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Author(s)	Takeuchi, Mamiko; Shin, Hye-jeong; Matsushige, Hisakazu
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[Note]**Family-friendly Policy and Corporate Performance:****A Case from the Japanese Pharmaceutical Industry*****Mamiko Takeuchi[†], Shin Hye-jeong[‡] and Hisakazu Matsushige[‡]****Abstract**

As their social responsibility, companies are required to create more effective family-friendly working conditions amidst trends such as declining birthrate and rapid increase in aging. However, companies usually manage their operations on the basis of the principle of optimization to maximize profits. Therefore, they are less willing to launch family-friendly initiatives unless such initiatives yield profits, even if they are effective in supporting a harmonious balance between employee job performance and domestic life. In response to this situation, recent studies have been approaching family-friendly measures as part of profitable strategies for human resource management, not as part of a corporate welfare program for facilitating employee amenities.

This study examined the effect of utilization measures for female employees and family-friendly policies on corporate performance by matching corporate data in the Japanese pharmaceutical industry surveyed in 1995 and data specified in the 1996, 1998 and 2001 editions of the "Corporate Quarterly Report." As a result of the examination, we discovered that particular job training programs for female employees as part of active utilization measures for female employees led to a positive effect on boosting corporate performance. This suggests that the aggressive utilization of competent female employees is important to companies. In addition, it is conceivable that special commuting systems, such as the flextime system and the staggered working hours system, could potentially reduce corporate productivity. However, it was shown that this negative impact can be smaller when compared with the positive impact of utilization measures for female employees on corporate performance.

Key Words: Family-friendly policy, corporate performance, female employee

JEL Classification: J16, J17, J24

1. Introduction

The concept of corporate family-friendliness emerged amidst trends of increasing female employment, declining birthrate, rapid increase in aging and remarkable changes in domestic lifestyles

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[†] Research Fellow, Japan Society for the Promotion of Science

[‡] Master of Osaka School of International Public Policy (OSIPP), Osaka University

[‡] Professor, Osaka School of International Public Policy (OSIPP), Osaka University

after the 1980s. It is an indicator of “corporate levels of consideration toward their employees’ family life.”¹ The Japanese Ministry of Health, Labor and Welfare has been focusing closely on companies that conduct a diverse and flexible form of employment management in consideration of their employees’ family life by introducing various measures for facilitating a harmonious balance between employee job performance and domestic life. The ministry defines these enterprises as family-friendly companies. In addition, in 1999, with a view to promote such working conditions, the ministry launched a special award system for companies that run outstanding family-friendly initiatives.

In view of this situation, recent studies have been approaching family-friendly measures not only as corporate social responsibility against the background of trends such as a declining birthrate and rapid increase in aging but also from the perspective of effective strategies for better human resource management. However, companies usually manage their operations on the basis of the principle of profit maximization. Therefore, they are less willing to launch family-friendly initiatives unless such initiatives yield profits, even if the initiatives prove effective in improving employees’ working conditions. Further, until now, there have been no substantial studies that focus on whether or not family-friendly policies will produce profits for companies.

Owing to this situation, this study focuses on the Japanese pharmaceutical industry and seeks to examine the effect of family-friendly and utilization measures for female employees on corporate performance.

This paper comprises the following sections. The second section explains the essence of this study by examining preceding studies. The third section presents specific estimated examination results and explains the data to be used for the analysis. The fourth section exhibits and analyzes the results obtained by examining the effect of family-friendly and utilization measures for female employees on corporate performance. The fifth section concludes the study.

2. Preceding Studies

Many studies and surveys on the working conditions of women have been conducted in various fields. Gender-based wage differentials and disparities in the employment conditions tend to be smaller in our country. However, the disparities still exist at a remarkable level as compared to those in other advanced countries, and have often been pointed out as major problems deeply rooted in Japanese society. To help resolve these problems, the Equal Employment Opportunity Law was enacted in 1985 in order to prohibit gender discrimination with regard to job recruitment, employment, personnel transfers, career promotion, vocational training, corporate welfare programs, retirement, and dismissal in conformity with family-friendly policies; however, many problems have yet to be solved. Mitani (1995) has demonstrated that gender disparities are smaller with respect to the relationship between employment period and wage standards, with companies conducting more gender-equal operations in employment management. Further, Mitani showed that gender wage gaps are smaller

¹ Refer to the glossary in the CRS Annual Report 2004.

cases when the employment period is the same. Additionally, Kawaguchi (2002) noted the synergism between gender equality and family-friendly measures, arguing that the promotion of gender equality increases the necessity of implementing family-friendly measures and initiatives that can further drive gender equality at the same time.

There exist many surveys and studies on the actual conditions of these family-friendly policies and utilization measures for female employees that have been conducted against the background of the trends related to gender equality. Japan is particularly characterized by an M-shaped curve that depicts a significant decrease in the rate of female employment during the child-care period. In this context, there have been many studies on the effect of the child-care leave system on continuous employment. Shigeno and Ōkusa (1998) pointed out that the child-care leave system does not affect marriages; instead, it is effective for facilitating continuous employment. Further, Morita and Kaneko (1998) revealed that the child-care leave system serves to encourage continuous employment. However, it is important to note that companies are less willing to introduce family-friendly measures unless these measures help generate profits. Furthermore, family-friendly policies have often been considered a “form of corporate welfare system to facilitate working women’s constant career development.”² In recent years, however, companies have been approaching these measures as part of substantial strategies for better human resource management amidst trends such as declining birthrate and a rapid increase in aging. Greenwald (1996) argues that although many corporate managers usually initiate family-friendly measures with the aim of improving employee amenities, such initiatives can definitely yield profits to their organizations in the long run. Further, Perry-Smith and Blum (2000) also note that family-friendly measures can have a positive impact on corporate performance from the perspective of competitive advantage.

More specifically, family-friendly measures are generally considered effective for boosting employee morale and improving working conditions. On the basis of the corporate survey data published by the Japan Productivity Center for Socio-Economic Development (JPC-SED) and the data on the employees of individual target companies involved in the survey, Sakazume (2002) demonstrated that family-friendly systems have a positive effect on boosting employees’ morale and improving their working conditions. However, unfortunately, her studies did not present detailed measuring items as in the case of analytical data. They merely employed limited indicators of corporate performance by focusing on the growth rates of a certain period before the survey.

In addition, people do not completely agree that family-friendly measures are effective in improving corporate performance. As a matter of fact, some people argue that family-friendly measures lead to higher labor costs, which imposes a heavier financial burden on companies. Shigeno (2005) pointed out that although family-friendly policies do not directly affect corporate performance, they lead to active utilization measures for female employees, which eventually has an indirect positive impact on corporate performance. On the basis of this analysis, she reasons that family-friendly policies do not generate high labor costs. However, her analytical data were based on

² This statement is based on the studies by Matsubara and Wakisaka (2005).

questionnaires involving respondents' subjective feelings rather than on accurate objective data on corporate performance. Additionally, she did not closely examine specific cases with respect to utilization measures for female employees and merely focused on subjective answers concerning the utilization of female employees.

Further, Kodama, Odaki, and Takahashi (2005) analyzed the correlations between utilization measures for female employees and improvement in business performance by using corporate micro data. Their research revealed positive correlations between the percentage of female employees and corporate profitability and that intrinsic corporate factors, including personnel and general administrative management measures, can boost business performance and eventually, the percentage of female employees. However, although the analytical data involved multiple sectors, it merely included approximately 300 companies, and thus, it is conceivable that particular factors affecting performances in different lines of business were not statistically controlled. In addition, they did not focus on any information about significant training programs for women as part of utilization measures for female employees.

Based on these preceding studies, this paper places particular focus on the Japanese pharmaceutical industry in order to control the distinctive attributes involved in multiple sectors to the greatest extent possible. This study also focuses on specific personnel management measures taken by companies in addition to the percentages of female employees and female managerial personnel in order to closely examine the effects of individual family-friendly policies and utilization measures for female employees. Furthermore, we consider particular training programs for female employees and promotion systems for managerial positions, and explores their relationships with corporate performance. Additionally, given the possibility that personnel measures will take several years to affect business performance, this study focuses on indicators concerning corporate performance at the time of the survey, two years after the survey, and five years after the survey as non-explanatory variables. This approach facilitates the valid analysis of the effect of special corporate measures on business performance at particular intervals.

3. Analysis

Before examining the effect of family-friendly policies and utilization measures for female employees on corporate performance, we would like to examine the hypotheses concerning these correlations and the likely examination results.

First, it is conceivable that companies implementing active utilization measures for female employees, such as special training programs for female employees or promotion systems for managerial positions, will gain better profits.³ In other words, the optimum utilization of competent

³ The 2003 Survey on Employment of Women and Business Performance at Enterprises conducted by the Japan Institute of Workers' Evolution (JIWE) focuses on the changes in the percentage of female managerial personnel as compared to with the figures five years before the survey and concludes that companies implementing active female utilization measures perform better.

female employees increases the productivity of all employees, which consequently enhances corporate performance. For example, if a company that usually recruits 80% male employees and 20% female employees increases its female employment percentage to 30%, it will be able to secure a pool of top 50% competent personnel, both male and female. In line with this reasoning, intensive efforts for the utilization of female employees will improve the productivity of all employees and eventually lead to better corporate performance.

Second, the generally accepted wisdom is that special commuting systems, such as flextime and staggered working hours,⁴ can raise productivity and boost corporate performance. Shepard, Clifton, and Kruse (1996) pointed out that enterprises with flexible commuting structures like the flextime system can increase their productivity by 10% as compared to companies without such systems. In contrast, some studies show that flexible commuting systems can produce longer overtime working hours than standard systems. Akira Wakisaka (2002), the Denki Rengo Research & Information Center, has proved this. Therefore, such special commuting systems could potentially reduce employee productivity and have a negative effect on corporate performance.

Third, major family-friendly measures, such as the nursing care leave system and the child-care leave system, may facilitate continuous female employment and the recruitment of competent female job seekers, which is likely to have a positive impact on corporate performance in the long run. At the same time, however, these systems impose a financial burden on companies and do not always contribute to business performance.

Chart 1 presents these hypotheses in a simple manner. On the basis of the abovementioned tentative observations, this study closely examines the effect of family-friendly policies and utilization measures for female employees on corporate performance with a focus on the data in the following section.

3-1. Data

This study focuses on the survey data on the member companies of the Osaka Pharmaceutical Manufacturers Association and the Pharmaceutical Manufacturers' Association of Tokyo. The survey was conducted in 1995 by the Employment Promotion Committee for the Pharmaceutical Industry. The study also employs the data on business performance specified in the "Corporate Quarterly Reports" of listed and unlisted companies in order to examine the effect of family-friendly policies and utilization measures for female employees on business performance.

More specifically, the analysis target comprises 500 member companies of the Osaka Pharmaceutical Manufacturers Association and the Pharmaceutical Manufacturers' Association of Tokyo. Of all the enterprises, the author obtained valid answers from 310 companies with a collection rate of 62%. The survey method was postal distribution of blank forms and postal collection of completed forms. The forms included questions about utilization measures for female employees, family-friendly initiatives, the percentage of female managerial personnel, and percentage of female

⁴ Refer to Asakura (2001) for details about these systems. However, note that there are only a limited number of statistical examination results on the effect of these systems on corporate performance.

employees.

The data on business performance is based on the sales of individual companies. The 1996 edition of the quarterly report lists corporate accounts as of March 1996 and shows the business performance in fiscal year 1995. With respect to the quarterly report of unlisted companies, the 1997 edition of the report lists corporate accounts as of March 1996 and shows the business performance in fiscal year 1995. By focusing on the 1996, 1998, and 2001 editions of the quarterly report and the unlisted companies' 1997, 1999, and 2002 editions of the report, the author can examine the business performance in fiscal year 1995 (when the survey was conducted), in fiscal year 1997 (two years after the survey), and in fiscal year 2000 (five years after the survey), respectively. Focusing on the values from 1997 to 2000 as explained variables using the time series method can make their comparison with explanatory variables clearer.

In addition, we also focus on the number of employees and capital specified in the report. The number of employees only includes full-time employees and excludes directors, temporary employees, and part-timers. The capital comprises outstanding stocks for listed companies and the paid-up capital or money invested for unlisted companies.

However, the survey target also includes many enterprises that are not listed in the quarterly report. More specifically, there were 111 such companies in 1996, 111 in 1998, and 102 in 2001.

3-2. Descriptive Statistics of Data

As a result of the similarity between the data specified in the quarterly reports and corporate survey data, the author found that information on 114 companies was available in any of the three target years. Questions on special corporate measures concerned the presence or absence of such systems themselves. The dummy variable of companies with such systems was 1 and that of companies without such systems was 0.

Based on the corporate survey data, the explanatory variables⁵ for data analysis include the percentage of female employees as an indicator of female utilization levels, percentage of female managerial personnel, promotion systems for managerial positions, particular training systems for female employees, reemployment structures, and career development programs through job rotation. The upper column of Chart 2 shows the average percentages of female managerial personnel and other female employees. The percentage of female managerial personnel is extremely low at 1.5%. This figure is remarkably low as compared with 8.9%, which was recorded in the "Labor Force Survey" by the Ministry of Internal Affairs and Communications (MIC) Statistics Bureau in 1996. In other words, female promotion to managerial positions is less active in the pharmaceutical industry than in other sectors. The rate of women to all employees was 25.8%.

Next, the middle column of the same chart specifies the descriptive statistics concerning utilization measures for female employees.

Examination revealed that 66% of the companies have promotion systems for managerial positions

⁵ Variables with a P-value of 0.6 or higher were excluded from the model.

and 18% conduct specific training programs for female employees. In addition, 14% of the companies employ reemployment systems and 12% conduct career development programs through job rotation.

In addition, the lower column of the same chart shows the descriptive statistics of explanatory variables concerning family–friendliness, such as the nursing care leave system, flextime system, no–overtime–work day system, irregular working–hour system, deemed working–hour system outside office, shift system, staggered working hours system, and paid vacation system for relaxation. We found that 99% of the companies have the child–care leave system and 45% have the nursing care leave system. The surveyed enterprises are at least described in the quarterly reports of unlisted companies in their company scale. However, given the fact that the data reflect the situation about ten years ago, the percentages can be considered high values. Furthermore, with regard to the irregular working–hour systems designed to facilitate the diversity and flexibility of employees’ work styles, 57% of the companies have introduced flextime; 32%, the staggered working hours system; and 25%, the irregular working–hours system. This suggests that many companies are keen about facilitating diverse and flexible working styles for their employees. In addition, 31% of the companies have employed the no–overtime–work day system and 58% have the paid vacation system for relaxation. In contrast, almost no companies have a workplace nursery, telecommuting system, or a home–caregiver–dispatching system.

Moreover, explanatory variables concerning basic corporate information include capital, labor unions, and capital composition (Japanese affiliates: 0, foreign–owned: 1).

4. Calculation Results and Prospect

We employed the regression analysis method to calculate the effect of family–friendly and utilization measures for female employees on corporate performance. The dependent variables were sales per employee at the time of the survey, two years after the survey, and five years after the survey. We referred to the quarterly reports for sales and the number of employees.

However, the child–care leave system was excluded from the explanatory variables because 99% of the companies had already employed the system. The author also excluded the workplace nursery (0%), telecommuting system (1%), and caregiver–dispatching system (2%) from the variables because they had extremely low percentages of implementation.

Chart 3 shows the calculation results based on controlled variables in consideration of the statistical levels of significance. The percentage of female employees was excluded from the explanatory variables because the P–value was not significant, i.e., it was 0.7 or higher. This implies that the percentage of female employees and sales per employee have no relation with each other, as pointed out by Kodama, Odaki, and Takahashi (2005).

With respect to the variables concerning utilization measures for female employees, particular training programs for female employees were positively significant; however, promotion systems for managerial positions scored a negative level of significance. In addition, career development programs through job rotation were excluded from the explanatory variables because the P–values of the item

were high in 1996 and 1998; however, the item indicated a positive tendency in 2001 even though it was not significant. This suggests that companies that aggressively utilize the female workforce by introducing particular training programs for women enjoy better performance in the long run. However, the reemployment system was excluded from the explanatory variables owing to its high P-value.

Further, unexpectedly, female promotion systems for managerial positions marked a negative coefficient. This may reflect the disparities between the systems themselves and their actual implementation. As a matter of fact, although 61% of the companies have this system, they have actually promoted only small percentages of female personnel to managerial posts. Companies with the female promotion system for managerial positions have scored only 2% on average with their actual percentage of female managerial personnel. In other words, it is conceivable that these companies are trying to facilitate female promotion to managerial positions in response to the actual low percentage of female managerial personnel. In fact, however, these companies may be facing a problem with regard to raising female promotion rates and thus show a poor performance.

With regard to variables concerning family-friendly measures, the deemed working-hour system outside office indicated a negative level of significance in 1996, 1998, and 2001. The staggered working hours system also marked a negative level of significance in 1998 and 2001, and the flextime system was negatively significant in 2001. This suggests that the irregular working-hour system may have a negative effect on corporate performance in consideration of more flexible work styles. This analysis is compatible with that of Akira Wakisaka at the Denki Rengo Research & Information Center (2002). Generally speaking, irregular working-hour systems are considered to be more favorable toward employees as part of the family-friendly policies. However, these systems tend to cause longer overtime working hours than ordinary schedules, which is likely to have a negative effect on female employment.

Although the nursing care leave system and the no-overtime-work day system were not statistically significant, their coefficients were positive.⁶ If the nursing care leave system and the child-care leave system caused greater costs to companies as a result of increased absence of workers, the sign of the nursing care leave system would have been negative. In line with this reasoning, the positive coefficients indicate that these systems at least do not have a negative effect on corporate performance. Rather, they work well as incentives for able employees to continue working without career breaks and could have a positive impact on performance. These systems can also be effective for recruiting better personnel, which eventually contributes to improving corporate performance. Additionally, shorter overtime working hours could help increase employee productivity and enhance the overall performance. With regard to variables concerning corporate information, capital indicated a positive level of significance and labor unions and foreign affiliates did not show a statistical level of significance.

⁶ The regression of the paid vacation system for relaxation to sales per employee has shown that the system is not statistically significant; however, it indicated a positive tendency. However, its regression to total sales has shown that the system is positively significant.

We also conducted a regression analysis by using total corporate sales and not sales per employee as a non-explanatory variable. The results shown in Chart 4 are almost the same as those in which sales per employee were set as an explained variable.

A notable aspect of these analyses is that active utilization measures for female employees as part of the family-friendly policies are particularly effective for improving corporate performance. In contrast, irregular working systems have a negative effect on business performance. In addition, the percentage of female employees does not significantly affect corporate performance.

5. Conclusion

This study examined the effect of family-friendly policies and utilization measures for female employees on corporate performance. It was predicated on the assumption that if family-friendly initiatives work well for companies as well as their employees, the measures will have a positive impact on business performance. The study conducted close analyses based on more detailed data on personnel management measures than existing studies through the similarity between corporate survey data published in 1995 by the Employment Promotion Committee for the Pharmaceutical Industry and the data specified in “Corporate Quarterly Reports.”

These examinations demonstrated the following four points. First, companies that aggressively implement utilization measures for female employees, including particular training programs, show better performance. Second, irregular working systems have an adverse effect on performance. Third, the nursing care leave system and the no-overtime-work day system can have a positive impact on corporate performance, although no significant result was obtained. Fourth, the percentage of female employees does not have any particular effect on corporate performance.

These comprehensive analytical results have demonstrated that merely recruiting many female employees is not effective for improving performance and that the active utilization of competent female employees is important. In addition, special working systems that are aimed at facilitating the creation of a harmonious balance between employees’ domestic life and job performance cause longer overtime working hours than ordinary systems and have an adverse effect on employee life balance, which could eventually reduce corporate productivity. Meanwhile, although the nursing care leave system and no-overtime-work day system are often said to impose a heavier financial burden on companies, such measures can work to prevent competent female employees from interrupting their careers in the long run and at least do not have a negative impact on corporate performance.

Of course, the examinations in this study were based on limited data and only focused on the pharmaceutical industry, and it is not valid to generalize the results to all industries. The process and mechanism of variables reflected in business performance should be clarified by future research. The analyses of this study are not sufficient to confirm whether or not the unclear effect of family-friendly measures on corporate performance is due to their total ineffectiveness. The examinations are not sufficiently effective to confirm whether or not there are any other factors involved that reduce the positive effect of family-friendly measures on business performance. Furthermore, although job

training programs may be effective for improving employee capability, at the same time, it is conceivable that many competent women aspire to work for companies with better working conditions. Additional studies and surveys are necessary to examine these processes more closely.

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Chart 1: Effect of Family–Friendly Measures on Corporate Performance

Measures	Effect
Female utilization measures	+
Irregular working hours system	+ or –
Family–friendly measures	+

Chart 2

Variables	Obs	%
Percentage of female managerial personnel	114	1.5
Percentage of female employees	114	25.8
Promotion to managerial positions	114	61
Particular training of female employees	114	18
Reemployment system	114	14
Career development through job rotation	114	12
Nursing care leave system	114	45
Child care leave system	114	99
Workplace nursery	114	0
Short–hour service or particular work day system	114	19
Telecommuting	114	1
Fixed work location system	114	32
Care–giver–dispatching system	114	2
Irregular working hours system	114	25
Deemed working–hour system outside the office	114	34
Discretionary work system	114	9
Flextime system	114	57
Shift system	114	49
Staggered working hours system	114	32
No–overtime–work day system	114	31
Special paid leave system for the relaxation of employees with long time service	114	58

Chart 3: Personnel Management Measures and Sales Per Employee

		1996		1998		2001	
		Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Corporate information	Capital	0.091	0.01	0.127	0.00	0.124	0.00
	Labor union	-0.188	0.17	-0.170	0.26	-0.188	0.24
	Foreign affiliate			0.181	0.31	0.172	0.40
Female utilization measures	Percentage of female managerial personnel					-2.943	0.34
	Promotion to managerial positions	-0.204	0.06	-0.184	0.12	-0.288	0.04
	Particular training of female employees	0.351	0.02	0.288	0.07	0.350	0.03
	Career development through job rotation					0.270	0.20
Family-friendly measures	Nursing care leave system	0.117	0.32	0.084	0.51	0.182	0.19
	Flextime system	-0.092	0.45	-0.138	0.28	-0.310	0.03
	No-overtime-work day system	0.117	0.34	0.085	0.51		
	Irregular working hours system	-0.235	0.52			-0.078	0.58
	Imputed working-hour system outside the office	-0.234	0.04	-0.277	0.02	-0.354	0.01
	Shift system			0.109	0.37	0.098	0.45
	Staggered working hours system	-0.140	0.21	-0.209	0.09	-0.261	0.05
	Paid vacation system for relaxation	0.132	0.28	0.181	0.31	0.232	0.11

Chart 4: Personnel Management Measures and Sales

		1996		1998		2001	
		Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Corporate information	Capital	0.112	0.01	0.150	0.00	0.128	0.00
	Number of employees	0.922	0.00	0.860	0.00	1.000	0.00
	Labor union	-0.165	0.26	-0.153	0.33	-0.189	0.25
	Foreign affiliate	0.130	0.43	0.219	0.22	0.190	0.36
Female utilization measures	Percentage of female managerial personnel			-3.977	0.20	-3.026	0.33
	Promotion to managerial positions	-0.200	0.07	-0.082	0.55	-0.284	0.05
	Particular training of female employees	0.364	0.02	0.384	0.02	0.344	0.04
	Reemployment system			0.176	0.32		
	Career development through job rotation			0.165	0.41	0.238	0.24
Family-friendly measures	Nursing care leave system	0.138	0.25	0.146	0.26	0.185	0.19
	Flextime system	-0.085	0.49	-0.204	0.12	-0.316	0.03
	No-overtime-work day system	0.092	0.46				
	Irregular working hours system						
	Deemed working-hour system outside the office	-0.245	0.03	-0.272	0.03	-0.370	0.01
	Shift system	0.123	0.32	0.200	0.13	0.088	0.52
	Staggered working hours system	-0.155	0.18	-0.251	0.05	-0.266	0.05
	Paid vacation system for relaxation	0.147	0.23	0.149	0.28	0.244	0.09