summer/Summer99/privatepapers/Reskin.PDF (accessed December 1, 2010).

National Association of Child Care Resource & Referral Agencies. 2009. Parents and the high price of child care: 2009 update. http://www.naccrra.org/publications/naccrra-

publications/publications/665-0410_PriceReport_FINAL_051409.kv.pdf (acessed December 1, 2010).

Norton, Edward. 2009. Applied econometrics in health services research. HMP 826 class notes, University of Michigan.

Wellington, Alison J. 2006. Self-employment: The new solution for balancing family and career? *Labour Economics* 13 (3):357-86.

Yamada, Hisashi. 2007. Kojin gyomu ukeoi no jittai to shoraiteki kanosei: Nichibei hikaku no shiten kara "indipendento kontorakuta" wo chushin ni [Actual condition and perspectives of individual outside contractors in Japan: Focusing on independent contractors in comparison with the U.S. situation]. *The Japanese Journal of Labour Studies* 49, no. 9:4-16.

Zhou, Yanfei. 2006. Kojin ukeoi no rodo jittai to shokugyo sentaku no kettei yoin [The state of independent contracting and factors influencing the selection of work format]. *JCER Economic Journal*, no. 54 (March):63-89.

———. 2010. Kojin ukeoi shugyo no shoraisei: Nichibei no komochi kikon josei ni chumoku shite [The future of independent contracting: Focusing on married women with children in Japan and the U.S.], JILPT discussion paper 10-01, the Japan Institute for Labour Policy and Training, Tokyo.

Zhou, Yanfei, Akiko Oishi, and Akemi Ueda. 2003. Child care system in Japan. *Journal of Population and Social Security (Population)*, supplement to vol. 1:411-425. http://www.ipss.go.jp/webj-ad/webjournal.files/population/2003_6/15.Zou.pdf (accessed December 1, 2010).