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MARRIAGE, CHILD BEARING AND THE PROMOTION OF WOMEN TO MANAGERIAL POSITIONSⁱ

By AI NAKANO

The opportunities offered to those working women who are highly skilled and have significant experience have increased considerably since the introduction of the Law on Securing Equal Opportunities and Treatment between Men and Women in Employment. In this paper, we reveal the effect of marriage or child bearing on women and their prospective promotion to managerial positions. We show that having children increases the probability that men will be promoted, but decreases the likelihood of promotion for women; nonetheless, having children does not affect either gender's desire to reach management positions in their career.

1. Introduction

In Japan, as women attain higher education, many of them join the labor market and try to achieve professional success. Women who have family responsibilities such as raising children and housekeeping face great difficulties if they are employed in the labor market. In Japan, to ensure that support for women is compatible with housekeeping and jobs with the government and private firms, the Law on Securing Equal Opportunities and Treatment between Men and Women in Employment was introduced in 1986. However, many working women find it difficult to balance the responsibilities of raising children with their jobs.

In this paper, we confirm that marriage and the responsibility of raising children prevent women who work in firms from attaining managerial positions, and whether gender differences exist in this regard. We find a difference in the ratio of men and women in managerial positions. Why is this difference observed? It is a serious issue, and in this paper, we try to answer this question.

According to the data, the ratio of men holding the position of chief of office is 22.5% and that of women is 3.3%. Further, the ratio of men working as head of department is 8 % and that of women is 0.5 %.

Figure 1 shows the trends among women with regard to the holding of managerial positions between the years 1998 and 2004. These trends indicate that the proportion of promotions to managerial positions among women is rising, and that 10% of women are managers. Further, among all employees, 5% of women work as chief of managers. These trends show that the percentage of women's promotions to managerial positions among Japanese women is the lowest in the world. The Naikakuhu, the Japanese ministry, announced that the proportion of women at the managerial level is around 10% in Japan, around 57.8% in the Philippines, around 42.5% in the US, and around 34.5% in the UK.

This propensity shows that the share of women promoted to the management class in Japan

ⁱ I want to express my appreciation to Professor Naoki Mitani. The data for this secondary analysis "Kyaria no keisei to shigoto to katei no ryoujitsu ni kansuru ishikichousa, 2001, Japan Institute of Workers' Evolution" was provided by the Social Science Japan Data Archive, Center for Social Research and Data Archive, Institute of Social Science, The University of Tokyo.

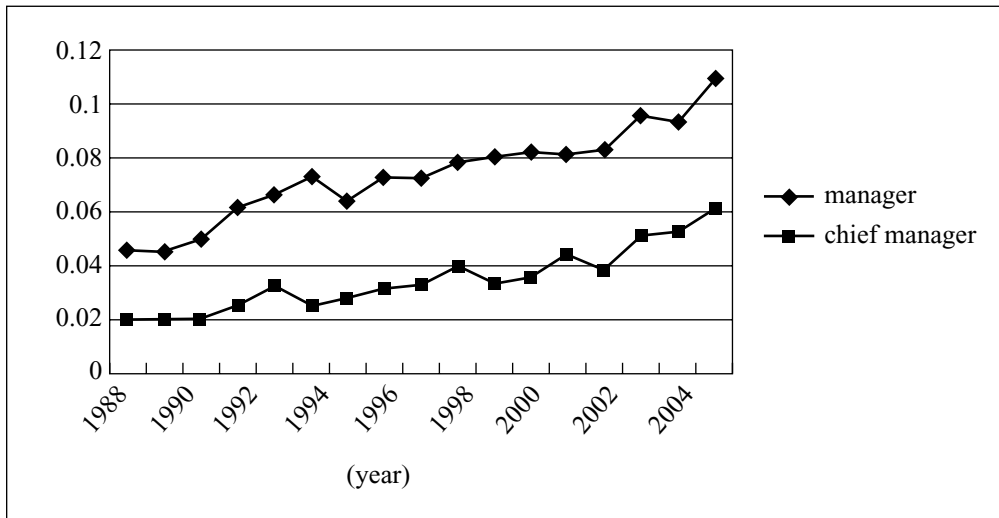


FIGURE 1. The ratio of women in management positions

is the lowest in the world.

Generally, managerial positions require superior leadership and problem solving skills in addition to general skills. Therefore, managers are expected to continue with work after marriage or the birth of children and are required to have a high level of job training and experience. However, many working women find it challenging to balance their work with the responsibilities of raising children. It is difficult for women to acquire positions that involve a high level of skill and training that is demanding.

Recent research in Japan has revealed the relationship between marriage or the birth of children and work. Matsuzaki and Umesaki (2002) conducted a case study on women employed in a rural bank, and found that the women found it difficult to work overtime. They also changed their occupations as they felt their careers were affected by their responsibilities at home and raising children. Tomita (2005) reveals the effects that marriage and having children have on qualifications within the office and promotions to managerial positions. The results of an ordered probit analysis indicated that marriage facilitates the promotion of women to managerial positions, while having children lowers opportunities for such promotions. Yasuda (2009) found that less overtime or flexible working hours lowered the desire to secure a managerial position. On the other hand, women whose job profiles are equally important as those of men have a strong desire to gain managerial positions. Koike (2008) analyzes the effects that aspirations toward career advancement have on the attainment of managerial positions among women who are full-fledged employees.

In this paper, we investigate the effects of marriage and the birth of children on women's desire to work in managerial positions and among women who currently hold such positions. It is necessary to examine the dual aspects of the relationship between marriage and the birth of children and women's promotions. First, marriage and the birth of children affect a woman's decision to continue working in the labor market. It is important that women be capable

of continuing to work after marriage and the birth of children. Many studies report that it is difficult for women to continue work and that they need support systems.

Second, women who have the ambition and ability should make full use of their potential regardless of their household responsibilities. This paper is organized as follows. In section 2, we outline our analysis. In section 3, we present the data used in our analysis. Next, in section 4, we analyze the hypothesis about working women. In section 5, we present the conclusions of our study.

2. Analysis

First, it is important to consider whether women are motivated to work in managerial positions. The data of our analysis indicates that most of the women have no desire to secure managerial positions; only 3.7% of the women desired to attain such positions. The factor responsible for the difference between men and women is that women assume responsibilities at home. In this section, we studied the effect of raising children on the desire to work in managerial positions.

It appears to be important to analyze the effects of marriage and the birth of children on the motivation to work in managerial positions.

3. Data

In this paper, we use the data set “Kyaria no keisei to shigoto to katei no ryouritsu ni kansuru ishikichousa.” This micro data was created in 2001, and the targets were men and women employed in companies with more than 100 employees. The number of responses obtained was 1697 for men and 5347 for women. Our target population in this analysis was women who continue to work after marriage and the birth of children; however, we excluded women who left the labor market. The basic statistics are presented in Table 1. In this figure, the ratio of men in managerial positions is 53%, and that of women is 3.7%. This data is similar to that obtained by Koike (2008).

4. Empirical analysis (1)

In this section, we investigate whether women desire to work in managerial positions. The explained variable is the motivation to work in managerial positions, which takes the value of 1 when women have the motivation and a value of 0 when they do not. We used age, school career, characteristics of the firm where the women were employed, etc., as explained variables. For the characteristics of the firm, we considered the type of industry, and the size of firms.

Table 2 indicates the results of this analysis. First, older women have a greater desire to

Table 1. Summary Statistics

		male all (n=1643)				male more than 35years (na=942)			
variables		mean	S.D.	min	max	mean	S.D.	min	max
age		38.087	9.619	19	66	44.773	6.974	35	66
educational attainment	junior high school or high	0.278	0.402	0	1	0.259	0.438	0	1
	junior college or college	0.720	0.449	0	1	0.738	0.440	0	1
married		0.710	0.451	0	1	0.894	0.308	0	1
child		0.606	0.489	0	1	0.828	0.378	0	1
industry	manufacture	0.389	0.488	0	1	0.391	0.488	0	1
	construction	0.102	0.303	0	1	0.105	0.307	0	1
	wholesale or retail	0.134	0.341	0	1	0.130	0.336	0	1
	service	0.206	0.405	0	1	0.209	0.407	0	1
	others	0.155	0.362	0	1	0.152	0.359	0	1
industry size	less than 299	0.153	0.360	0	1	0.163	0.370	0	1
	300 ~ 999	0.221	0.415	0	1	0.232	0.423	0	1
	more than 1000	0.617	0.486	0	1	0.597	0.491	0	1
changes in the firm		2.527	2.794	0	20	3.341	3.189	0	20
change of occupations		0.265	0.441	0	1	0.354	0.478	0	1
desire to management positions		0.269	0.444	0	1	0.280	0.450	0	1
position		0.528	0.499	0	1	0.792	0.406	0	1

		female all (n=4975)				female more than 35years (n=1808)			
		mean	S.D.	min	max	mean	S.D.	min	max
age		33.516	9.352	18	72	43.930	6.881	35	72
educational attainment	junior school or high school	0.350	0.477	0	1	0.527	0.499	0	1
	junior college	0.373	0.484	0	1	0.296	0.457	0	1
	some college or more than	0.272	0.445	0	1	0.169	0.357	0	1
married		0.469	0.499	0	1	0.724	0.447	0	1
child		0.304	0.460	0	1	0.610	0.488	0	1
industry	manufacture	0.378	0.485	0	1	0.377	0.485	0	1
	construction	0.097	0.296	0	1	0.081	0.273	0	1
	wholesale or retail	0.134	0.341	0	1	0.118	0.324	0	1
	service	0.223	0.417	0	1	0.252	0.385	0	1
	others	0.138	0.345	0	1	0.136	0.342	0	1
industry size	less than 299	0.170	0.376	0	1	0.214	0.410	0	1
	300 ~ 999	0.263	0.440	0	1	0.289	0.453	0	1
	more than 1000	0.543	0.498	0	1	0.477	0.500	0	1
changes in the firm		1.295	1.747	0	20	1.883	2.159	0	20
change of occupations		0.218	0.413	0	1	0.055	0.229	0	1
desire to management positions		0.037	0.188	0	1	0.033	0.469	0	1
position		0.107	0.309	0	1	0.249	0.433	0	1

work in managerial positions. Younger women have a lower desire to work in such positions; the reason seems to be that younger women are more likely to get married and have children in the future, or they already have very young children and, therefore, find it difficult to manage work. Moreover, older women also have more experience in the firm.

The explanatory dummy variables take a value of 1 if a woman graduated from junior college or graduated from college at the base of junior high school. The empirical results show that women who graduate from junior college or college tend to have a higher motivation to

work in managerial positions.

Having children does not affect the desire to work in managerial positions. Although Yasuda (2009) finds that women with children tend to have a strong desire to work in managerial positions, our results did not support this finding. As Yasuda explains, women with children still have a strong desire to work in managerial positions. On the other hand, since it is difficult for them to balance the responsibilities of raising children and work, women avoid positions with responsibility. As a result, women lack a strong motivation to work in managerial positions. In this paper, however, neither of these effects was observed.

5. Empirical Analysis (2)

In the previous section, we discussed the effects of marriage and the birth of children on the desire to work in managerial positions. We then considered cases in which women actually wish to work in managerial positions after marriage and the birth of children.

In this section, we set the explained variable as the likelihood of women holding managerial positions, and we also included data on men for comparison. For both men and women, the explained variable takes a value of 1 if they hold managerial positions and takes a value of 0 if they hold other positions. Koike (2008) analyzed men and women's promotions to managerial positions, and in our analysis, we used two types of datasets categorized by age. At first, as in Koike's study, all the men or women were included. Next, we used the data for men and women older than 35 years of age. The reason for separating the data by age was that most men and women reach managerial positions after the age of 35. In this paper, the average age of those working in managerial positions was greater than 35 years for both men

Table2. Results (desire for promotion management positions or not)

		estimated variables	z	marginal effect
age		0.020 ***	4.18	0.001
educational attainment	junior college	0.101	1.08	0.007
	some college or more	0.501 ***	5.45	0.041
married		0.062	1.47	0.004
child		-0.089	-0.87	-0.006
industry	construction	-0.210	-1.38	-0.012
	wholesale or retail	0.159	1.53	0.012
	service	0.044	0.47	0.003
	others	0.260 ***	2.60	0.020
industry size	300~999	0.162	1.44	0.001
	more than 1000	0.122	1.17	0.008
changes in the firm		0.083 ***	4.94	0.005
change of occupation		0.126	0.14	0.001
constant term		-3.306 ***	-14.91	—
number of obs.				4975
likelihood				-722.30
chi(2)				116.83
prob>chi(2)				0.000
pseud R2				0.075

Table3. Results (Promotion to management positions or not)

		male all			male over 35years		
explanatory variables		estimated variables	z	marginal effect	estimated variables	z	marginal effect
age		0.090 ***	15.94	0.036	0.442 ***	5.00	0.011
educational attainment : some college or more		0.666 ***	7.26	0.261	0.784 ***	6.63	0.231
married		0.210 *	1.80	0.083	−0.087	−0.48	−0.021
child		0.312 ***	2.87	0.124	0.427 **	2.28	0.122
industry	construction	−0.095	−0.71	−0.038	−0.118	−0.67	−0.031
	wholesale or retail	0.215 *	1.83	0.084	0.175	1.05	0.042
	service	0.107	1.04	0.042	−0.042	−0.32	−0.011
	others	0.206 *	1.80	0.081	0.189	1.15	0.045
industry size	300~999	0.034	0.27	0.013	0.178	1.13	0.043
	more than 1000	−0.149	−1.32	−0.052	−0.091	−0.65	−0.023
changes in the firm		0.065 ***	3.69	0.026	0.026	1.33	0.006
change of occupation		−0.132	−1.34	−0.052	−0.434 ***	−3.81	−0.116
desire to management positions		0.444 ***	5.10	0.172	0.617 ***	4.76	0.136
constant terms		−4.398	−17.76	−	−1.999	−4.71	−
number of obs.		1643			942		
likelihood		−739.97			−410.92		
chi(2)		792.69			141.61		
prob>chi(2)		0.000			0.000		
pseud R2		0.349			0.147		

		female all			female over 35years		
explanatory variables		estimated variables	z	marginal effect	estimated variables	z	marginal effect
age		0.078 ***	20.52	0.008	0.048 ***	8.61	0.141
educational attainment	junior college	0.314 ***	4.24	0.036	0.312 ***	3.66	0.964
	some college or more	0.714 ***	9.09	0.101	0.883 ***	9.19	0.306
married		0.162 **	2.18	0.018	0.133	1.33	0.383
child		−0.313 ***	−3.78	−0.030	−0.430 ***	−4.50	−0.131
industry	construction	−0.105	−0.88	−0.010	−0.029	−0.21	−0.008
	wholesale or retail	0.210 **	2.34	0.025	0.161	1.39	0.050
	service	0.440 ***	6.01	0.058	0.510 ***	5.68	0.164
	others	0.163 *	1.84	0.019	0.145	1.34	0.045
industry size	300~999	0.214 **	2.46	0.025	0.164 *	1.65	0.050
	more than 1000	0.238 ***	2.89	0.025	0.252 ***	2.64	0.075
changes in the firm		0.076 ***	5.29	0.008	0.053 ***	3.24	0.016
change of occupation		0.009	0.13	0.001	−0.091	−1.16	−0.026
desire to management positions		1.010 ***	9.32	0.210	1.100 ***	7.60	0.403
constant terms		−5.001 ***	−26.74	−	−0.404 ***	−	−
number of obs.		4975			1808		
likelihood		−1222.72			−858.27		
chi(2)		942.38			314.66		
prob>chi(2)		0.000			0.000		
pseud R2		0.278			0.155		

and women. Since young men and women serve in a firm for fewer years, the probability that they will achieve managerial positions is not very high.

We used two variables—one variable referred to the marital status of the men and women, and the other indicated whether they had children. If marriage and childbirth affect perfor-

mance and efficiency on the job, it can be thought that they would also have an effect on promotions to managerial positions. In the case of men, when married men entrust household responsibilities to their wives, they can attend to their jobs and the possibility of working in managerial positions will rise. The ratio of men with children was 60.6% for all the samples in this data, while 82.8% of the men were over 35 years old. The ratio of women with children was 30.4% for all the samples, while 61.0% of the women were over 35 years old.

Table 3 shows the empirical results for men and women's promotions to managerial positions. First, the probability of promotions to managerial positions increases with age. This suggests that the higher the age and years of experience, the greater is the probability of gaining a promotion to a high ranking position.

Regarding education, the variable took a value of 1 if the person graduated from college or junior college at the base of junior high school, high school, or junior college. Women who graduated from junior college or college tended to have a higher motivation to work in managerial positions. This suggests that highly educated women tend to enter the firm at the general level. They then gain experience and, as a result, have a greater chance of transference, change in of disposition. Men are more highly educated than women and one of the reasons for the differences in the attainment of managerial positions between men and women is this difference in education.

With regard to the type of industry, very few people were working in the electricity, gas, and water sectors; conveyance and communication; and finance and insurance. Therefore, we created dummy variables to combine these industries. The results indicate that women in the service industry are more likely to work in managerial positions.

To scale the effects of the size of firms, we created dummy variables that took a value of 1 if the number of employees was more than 300 and less than 999, and a value of the number of employees was more than 1000 at the base of the case of less than 300. These results indicate that women are more likely to attain managerial positions when the number of employees is more than 1000. In the case of men, however, large firms do not have an effect on the attainment of managerial positions.

Regarding the changes in position, men and women tend to have high probabilities of experiencing many changes in position. One of the reasons for changes in positions is related to the education of employees. Greater experience gives employees higher amounts of skill and knowledge; therefore, it appears that the higher the experience and skills of employees, the higher is the probability that they will attain managerial positions.

Groups that have a desire to attain managerial positions in the future actually have a high possibility of attaining such positions. To begin with, having the will to work in managerial positions plays an important role in the attainment of such positions. Men have a higher motivation to attain managerial positions as compared to women, because of which differences in the ratio of men and women in such positions arise. Very few women have the desire to work in managerial positions.

We do not find a statistical effect for marital status in the case of men and women. The effects of having children differ among men and women. When men have children, it has a positive effect on promotion to managerial positions, and when women have children it has a

statistically negative effect on such promotions. In the case of men, having children leads to strong motivation and increases the possibility of attaining managerial positions.

On the other hand, having children has a negative effect on women's promotions to managerial positions. This fact implies that the responsibilities of raising children and tending to the household are a burden on women.

With regard to the estimation of women's motivation, we did not find a negative effect on the probability of women gaining promotions to managerial positions. However, in this section, the results show that having children has a negative effect. This implies that having children hampers job performance rather than having an effect on women's motivation. Therefore, women with children find it difficult to perform their jobs.

In Japan, women in the labor force are aged between their late twenties to early thirties. This phenomenon can be represented in the form of an M curve. The first reason for few promotions among women to managerial positions is that many women quit the labor market when they marry or have children, and this reduces the development of their skills and puts an end to job experience. In the data used in this analysis, we omitted those samples of women who started a new job after marriage or having children as our targets were men and women who continued with the same job throughout the study period. Therefore, marriage and having children had a negative effect on promotion after omitting women who only exited the labor market temporarily. Even if women continue with their jobs, a second constraint exists in terms of getting promoted to managerial positions.

6. Empirical analysis (3)

In this section, we analyzed whether among married women the birth of children and promotion to managerial positions are simultaneously decided.

The empirical equations are

$$\begin{aligned} H_1 &= a_1 + b_1 X + u \\ H_1 &= 1 \quad \text{if } H_1^* \geq 0 \\ H_1 &= 0 \quad \text{otherwise} \end{aligned} \tag{1}$$

$$\begin{aligned} H_2 &= a_2 + b_2 X + u \\ H_2 &= 1 \quad \text{if } H_2^* \geq 0 \\ H_2 &= 0 \quad \text{otherwise} \end{aligned} \tag{2}$$

$$\begin{aligned} E(e_i^{H1}) &= E(e_i^{H2}) = 0. \\ \text{Var}(e_i^{H1}) &= \text{Var}(e_i^{H2}) = 1. \\ \text{Cov}(e_i^{H1}, e_i^{H2}) &= p. \end{aligned}$$

Equation (1) denotes the birth of children by married women and equation (2) indicates whether married women are promoted to managerial positions.

Table 4. Results

		promotion to management positions		having the children	
explanatory variables		estimated variables	z	estimated variables	z
age		0.067 ***	14.28	0.073 ***	17.87
educational attainment	junior college	0.411 ***	4.38	-0.108	-1.56
	some college or more	0.945 ***	9.44	-0.336 ***	-4.32
industry	construction	0.086	0.58	-0.467 ***	-4.30
	wholesale or retail	0.097	0.80	-0.213 **	-2.22
	service	0.451 ***	4.91	-0.127 *	-1.64
	others	0.247 **	2.18	-0.189 **	-2.06
industry size	300~999	0.128	1.21	-0.014	-0.16
	more than 1000	0.097	0.96	-0.343 ***	-4.12
changes in the firm		0.070 ***	3.98	0.048 ***	2.94
change of occupation		-0.095	-1.09	-0.265 ***	-3.65
desire to management positions		1.090 ***	7.74	0.029	0.14
constant terms		-4.555 ***	-18.38	-1.923 ***	-11.08
ρ				-0.144 ***	-2.86
number of obs.					2335
log likelihood					-1996.812
Wald chi2(24)					842.1
prob>chi2					0

The empirical method we used was a bivariate probit model.

In Table 4 shows the that relationship between having children and promotion to managerial positions for women is represented by ρ , and the estimated ρ is statistically negative, which indicates that there is a trade-off between the birth of children and promotion to managerial positions for women. This implies that women with household responsibilities choose either to have children or take a promotion to a managerial position.

7. Conclusion

Although men and women are guaranteed equal career opportunities by the Human resources and the Equal Employment Opportunity Law, very few women gain promotions to managerial positions. The main factor is the difference between men and women in their roles at home.

The results from this paper suggest that marriage and the birth of children do not affect the desire to work in managerial positions. However, with regard to whether or not they actually attain managerial positions, having children has a negative effect on women's promotions to managerial positions and a positive effect on men's promotion to managerial positions. This result implies that having children leads to a higher desire for promotions to managerial positions and increased productivity among men, but in the case of women, having children is a burden that hampers career progression.

Further, our empirical analysis suggests that in the case of married women, having children and promotion to managerial positions are simultaneously decided.

Finally, we describe policy tasks. Employees go along with the style of working such as

overtime. It is the one of the ways in which men and women achieve a balance between household work and their jobs.

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