Childcare balancing policy in the Japanese corporation and women's fertility intention

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Abstract

This study aimed to investigate the relationship between childcare balancing policy and women's fertility intention in Japan. This paper constructed 3 logistic regression models based on data from the 2010 Japanese Life Course Survey of Youth to analyse the correlation between childcare balancing policies and women's fertility intentions. The binary logistic regression method was used. The results showed that women's fertility intention negatively associated with the childcare balancing policy in the Japanese corporation. One explanation is that maybe because the research object already have a child or children. Results manifest that the fertility intention of women having a child or children was lower than those without children. This paper also discovered that regular employees had higher fertility intentions than non-regular staff. However, the childcare balancing policy is not significant on regular and non-regular employee's fertility intention. This paper provided policymakers with valuable insights on the establishment of effective childcare policies to enhance women's fertility intentions.

Keywords: fertility intention; childcare balancing policy

1. Introduction

This paper focuses on the relationship between childcare balancing policy and women's fertility intention. The results of this study are vital for policymakers and future women's fertility rate. Firstly, it summarizes the declining birth rate in Japan and explains the reason for declining birth rate from the perspectives of economic and social change, changes in women's values, amongst others. Furthermore, it includes the employment condition of women after marriage or childbirth in Japan. Thereafter, it introduces numerous childcare policies in Japan, not only that of corporations, but also those enacted by the government such as childcare allowance and nursery school. With the above steps, previous studies' were analysed and highlight, which led to the research question.

Then, it summarizes the previous studies which gives rise to this study's two hypotheses. In the third part, this study addresses the analysis by the method of binary logistic regression. Then, it explains the models' results.

Before addressing the context, it is noteworthy that the childcare balancing policy here differs from the parental leave policy, which will be introduced in the literature review.

1.1 the declining birthrate in Japan

The total population has achieved the lowest in recent years (Ministry of Health, Labour and Welfare[1]). Under the circumstance, the declining birth rate and aging problem both exist in current Japanese society.

1.2 the reasons of declining birth rate

In developed countries, social-economic changes, and economic reconstruction gives rise to the declining birth rate. Although it brought a better life and improved the economy for people, under the diverse culture and welfare environment, it is difficult to build a family, for instance, people tend to get married later or do not.

There are several factors that affect the declining birth rate. The direct factors are late marriage, non-marriage, and late birth, whereas women's educational achievement and employment rate, family income amongst others also influence the birth rate (佐藤 2008; 伊達, 清水 2005).

In recent years, the process and progress of gender equality have been distinguished in Japan. Few women would quit their jobs because of marriage or having a child (the bottom of M curve has increased (久我 2018)). Women need to achieve their values other than being a wife and mother. Under this circumstance, giving birth becomes a significant problem in society (今田,池田 2006). There are also other factors regarding Japan's declining birth rate.

ピーター・マクドナルド and 佐々井 (2008) offered a conception of "risk avoidance:" being a part of the stable labor market could bring a high risk for young individuals, therefore, to avoid the risk, young individuals like to choose the method of low risk, such as investing in human capital; improving their educational attainment or having more working experience is the best method; therefore, to make such an investment, they place sufficient energy, such as long-time work, which is adverse for building a family, hence, the birth rate is low.

Additionally, if a family's economy is unstable, it is difficult to raise a child (山本,神田 2008).

After the second baby boom, the birth rate and total fertility rate attained was the lowest in 2019[2]. According to 川本(2018), to solve the problem of a declining birthrate, the government issued several policies since 1994, for example, the Cabinet Office published "Next-generation upbringing support measures," such as supporting young generations' job-hunting, the use of parental leave, however, the birth rate continued to declined annually, thus, in 2007, a childcare balancing policy was issued.

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[1] https://www.mhlw.go.jp/stf/newpage_21481.html

[2] https://www.soumu.go.jp/main_sosiki/singi/toukei/meetings/kihon_56/siryou_1j.pdf

1.3 *women's employment*

In Japan, females do most of the housework (品田 1996; 岩間 1997), especially when it comes to bearing and raising a child. Therefore, the government focused on the work-life-balance policy. A nationwide survey which showed that dual work-family or parents experience more work-family conflicts than other workers (Pleck, Staines, and Lang, 1980).

Women's employment in Japan has always been in the M shape, whereas in recent years, the bottom of M has risen more than previously. This means that more women increasingly choose to work rather than leave their career when it comes to marriage or having a child.

Therefore, for impelling women's employment and fertility intention or diminishing the problem of work-life-confliction, the Cabinet Office, in 2007, issued the childcare balancing policy in the workplace.

There are sufficient specific policies included in the childcare balancing policy. For instance, 駿河 and 張(2003) summarized that there is parental leave, childcare support policies such as work in short-time, flexible work, exemption from overtime work, the abundance of childcare nursery school, childcare allowance, also diminishing men's worktime, which are in most companies' policies.

According to the 2016 Basic Survey on Equal Employment (Ministry of Health, Labour and Welfare), the acquisition rate of parental leave[3] for women and men is 81.8% and 3.16%, respectively. However, there is no clear data about the acquisition rate of childcare balancing policy.

1.4 the problem in previous literature and research question

The previous studies examined the relationship between women's employment and childcare balancing policy, such as how the polices have a positive influence on women's work after their marriage or giving birth, or how they impact the rate of women's authority position and so forth. However, few studies worked on the relationship between childcare balancing policy and fertility intention. And some previous study about the association between childcare balancing and women's fertility intention is unclear. For example, in 村上(2019)'s research, the relationship between childcare balancing policy and women's fertility intention is not significant. However, the research method and research object in this study is different from 村上(2019)'s research. Originally the childcare balancing policy was proposed to increase women's employment rate and children's birth rate. Nevertheless, most studies have focused on employment and ignored the birth rate. Therefore, this study examines the relationship between childcare balancing policy and

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[3] Parental leave: This is a leave that can be taken by law for workers raising children
(https://ja.wikipedia.org/wiki/育児休業)

women's fertility intention. This research is significant and has value for society. It is helpful for policy-makers to move on and ameliorate the policies because we can know whether the policies affect fertility intention positively or not from this study. Furthermore, by examining the relationship between childcare balancing policy and women's fertility intention, the factor, regarding women's fertility intention, childcare balancing policy could be added as a controlled variable in future studies.

As 山口(2004) stated, the actual birth behaviour is strongly related to fertility intentions. Fertility intentions play important role in real birth behaviour (村上 2019).

2. Literature Review
2.1 Women's employment and childcare balancing policy
Family work conflicts are negatively associated with job and life satisfaction (Aryee et al. 1999). Due to the extended working hours and work content, women employees' working productivity and hours which they should have devoted to their families were increased (Vasumathi 2018). Because women have the main responsibility for childcare in society currently, the dual roles of women are difficult for them to balance their work and family. There are always conflicts between work and family, and some women choose not to give birth to avoid conflict. Therefore, work-life balance policies were proposed to solve this problem.

After marriage or giving birth, because of the unequal division of labor at home, women always bear the main responsibility of child care, and began to increase devoting their time to the family. It is difficult for them to balance their work and family. Some women end their careers as a result of having a child. At this point, social support at work, in the form of the organization's family-friendly policies is critical to midlife women because it may make them continue working and contribute their values in the workplace (Marcinkus, Whelan-Berry, Gordon 2007). Allen (2001) proposed that employees who thought their company was less family-supportive had less job satisfaction, experienced more work-family confliction than those who thought their company supported the family more.

In the work-life balance or family-friendly policies, there is not only parental leave but also including flexible work, short-time work, exemption from overtime working, amongst others (脇坂 2011).

2.1.1 parental leave and women's employment
The parental leave policy was implemented in 1992, but it could not penetrate the company, thereafter, in 1999, the revised childcare leave policy by law penetrated the company and influenced employment, and in 2010, companies with parental/childcare leave policy was 68.3% (脇坂 2011).

Companies with the parental leave policy had more female employees; in addition, the more female in high authority the company employed, the more female would continue to work after giving birth (冨田 1994). Besides, in companies where the parental leave policy could be utilized easily, the rate of women continuing to work after marriage was high; in the area where there was more nursery schools, the rate of women continuing to work after giving birth was high. (樋口,坂本,萩原 2016). After 2000, in the company with parental leave, the rate of quitting the job after giving birth was statistical significantly low after 2000 (佐藤, 馬 2008). The company actively used female employees (川口 2011).

In conclusion, from the above research, the parental leave policy is positively associated with women's retention rate.

2.1.2 the introduction of work-life balance policy

The starting point of the work-life balance policy is that although women need to face a numerous issues in their work and life, they can continue working. Individuals who could achieve a work-family balance would not only accomplish their values at the workplace but also achieve their roles, other than the workplace (佐藤 2007).

According to the Cabinet Office 2013, the acquisition rate of parental leave for female was 87.8%, in 2011.

2.1.3 the relationship between work-life balance policy and women's employment

阿部 (2007) proposed that the more the company implemented the work-life balance policy, the more productivity employees had. 冨田 (1994) used the "Questionnaire survey on the actual conditions and issues of women's employment and labor (in 大阪 1993), "and found that parental leave, nursery school in the company, short-time working, and half-day paid leave positively associated with the rate of women continuing to work after childbirth.

According to 武石 (2006), the application of work-life balance policies did not lessen the number of female employees. Numerous studies suggest that the company with family-friendly policies has a positive association with employee's work outcome and their work attitude and female employment rate (斎藤 2017; 川口,笠井 2013; 駿河,張 2003).

2.2 Factors related to the fertility intention of women

By proposing the work-life balance, it is to decrease the conflict of between work and family such as by flexibility in family and work (Hill et al 2001). Nevertheless, in the survey about work-life balance, when the work-life balance policy focuses on "work," "life" is somewhat neglected (Pichler 2008).

Childbearing motivations not only depend on the personal characteristics, but is also be shaped by experiences during childhood, adolescence, and early adult life (Miller 1992).

2.2.1 Husband related factors

The policies could release the burden of housework and childcare for women by making males participate (水落 2011). 藤野（2006）proposed that when the wife's job is non-regular employee or zero paid housewife, the husband's participation in housework would increase the number of another children. 西岡 and 星(2009)'s research, examined whether the work-life balance policy for men would affect women's fertility intention or not, and found that men's participation in housework and childcare influenced women's fertility intention and the number of children. Additionally, in 目黒 and 西岡(2001)'s study, according to survey on women's life consciousness 1999, because the burden of housework and childcare worsened the female's fertility intention, the less the husband participated in housework and childcare, the lower the fertility desire.

2.2.2 Age

It is known that women's average childbearing age has increased (Bray, Gunnell, Davey Smith 2006). The association between advanced age of women with birth outcomes is negative, which is quietly examined by previous studies (Roberts et al 2011). With the increase of women's age, their fertility intention declined (津谷 1999).

2.2.3 Financial Factors

There are various financial-related reasons for women's fertility, such as educational attainment (Axinn, Barber, 2001; Basu, 2002; Rindfuss, Bumpass, St. John 1980; Rindfuss, Morgan, Offutt 1996; Berrington, Pattaro 2014), living with their parents (津谷 1999), amongst others. First, there is an association between educational attainment and fertility intention of women. The role of education that individuals expect is to impart the non-family's values and aspirations (Rindfuss, Bumpass, St. John 1980). High educational achievement of the female is considered one of the most important factors affecting levels of fertility (Axinn, Barber, 2001; Basu, 2002; Rindfuss, Bumpass, St. John 1980). It is possible that better- educated women may assume less traditional role patterns than those less-educated (Rindfuss, Bumpass, St. John 1980). In addition, education has a large indirect influence through age on first birth (Rindfuss, Bumpass, St. John 1980). Moreover, women with college degrees show a great shift toward childbearing, because they began to pursue their careers (Rindfuss, Morgan, Offutt 1996).

Secondly, in Japan the husband's income does affect it in respect of their first baby (岩間 2004). While family income does not affect women's fertility intention, husband's income is positively associated with husband's fertility intention (村上 2019).

Finally, living with parents positively associated with the fertility intention of women, although women choose to work outside, their parents could assist them with child care (津谷 1999).

2.2.4 Employment Status

For women who have two children, regular and non-regular employees' possibility of childbearing intention is both higher than those who are unemployed (松田 2019). The regular employee's fertility intention may be higher than non-regular employee's fertility intention because they have a stable income (村上 2014). The childcare costs affect the children's birthrate for non-employed women whereas it does not impact their employed counterpart (Blau, Robins 1989). However, the previous study did not examine how the work-life balance policy influences regular and non-regular female employee's fertility intention.

2.2.5 Hypotheses:

There has been extensive research regarding the association between childcare balancing policy and women's employment. However, studies on the association between childcare balancing policy and fertility intention of women is rare. Furthermore, studies on the relationship between employment status and women's fertility intention have also been extensively investigated. However, studies on how the childcare balancing policy influences regular and non-regular employee's fertility intention is rare. Therefore, it is important and meaningful to examine the relationship between childcare balancing policy and women's fertility intention. Knowing whether the policy affects the fertility intention of regular and non-regular employees differently is helpful for both policymakers and employers.

➔ H1: Although there are numerous factors regarding the fertility intention of women, the research about the association between childcare balancing policy and fertility intention is few of the previous studies. Furthermore, the policy was originally proposed because the government hoped it would improve women's employment rate and relieve the declining birthrate. The birth rate is strongly related to women's fertility intention (山口 2004; 村上 2019). Thus, hypothesis 1 is as follows:

➔ H1: the association between childcare balancing policy and fertility intention of women is positive.

Although they examined the relationship between employment status and fertility intention of women, the interaction term (childcare balancing policy*employment status)/ whether the childcare balancing policy affects regular and non-regular female employee's fertility intention is unexplored. Thus, hypothesis 2 is as follows:

➔ H2: the regular female employee's fertility intention is higher than the non-regular employee's counterpart under the condition of childcare balancing policy.

3. Data and Methods
3.1 Data

The Japanese Life Course Panel Survey of the Youth (JLPS-Y) data was used. The Japanese Life Course Panel Survey has been conducted annually from 2007–2012. The survey poses questions on a various topic, such as an individuals' occupation, family, education, political consciousness and health. Participants were between 20–34 years, in 2006, when the survey was conducted.

The Japanese Life Course Panel Survey of the Youth in 2009 was chosen to examine hypotheses 1 and 2.

The survey was conducted in 2006 with a total sample size of 3,367. There were 2,974 variables in this data set, in the whole panel survey. The survey method was mail delivery and door-to-door collection. The number of valid responses was 2121 (79%). The data set was chosen because it encompasses questions on the dependent and independent variables. Other data sets covering both related questions are few. For the analysis, samples were restricted married women who were employed. After restricting the samples and cleaning all the missing values, the final sample size was 276 from 3,369.

Wave4, 2010 was adopted to analyse the data set.

3.2 Variables

Tables 3.1 and contain the descriptive statistics for the variables used in this analysis. First, for the dependent variable, the question posed regarding an individuals' fertility intention was "do you want a child or not?" with a binary response choice of 1=yes and 2=no. The response was coded as a dummy variable, with the value 0=no and 1=yes. For simplicity, this variable was named "wantbaby."

Next, for the independent variable, the question posed was "How much do you think the childcare balancing policy is applicable for your workplace?" with an ordinal response: 1=very applicable, 2= somewhat applicable, 3= not very applicable, 4= not applicable. In this analysis, the response has been coded reversely as 1=not applicable, 2= not very applicable, 3= somewhat applicable, 4= very applicable.

Sex has been coded as a binary variable: 1=male, 2=female. For the variable "job," respondents were posed the question "do you have a job or not (including student part-time job)" with a binary response choice: 1=yes, 2=no. The question of "age" is posed as "what is your birthday?" and was coded as a continuous variable from their birth date to age, that is 24–38. The type of job variable was as a dummy variable with the value of 1=regular employee, 0=non-regular employee, which was renamed "regular." For "educational attainment, the question posed was "which school did you attend last? (including the school, you are attending)" was left as a categorical variable. However, it was changed to a dummy variable where the reference=middle and high school was named middle and high school; 1=vocational school and junior college vocational college; 1=university and graduate school university.

The following question was posed: "How satisfied are you feeling the relationship with your child," with six values. When the value equals six, it means respondents do not have a child. Thus, the dummy variable "child" was created, where 0=have no children; 1=have a child or children. It has been named "child." For the variable "marriage," the question posed was "are you married?" was coded as a categorical variable with 1=married, 2=unmarried (single), 3=bereavement, 4=divorce. To measure a respondent's income, a variable "income" was determined including a family's income in the past year.

For the restriction item, respondents were restricted to married women who were employed. The variables "child," "marriage," and "sex" was restricted with the following values: child=6, marriage=1, and sex=2 (female).

Table 3.1 describes the descriptive statistics in my analysis.

	PERCENT %	
FERTILITY DESIRE		
YES	63.77	176
NO	36.23	100
EMPLOYMENT STATUS		
REGULAR EMPLOYEE	47.10	130
NON-REGULAR EMPLOYEE	52.90	146
WORKPLACE		
NOT APPLICABLE	14.13	39
NOT VERY APPLICABLE	16.30	45
SOMEWHAT APPLICABLE	36.59	101
VERY APPLICABLE	32.97	91
INCOME		
APPROXIMATELY 2000,000	0.36	1
APPROXIMATELY 300,000	8.33	23
APPROXIMATELY 400,000	14.13	39
APPROXIMATELY 500,000	27.54	76
APPROXIMATELY 700,000	31.16	86
APPROXIMATELY 1,000,000	13.41	37

APPROXIMATELY 1,500,000	3.62	10	
APPROXIMATELY 2,000,000	0.72	2	
OVER 2.250,000	0.72	2	
EDUCATIONAL ATTAINMENT			
MIDDLE SCHOOL AND HIGH SCHOOL	23.55	65	
VOCATIONAL SCHOOL AND JUNIOR COLLEGE	47.46	131	
UNIVERSITY AND GRADUATE SCHOOL	28.99	80	
	Mean (sd)	Min	max
AGE	33.628 (3.44)	24	38
N=274			

3.2 Estimation Method: Binary Logistic Regression

Binary logistic regression model is a analysis which the dependent variable is dummy variable (Midi, Sarkar, Rana 2010). Logistic regression measures the relationship between the categorical dependent variable and one or more categorical or continuous independent variables by estimating the probabilities using a logistic function, and the distribution is cumulative (irfy[4]).

The odds in the logistic regression means the ratio of the probability of one outcome to another, or it could be extended to explain the odds of success with one group as opposed to another, which is the odds ratio (Powers and Xie 2008).

The binary logistic regression equation appears as follows:

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[4] https://analyticsbuddhu.wordpress.com/2016/07/02/introduction-about-logistic-regression-model/).

https://medium.com/@ODSC/logistic-regression-with-python-ede39f8573c7

$$\log(Y)= \log\left(\frac{p}{1-p}\right)= \alpha +\beta_1 X_1+\beta_2 X_2+\ldots+\beta_n X_n \qquad (3.1)$$

In this study, the p means the probabilities of an event occurs, α is the intercept of the model, β is the coefficient of X, and X is independent variable (Sperandei 2014).

4. Results

4.1 Analysis—Hypothesis 1 and 2

<Women who has a job and are married>

Table 4.1 shows the first binary logistic regression to examine H1 and H2 in Models 1 and 2, respectively.

Table 4.1: Binary logistic regression results predicting the possibility of women's childbearing desire using data JLPS-Y 2010

wantbaby	Model 1 Exp(β)	Std. Error	Model 2 Exp(β)	Std. Error	Model 3 Exp(β)	Std. Error
workplace	0.608**	0.096	0.697*	0.116	0.593*	0.123
age	0.804***	0.04	0.842**	0.044	0.804***	0.04
vocational collge	2.162*	0.769	2.132*	0.774	2.165*	0.77
university	3.217**	1.355	2.313 †	1.012	3.206**	1.352
ref:middle and high school						
income	1.02	0.12	1.006	0.121	1.018	0.122
regular employee	2.090*	0.687	2.309*	0.778	1.751	1.72
Ref: non-regular employee						
child (ref: no child)			0.181**	0.089		
regular employee*workplace					1.061	0.333
intercept	1640.259	2928.058	1353.643	2549.075	1813.553	3381.962
R-square	0.1889		0.231		0.189	
Likelihood Ratio Test	67.91		83.01		67.95	
AIC	305.7		292.6		307.66	
BIC	330.99		321.51		336.57	
N=274						

***p<.001; **p<.01; *p<.05 †p<.1

In Model 1, shows the variable age, which previous studies have argued that there is a negative association between women's age and their fertility intention (Roberts et al., 2011; 津谷 1999). In other words, the odds ratio 0.802 (p<.001) showed with the increase of women's age, their fertility intention declined. Women with high educational attainment have higher fertility intention than those with low educational attainment (see Model 1 of Table 4.1). These results are contrary to most previous findings that women with high educational attainment have lower fertility than those with low educational attainment, or better-educated women have less traditional pattern roles, although the previous studies mentioned it as fertility rather than fertility intention (Axinn, Barber, 2001; Basu, 2002; Rindfuss, Bumpass, St. John 1980). The fertility intention of women graduating from vocational college and university was higher than those graduating from middle and high school (2.162, p<.05; 3.127, p<.01). Basu (2002) showed that educated women understand gender equality more, which may influence their fertility. However, Heiland, Prskawetz

and Sanderson (2005) showed that there is a positive association between desired family size and women's education attainment. If educated women marry and their husbands can offer them a better and equal home, their fertility intention may not decrease.

There is one possibility that this study's findings of married, women who are employed differ from previous studies due to limited observations. Previous studies showed the relationship between income and fertility intention. Contrarily, in this study, the item income is not significant. Furthermore, previous studies found that female regular employee's fertility intention was higher than non-regular employee's. In Model 1, the odds ratio was 2.090 (p<.05). This concurred with previous studies' findings on the relationship between employment status and fertility intention (村上 2014).

Regarding the independent variable workplace, the odds ratio was 0.608 (p<.01), which means that the association between workplace with childcare balancing policy and fertility intention of women was negative. In other words, the more applicable the childcare balancing policy in the workplace is, the lower the fertility intention of women. This result seems contrary to the proposed childcare balancing policy's purpose (Cabinet Office 2007). Therefore, the possible reason is that family-friendly policies are unlikely to be strong instruments for promoting fertility (Dey 2006). Childbearing has a negative association with labor participation (Bernhardt 1993). These policies do play an important role in women's career, such as increasing women's employment rate (駿河, 張 2003), and women in high authority (山本 2014; 斎藤 2017). This may give rise to women focusing more on their work than on having a child. However, because the condition of women without children was not limited, the objections included women who have a child or children which must be considered. In Model 2 of Table 4.1, women who already had a child had less fertility intention than those without children (0.181, p<.01), which concurs with previous studies that the more child or children they have, they less their fertility intention would be (福田 2011).

Table 4.2: Ordinal logistic regression predicting the possibility of female working in the workplace with childcare balancing policy

workplace	Exp(β)	Std. Error
age	-0.012	0.036
child	1.092***	0.293
ref: no child		
regular employee	-0.925***	0.263
ref: non-regular employee		
fertility desire	-0.544*	0.273
income	-0.05	0.097
ref: middle and high school		
vocational collge	-0.267	0.294
university	-0.570 †	0.345
R-square	0.075	
Likelihood Ratio Test	53.96	
N=274		

***p<.001; **p<.01; *p<.0! †p<.1

Table 4.3: Binary logistic regression predicting the possibility of people having child using data set JLPS-Y 2010

child	Exp(β)	Std. Error
workplace	2.030***	0.339
vocational college	0.79	0.352
university	0.223**	0.105
ref: middle and high school		
age	1.279***	0.061
income	0.887	0.116
regular employee	1.555	0.555
ref:non-regular employee		
intercept	0.001	0.002
R-square	0.22	
Likelihood Ratio Test	70.26	
N=274		

***p<.001; **p<.01; *p<.05;†p<.1

In Table 4.2, it shows that women with a child or children are more likely to work in a company with the childcare balancing policy than those without children (1.092, p<.001). In Table 4.3, women working in a better workplace with the childcare balancing policy have more possibility of having a child or children than those at a worse workplace (2.030, p<.001). There is a possibility that women employed at the workplace with better applicable childcare balancing policy may already have a child or children, therefore, their fertility intention is low. Thus, the result could explain why the result of women working in the childcare balancing policy has a low fertility intention.

In Model 3 of Table 4.1, to prove H2, the interaction term workplace*regular employee (dummy variable) was added. First, the variable workplace remained significant, although its value decreased to 0.593 (p<.05) from 0.608 (p<.01) in Model 1. Although the interaction term was added, the negative relationship between workplace with childcare

balancing policy and women's fertility intention remained. This is contrary to H1, as previously indicated. The variable age also showed its significance although its value slightly decreased compared to Model 1of Table 4.1, which is a negative association between age and fertility intention of females (0.802, p<.001). The older the women, the lower the fertility intention, which concurs with previous research findings (Roberts et al., 2011; 津谷 1999).

Second, educational attainment remained positively associated with women's fertility intention. The fertility intention of women graduating from better-educated level school was higher than those graduating from lower-educated level school (2.165, p<.05; 3.206, p<.01). Although most previous studies proved that better-educated women would have less traditional pattern roles, instead, they tend to pursue career development (Rindfuss, Morgan, Offutt 1996). However, this study's analysis showed a positive association between women's fertility intention and educational achievement. The income item remained not statistically significant.

Lastly, after adding the interaction term of workplace*regular employee, the regular employee was not statistically significant in Model 3. Furthermore, the interaction term was not significant. Therefore, H2 could not be proven. There are several reasons for the non-significance of the interaction term. First, non-regular employees were not qualified to benefit from the childcare balancing policies in the company compared to regular employees. Second, the insignificant result may be due to the limited number of observations.

5. Discussion and Conclusions

5.1 Discussion

The declining birth rate in Japan has been a serious problem. There are various reasons for explicating why the birth rate keeps decreasing, such as late marriage (伊達, 清水 2005) and social-economic changes. Under this circumstance, several policies were proposed to balance individuals' work and family (Cabinet Office 2007).

This study mainly examined the relationship between childcare balancing policy and women's fertility intention. Two hypotheses were used to predict the possibility of women's fertility intention using the Japanese Life Course Panel Survey of Youth data from 2010. H1 and H2: the association between childcare balancing policy and women's fertility intention, and whether the childcare balancing policy influences regular and non-regular employee's fertility intention were tested, respectively. The observations were restricted to married women who are employed.

For H1, the result showed that women's fertility intention negatively associated with the childcare balancing policy in the Japanese corporation, which was contrary to its purpose

(Cabinet Office 2007). Additionally, family-friendly policies could not promote fertility intentions (Dey 2006). To explain the negative result, Tables 4.2 and 4.3 were built. Model 2 in Table 4.1 shows that the fertility intention of women having a child or children is lower than those without children. Because the observations were not limited to women without children, there is a possibility that women who already have a child/ children tend to work for companies with a childcare balancing policy, thus their fertility intention is low. Tables 4.2 and 4.3 showed the above assumptions.

Except for the educational attainment, other results in Table 4.1 concur with previous studies. The negative relationship between childcare balancing policy and women's fertility intention should be considered by policymakers. The reason for the negative association needs to be explored in future research. Furthermore, because the negative relationship in this study may include women who already have a child or children and tend to work in the workplace with childcare balancing policy, policy-makers should consider the policy for married women without children. Nonetheless, for H2, the interaction term did not show significance. There are two possible explanations for the non-significance: first, the non-regular employee could not take the same advantage of childcare balancing policy as the regular employee; second, the limited sample size. Given that the childcare balancing policy was proposed while most research only focused on the relationship between women's employment and the policy (阿部 2007; 富田 1994; 武石 2006; 斎藤 2017; 川口,笠井 2013; 駿河,張 2003) , examining the relationship between childcare balancing policy and women's fertility intention is an important endeavor. The findings demonstrates that the relationship between childcare balancing policy and women's fertility intention is negative. This finding is crucial for policymakers and the government to consider.

5.2 Limitations

Although this study has contributed to understanding how childcare balancing policy interacts with women's fertility intention, there are several limitations and problems.

First, the problem of selection bias exists in this research. Future studies should concentrate on experimental methods to prove the causal effects between the childcare balancing policy and women's fertility intention.

Second, in dealing with the independent variable workplace, the question posed to respondents "How applicable do you think the childcare balancing policy is in your company?" However, in the analysis sometimes this independent variable was regarded as the childcare balancing policy.

Third, due to the limited sample size, only the controlled variables which are important for analysis were added. Other variables such as "number of siblings," "father's involvement in childcare" were not included.

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