An Analysis of the Relationship between Occupation and Women Who Continue Working after Childbirth in Japan †

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1. Introduction

In this study, we investigate the relationship between occupation and the likelihood a woman will continue working following childbirth using data from a nationwide survey in Japan.

In 2010, the average number of children per married couple was 1.96 (Basic Survey of Birth Trends; National Survey on Marriage and Births; Summary of Survey on Married Couples by the National Institute of Population and Social Security Research). This was the first time the number of children per married couple dropped below 2.00 since the survey was first conducted in 1940. A continually decreasing fertility rate and number of live births have led to a reduction in the working-age population, which will ultimately lead to a workforce shortage. One way of solving this problem is to utilize the potential female workforce.

Analysis of cross-country data shows an emerging positive correlation between fertility rate and the percentage of women in the workforce. This trend is seen in countries such as Japan, Spain, and Italy, where the percentage of women in the workforce is low and the birth rate is also low. It is also seen in countries such as the United States and France, where both the percentage of women in the workforce and the birth rate are high. The degree of male participation in childcare and governmental childcare support is substantial (Feyrer et al, 2008).

In Japan, the childcare leave system is positively correlated with female continuation of employment and birth rate (e.g., Waldfogel Higuchi and Abe, 1999; Higuchi, 2001; Shigeno and Okusa, 1998). On the other hand, business owner burdens, such as childcare leave benefits and premium payments, are heavy, so it can be costly for a company to employ females. Some evidence suggests that childcare leave has not necessarily promoted female employment (e.g., Wakisaka, 2001; Imada and Ikeda, 2006).

When calling "employment discontinuation" in these analyses, it was only "whether to keep on continuing work in the company." However, according to Becker (1962), only company specific human capital is not in human resources, but industry specific human capital and occupational specific human capital. Especially accumulation of occupational specific human capital has a high possibility that it is valid also in other companies and industries, and it is thought that it is more important for the woman in our country which is obliged to employment discontinuation by marriage or childbirth.

One analysis (Toda, 2011) using macro data found that the premium wages of professional women relative to years of experience is high. In addition, it can be depended on for clarifying the reason for the difference in the continuation of workforce participation by occupational

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description. In Senda (2002), an analysis of the continuation of employment and occupational description for one year after delivery of the first child was conducted from the time of pregnancy by using the 11th Annual Population and Social Security Survey. Results showed women who were clerical and sales service workers were less likely to return to work. Further, the childcare leave system is more accessible to professionals and government officials than to women in on-site blue-collar jobs.

However, the 11th Annual Population and Social Security Survey was conducted in 1997, and there is little research that analyzes later trends. Therefore, it is necessary to promptly elucidate the present condition of female employment discontinuation following childbirth, across occupations.

In the present study, we use data from a nationwide Japanese survey to investigate how occupation influences the probability that a woman will return to work following childbirth and how occupation is more likely to turnover after woman quit her job before childbirth.

The remainder of the paper is structured as follows. Section 2 provides a brief description of the data and methods used in our analysis. Section 3 presents our key estimation results. Section 4 concludes the paper.

2. Data and Method

2.1. Data

The empirical analysis in this paper is based on the Japanese General Social Survey 2009 Life Course Study (JGSS-2009LCS). The data comprised survey responses from women aged 28 to 42 in 2009 from the nationwide JGSS (Japanese General Social Survey). A two-stage stratified random sampling method was used. Respondents were contacted for face-to-face interviews and self-administered questionnaires. Six thousand survey respondents were contacted and 2,727 responded (Response Rate: 51.1%).

Employment status data were retrospectively analyzed. The data included information on occupation type, duration of employment, and how these variables were influenced by childbirth. We concentrated on respondents aged 28 to 42 years with at least one child in order to assess the determinants of returning to work after childbirth.

We specified the number of possible occupations by condensing the 10 major Japanese Standard Classification of Occupations categories into 5 (omitting farmers) as follows: (1) professional, technical, and managers (Professional, 500-553, 703); (2) clerical and kindred workers (Clerk, 554-565); (3) salespeople (Sale, 566-577, 701, 801, 803, 804); (4) service, transportation, communication and protective service workers (Service, 578-598, 606-619, 706, 802); (5) manufacturing workers (Manufacturing, 620-688, 702, 704) (the numbers in parentheses indicate the range of 3-digit SSM (The National Survey of Social Stratification and Social Mobility) occupational codes and JGSS's new code).

We checked the rate of continuous working after childbirth for each occupation at one year before childbirth using JGSS-2009LCS (Table 1). Following the birth of their first child, women with professional occupations are most likely of the five occupations examined to return to work (63.3%). Manufacturing workers are second (62.5%), sales workers are third (46.4%) and clerks and service workers are the least likely to return to work (42.7 and 42.6%). That said, the number of women who were still working a year prior to their second childbirth was substantially lower (N=198). However, the women who continued their job after the first childbirth were more likely to continue working following the second childbirth in every occupation (60% to 84%).

Table-1: Rate of continuous working after childbirth

Occupation (A year before child birth)	Rate of continuous working			
	First Child		Second Child	
	%	N	%	N
Professional	63.3	150	78.9	76
Clerk	42.7	225	75.0	56
Sale	46.4	56	60.0	20
Service	42.6	47	81.0	21
Manufacturing	62.5	56	84.0	25
Total	50.9	534	76.8	198

A variety of independent variables were assessed. Background variables included educational attainment (years of schooling), spousal educational attainment (years of schooling), child-bearing age, and living area[1] (urban). While it may have been more informative to also factor in spousal income, this information was not provided by the survey analyzed. Although we could have used the income data obtained a year before the survey year (2008), 15% of the total respondents did not answer this question and inclusion of the variable would decrease our sample size. Moreover, according to human capital theory, education level is positively correlated with wage, so the inclusion of spousal education level in our analysis was likely sufficient.

Employment data included occupation working status (full time or part time) and firm size (small, middle, or large size and public). These variables were correlated with various events, including marriage, first childbirth, and second childbirth. Following the analysis, we determined the role of occupation, working status, and firm size in continuance of work following childbirth. In addition, we calculated years of occupational experience obtained by respondents prior to childbirth. The accumulation of a year or greater of occupational experience is an important variable in this analysis. Women with more than one year's work experience are less likely to leave their jobs because their wages are likely higher.

Public and family support was also considered in this analysis. Factors such as living with a spouse or parent(s) and nursery utilization were assessed. Previous studies have shown that public and parental support increases the likelihood that a woman will continue working after childbirth (e.g., Nakamura and Ueda, 1999; Oishi and Oshio, 2006). In the present study, if the respondent lived with her parent(s) or her spouse's parent(s) at the time of the first or second childbirth, the variable was 1 and if not, it was 0. If the first or second child went into nursery, the variable was 1 and if not, it was 0. Only working mothers are permitted to use nurseries. Nurseries are only available to women who work. Therefore, there is a high correlation in women between nursery utilization and employment. In our estimation, nursery utilization was an indicator of whether a woman returned to work. The basic features of the key variables used in the analysis are summarized in Table 2.

[1] The variable is information in survey year. Although it is better to use it when the women have children, we could not use it because it was not conducted in the questionnaire.

Table-2: Descriptive statistics for key variables in the analysis

		First Child Birth		Second Child Birth	
		Mean	SD	Mean	SD
Occupation	Professional	0.27	0.45	0.37	0.49
(A year before child birth)	Clerk	0.42	0.49	0.28	0.45
	Sale	0.11	0.32	0.11	0.32
	Service	0.09	0.28	0.11	0.31
	Manufacturing	0.10	0.31	0.13	0.33
Year of Occupational Experience		5.73	3.37	6.75	4.02
Year of schooling		13.62	1.60	13.76	1.66
Working Status	Regular Worker	0.77	0.42	0.70	0.46
(A year before child birth)	Non-regular worker	0.23	0.42	0.30	0.46
Firm Size	Small	0.43	0.50	0.42	0.50
(A year before child birth)	Middle	0.27	0.44	0.20	0.40
	Large	0.18	0.38	0.15	0.36
	Public	0.11	0.32	0.21	0.41
Child-bearing Age	Under aged 19	0.01	0.11	-	-
	Aged 20-24	0.22	0.42	0.08	0.27
	Aged 25-29	0.51	0.50	0.41	0.49
	Aged 30-34	0.22	0.41	0.39	0.49
	Over aged 35	0.04	0.19	0.11	0.32
Spouse's year of shooling		16.61	2.16	16.52	2.21
Living Area (Survey year)	Urban	0.21	0.41	0.17	0.38
Living together with respondent parents		0.12	0.32	0.11	0.31
Nursery		0.46	0.50	0.59	0.49
Observations		534		198	

2.2. Method

The decision to cease or continue a career after childbirth can be explained in simple economic theory. This outcome depends on the comparison of utility before and after childbirth, or the status of reservation wage. If the utility of continuing a career across childbirth is greater than not continuing, or if earned wages are greater than reservation wages, the woman is likely to maintain her career.

We applied this logit model to determine whether a respondent continued her job following childbirth.

$$y^* = x_i\beta + u_i$$

$$y = \begin{cases} 1, & if\ the\ woman\ continue\ working\ after\ childbirth \\ 0, & \text{otherwise} \end{cases}$$

where x_i is a vector of explanatory variables for individual k that included occupational status, working status, educational attainment, and other factors indicated above that affect reservation wage and working conditions. β is a vector of coefficients and u_i is unobserved error. The estimation is using the maximum likelihood method as a logit model.

Respondents' wages and working hours affect reservation wages. However, we could not apply such information at the time of childbirth because wage and working hour information was only available for current (survey year) working status. However, we did include

employment status at the time of childbirth, occupation, years of occupational experience, regularity of work, firm size, and educational attainment in place of this information.

In order to indicate women's choice after childbirth, we also applied the logit model to estimate whether a woman who ceased working after childbirth eventually returned to the job market. In this estimation, the sample was limited to women who did cease working following childbirth.

3. Estimation Results

Table 3 provides the estimated coefficients of the key variables for continuing work after childbirth, which controls for the full set of control variables and excludes the nursery variable. The first four rows contain estimation results for continuing work after the first childbirth and the last four rows contain estimation results for continuing work after the second childbirth. Each of the last two rows contain estimation results for only full-time workers.

Our findings indicate professional and manufacturing workers are more likely to continue working after the first childbirth. Professional workers such as nursing and midwifery professionals and teaching professionals are expected to have a high skill level and high income.

Manufacturing workers are also more likely to continue working. This finding parallels that of Senda (2002), wherein it was suggested that manufacturing workers are likely to continue employment after childbirth because a greater number live with parent(s) relative to other occupations. Our data show that manufacturing workers (20%) are most likely of all observed occupations to live with their parent(s) (7-14% of workers in other occupations live with parents). Regarding the utilization of nurseries, professional workers (70%) and manufacturing workers (60%) are most likely to place children in nurseries. Moreover, we provide the mean logarithm annual respondent income by occupation category one year before the first childbirth of the respondents who returned to work. Professional workers (12.3) had the highest income, followed by clerks (11.7) and manufacturing workers (11.4). While the perception of a manufacturing worker may be one of low wage and skill, the average manufacturing worker who continues working post-childbirth is likely of high skill. Verification of the occupation code of manufacturing workers who returned to work following the first childbirth revealed most were electrical and electronic equipment mechanics and fitters, machinery mechanics and fitters, and jewelry and precious-metal workers, jobs that generally require a high level of skill. Analysis of occupational experience revealed that women who have been working for a year or greater prior to the first childbirth return to work following the first childbirth. This is likely owing to the positive correlation between experience and wage. Level of educational attainment also increases the probability of post-childbirth career continuity in women. Nakamura and Ueda (1999) suggest this may result from an expectation of receiving a return on an investment in education, or fear of being unable to find an equivalent position in the future.

Regular workers are more likely to return to work after childbirth. In Japan, it is difficult for non-regular workers to use a firm's childcare support such as childcare leave and public support such as nurseries. In addition to this, it is difficult to find a regular job post-childbirth in the absence of solid prior work experience.

The effect of nurseries is positive. Women who utilize nurseries are likely to continue working. However, this finding may be skewed because nurseries are only available to working women.

Following the second childbirth, no significant relationship was observed between any variable and the probability of returning to work.

We further estimated career turnover in women who ceased working before childbirth using the logit model. Table 4 presents the estimation data for this analysis. This sample consists of women who did not work across childbirth. In Table 3, we used a year before employment status but, in Table 4, we used the last job information before childbirth. Table 4 includes not

only women who ceased working following childbirth, but also women who ceased working more than a year before childbirth.

Table-3: Estimated coefficient of control variables on continuous working after childbirth

		Countinuous Working = 1							
		First Child Birth				Second Child Birth			
		All		Regular Worker		All		Regular Worker	
Occupation	Professional	0.552**	0.448*	0.663**	0.545*	0.35	0.404	-0.249	-0.152
(A year before child birth,		[0.247]	[0.254]	[0.287]	[0.291]	[0.547]	[0.555]	[0.799]	[0.808]
Reference : Clerk)	Sale	0.362	0.379	0.275	0.356	-0.251	-0.108	0.0317	0.21
		[0.313]	[0.325]	[0.346]	[0.367]	[0.618]	[0.619]	[1.050]	[1.059]
	Service	0.00888	-0.044	0.0534	0.105	0.746	0.935	1.346	1.34
		[0.368]	[0.378]	[0.480]	[0.515]	[0.823]	[0.835]	[1.348]	[1.334]
	Manufacturing	0.993***	0.975***	1.144***	1.039***	1.176	1.207	0.23	0.21
		[0.331]	[0.343]	[0.388]	[0.386]	[0.897]	[0.912]	[1.379]	[1.439]
Year of Occupational Experience		0.0863***	0.104***	0.0977**	0.115***	0.0613	0.067	0.113*	0.107
		[0.0335]	[0.0334]	[0.0382]	[0.0376]	[0.0559]	[0.0552]	[0.0689]	[0.0691]
Year of Schooling		0.147*	0.186**	0.170*	0.200**	-0.232	-0.222	-0.0586	-0.117
		[0.0777]	[0.0782]	[0.0889]	[0.0883]	[0.184]	[0.179]	[0.229]	[0.221]
Working Status	Regular Worker	0.667***	0.547**			1.487***	1.405***		
(A year before child birth)		[0.247]	[0.252]			[0.472]	[0.469]		
Firm Size	Small	-0.116	0.0189	-0.245	-0.116	-0.053	0.018	-0.467	-0.275
(A year before child birth,		[0.231]	[0.239]	[0.266]	[0.275]	[0.502]	[0.499]	[0.670]	[0.677]
Reference : Middle)	Large	-0.117	0.0518	-0.156	0.00924	0.986	0.937	1.579	1.67
		[0.283]	[0.293]	[0.316]	[0.326]	[0.697]	[0.683]	[1.249]	[1.332]
	Public	1.815***	1.805***	2.823***	2.693***	1.364**	1.323*	2.253*	2.260*
		[0.393]	[0.408]	[0.772]	[0.787]	[0.695]	[0.700]	[1.258]	[1.260]
Child-bearing Age	Under aged 19	-0.604	-0.946	-0.196	-0.662				
(Reference : Aged 25-29)		[1.141]	[1.143]	[1.263]	[1.256]				
	Aged 20-24	0.469*	0.482*	0.359	0.412	0.87	0.837	0.502	0.398
		[0.258]	[0.264]	[0.298]	[0.305]	[0.896]	[0.918]	[1.235]	[1.232]
	Aged 30-34	0.0797	0.164	0.00269	0.129	0.581	0.613	1.045*	1.175*
		[0.261]	[0.259]	[0.320]	[0.317]	[0.483]	[0.484]	[0.633]	[0.683]
	Over aged 35	0.413	0.485	0.348	0.493	1.012	1.171	-0.462	0.15
		[0.568]	[0.564]	[0.615]	[0.601]	[0.840]	[0.837]	[1.103]	[1.232]
Spouse's year of shooling		-0.0115	0.000478	-0.0298	-0.0153	0.125	0.137	0.0478	0.0753
		[0.0523]	[0.0535]	[0.0591]	[0.0608]	[0.117]	[0.116]	[0.167]	[0.157]
Living Area	Urban	0.206	0.237	0.307	0.302	0.045	0.215	0.0649	0.358
(Survey year)		[0.237]	[0.240]	[0.273]	[0.271]	[0.506]	[0.517]	[0.606]	[0.618]
Living together with parent(s)		0.121	0.0463	0.439	0.376	0.0936	0.18	0.214	0.368
		[0.296]	[0.327]	[0.345]	[0.369]	[0.670]	[0.657]	[1.043]	[1.151]
Nursery			1.025***		1.009***		0.664*		0.854
			[0.203]		[0.235]		[0.374]		[0.615]
Constant		-3.359***	-4.615***	-2.791**	-4.088***	0.00195	-0.821	0.359	-0.0446
		[1.171]	[1.212]	[1.384]	[1.422]	[2.316]	[2.329]	[2.777]	[2.832]
Observations		534	534	413	413	198	198	139	139
Pseudo R-squared		0.11	0.145	0.137	0.17	0.163	0.176	0.182	0.199
Log Lik		-329.5	-316.3	-245.1	-235.7	-89.86	-88.49	-48.25	-47.27

Note: Robust standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table-4: Estimated coefficient of control variables on turnover after ceasing working before childbirth

		Turnorver = 1
Occupation	Professional	0.0684
(Last job before childbirth,		[0.256]
Reference : Clerk)	Sale	0.126
		[0.325]
	Service	-0.923**
		[0.379]
	Manufacturing	0.188
		[0.344]
Year of Occupational Experience		-0.00543
(A year before childbirth)		[0.0390]
Year of Schooling		-0.00187
		[0.0776]
Working Status	Regular Worker	0.171
(Last job before childbirth)		[0.231]
Firm Size	Small	-0.00336
(Last job before childbirth,		[0.240]
Reference : Middle)	Large	-0.369
		[0.312]
	Public	-0.624
		[0.692]
Child-bearing Age	Under aged 19	-0.247
(Reference : Aged 25-29)		[1.529]
	Aged 20-24	0.620**
		[0.307]
	Aged 30-34	-0.769***
		[0.262]
	Over aged 35	-1.070**
		[0.505]
Spouse's year of shooling		-0.123**
		[0.0493]
Living Area	Urban	-0.36
(Survey year)		[0.235]
Unemployment rate		-0.450***
(A year after childbirth)		[0.137]
Over second child		0.326
		[0.228]
Constant		3.980***
		[1.230]
Observations		526
Pseudo R-squared		0.12
Log Lik		-320.6

Note: Robust standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1

Results showed that working status does not affect turnover probability. In general, high-experience women are likely to find employment. However, the results do not indicate this and may suggest that women who ceased working before childbirth are less likely to maintain relationships with former employers. Only service workers have a significantly lower probability of turnover compared to office worker. This indicates that service workers may be perceived as less skilled than office workers.

We cannot ascertain from the present data whether women decided to cease working following childbirth for reasons not measured (e.g., time with children, keeping of home). The effect of spousal education, which is positively correlated with spousal wage, is positive. This suggests that a high spousal income translates into a higher familial reservation wage. It is possible that some women do not feel it necessary to work after childbirth or marriage.

Finally, we evaluated the timing of childbirth by occupation using event history analysis. Fertility decisions are made by housewives as well as workers. In this analysis, we estimate two types: one includes housewives and another does not. However, women first decide to work or not and women then decide to have a child. Alternatively, these decisions are made simultaneously. Although we should make estimations that control for sample selection or simultaneity, we cannot contain this problem in event history analysis.

Results showed that clerks have their first child at a later age than women in other professions. According to the decision model of occupational choice and fertility decisions, skilled workers require greater education than unskilled workers. Both education and child-rearing are time-intensive activities and there is a trade-off between them. Consequently, skilled workers may tend to choose fewer children than unskilled workers (Kimura and Yasui, 2005). In our findings, childbirth timing of clerks is later than that of other occupations and they are more likely to cease working following childbirth than manufacturing and professional workers.

Table-5: Estimated result of event history analysis of the age at childbirth

		Including Housewives		Excluding Housewives	
		Hazard Ratio	Standard Error	Hazard Ratio	Standard Error
Housewives		0.84 *	0.08		
Occupation	Professional	1.16	0.11	1.33 **	0.16
(A year before child birth,	Sale	1.35 **	0.17	1.21	0.19
Ref : Clerk)	Service	1.40 **	0.20	1.90 ***	0.33
	Manufacturing	1.44 ***	0.19	1.85 ***	0.29
Year of Occupational Experience		0.91 ***	0.01	0.92 ***	0.01
Year of schooling		0.85 ***	0.02	0.84 ***	0.03
Working Status (A year before child birth)	Regular Worker	2.16 ***	0.22	1.74 ***	0.20
Firm Size	Small	1.02	0.10	0.88	0.09
(A year before child birth,	Large	1.14	0.14	0.95	0.13
Ref : Middle)	Public	0.88	0.14	0.86	0.14
Spouse's year of shooling		0.96 **	0.02	0.95 **	0.02
Living Area(Survey year)	Urban	0.91	0.08	1.25 **	0.14
Living together with respondent parents		0.92	0.11	0.83	0.12
Age at Married	Under aged 19	41.80 ***	14.78	87.67 ***	42.43
(Ref : Aged 25-29)	Aged 20-24	4.70 ***	0.43	6.73 ***	0.79
	Aged 30-34	0.29 ***	0.04	0.26 ***	0.04
	Over aged 35	0.08 ***	0.02	0.06 ***	0.03
Observations		793		544	
LR chi2		771.44		570.42	
Prob>chi2		0.00		0.00	

Note: Robust standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1

4. Conclusion

In this study, we found that professional and manufacturing workers are likely to continue working following their first childbirth. Women who have these occupations are more likely to utilize nurseries or live with their parent(s) than women in other occupations are. Following the second childbirth, no relationship was observed between occupation and the probability of continuing work. We further observed that clerks tend to have their first child at a later age than women in other occupations. Although some aspects of the clerical occupation require skill, clerks tend to be older at the time of the first childbirth and less likely to return to work following childbirth.

Results regarding career turnover following childbirth generally suggest that employment status is not affected by ceasing work owing to childbirth. However, prior service workers are less likely to find other employment relative to prior clerks, possibly because the former experiences greater difficulty in skill translation.

Results suggest women would be more likely to return to work after childbirth if the accessibility to childcare support increased. This is especially true for service, sales, and office workers.

However, we did not control real wages and working hours. To obtain more informative results, the inclusion of variables such as estimation wage might be helpful. In addition, we did not control for unobserved individual effects. A more comprehensive study that addresses these concerns would be useful.

References

Becker, Gary Stanley (1962) "Investment in Human Capital: A Theoretical Analysis," *Journal of Political Economy*, Vol. 70, No. 5, Part 2, pp.9-49.

Feyrer, James, Bruce Sacerdote, and Ariel Dora Stern (2008) "Will the Stork Return to Europe and Japan? Understanding Fertility within Developed Nations," *Journal of Economic Perspectives*, Vol. 22, No. 3, pp.3-22.

Higuchi, Yoshio (2001) "Women's Employment in Japan and the Timing of Marriage and Childbirth," *The Japanese Economic Review*, Vol. 52, No. 2, pp.156-184.

Higuchi, Yoshio (1994) "Ikuji Kyugyo Seido no Zissyou Bunseki (Empirical Analysis of Childcare Leave System)," National Institute of Population and Social Security Research (eds) *Current Family and Social Security, Marriage, Childbirth and Childcare*, University of Tokyo Press, pp.108-204. (in Japanese)

Imada, Sachiko and Shingou Ikeda (2006) "Syussann Zyosei no Kyou Keizoku niokeru Ikuzikyugyouseido no Kouka to Ryouritusien no Kadai (Women's Job Continuity after Childbirth and the Childcare Leave System)," *The Japanese Journal of Labour Studies*, Vol. 553, pp.34-44. (in Japanese)

Kimura, Masako and Daishin Yasuda (2007) "Occupational Choice, Educational Attainment, and Fertility," *Economics Letters*, Vol. 94, pp.228-234.

Nakamura, Jiro and Atsuko Ueda (1999) "On the Determinants of Career Interruption by Childbirth among Married Women in Japan," *Journal of the Japanese and International Economics*, Vol. 13, pp.73-89.

Oishi, Akiko and Takashi Oshio (2006) “Coresidence with Parents and a Wife’s Decision to Work in Japan,” *The Japanese Journal of Social Security Policy*, Vol. 5, No. 1, pp.35-48.

Senda, Yukiko (2002) “Kikon Josei no Syugyou Keizoku to Ikuzi Sigen no Kankei (The Relationship Job Continuity of Marriage Women and Childcare Resource),” *Journal of Population Problems*, Vol. 58, No. 2, pp.2-21. (in Japanese)

Shigeno, Yukiko and Yasushi Ohkusa (1998) “Ikuji Kyugyo Sido no Josei no Kekkon to Syugyo Keizoku heno Eikyo (The effect of Child Care Leave on Women’s Marriage and Work Continuation),” *The Japanese Journal of Labour Studies*, Vol. 459, pp.39-49. (in Japanese)

Toda, Akihito (2011) “How Important Is Occupational Experience in Current Japan?: Analysis with Focus on Occupation-Specific Human Capital,” *Japan Labor Review*, Vol. 8, No. 3.

Wakisaka, Akira (2001) “Shigoto to Katei no Ryouritu Sihen Seido no Bunseki (An Analysis of Support for the Balancing of Work and Family),” Takenori Inoki and Fumio Ohtake (eds) *An Economic Analysis of Employment Policy*, University of Tokyo Press, pp. 195-222. (in Japanese)

Waldfogel, Jane, Yoshio Higuchi, and Masahiro Abe (1999) “Family Leave Policies and Women's Retention After Childbirth: Evidence from the United States, Britain, and Japan,” *Journal of Population Economics*, 12, pp. 523-545.