Fact Findings on the Synergy Effect between Diversity Management and Japanese Corporate Profitability

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Abstract

The increasing labor shortages in Japan and the country’s need to enhance its international competitiveness, necessitate an increase in the participation of diverse human resources, including women, in the labor force. Therefore, this study examines three research issues: the interaction between diversity management and corporate performance, the qualitative and quantitative effects of the promotion of diversity, and the negative effects of promoting diversity on corporate performance. The study aims to confirm the bidirectional effects between diversity and corporate performance, and identify the possibilities resulting from these interactions. Using Toyo Keizai’s CSR database from FY 2010 to FY 2017, we conduct ordinary least squares estimations and confirm that regardless of job rank, diversity encourages good corporate performance, particularly in companies that face a labor shortage or operate in industries where diversity is low. Furthermore, the effects of a high return on assets (ROA) are stronger in companies with a lower duration of overtime, and those with a high take-up rate of paid leave. Our findings have implications for policy change, and provide suggestions to improve the quality of management.

Keywords: Diversity management, Corporate performance, Promoting diversity, Ratio of female employees

1. Introduction

This section explains social background of this study to manifest usefulness and timeliness of this study. Diversity management of human resources, a strategic process that Japanese companies have been promoting recently, in part due to policy incentives, is expected to bring about two outcomes, referred to in this study as the “quantitative effect” and “qualitative effect.” Firstly, with regard to the quantitative effect, the combination of low birth rate and aging is causing a definite and rapid shrinkage in the labor force. Therefore, encouraging diverse human resources, including Japanese women, whose labor force participation rate is the lowest among OECD member countries, to participate in the labor market is the only solution to achieve sustainable economic growth. Although Japan’s female labor force participation rate has improved recently, in part due to policy incentives, it remains lower than the international standard. Secondly, with reference to the qualitative effect, the international competitiveness of Japanese companies is clearly declining due to emerging economies such as China catching up rapidly. Therefore, Japanese companies need to achieve greater value addition through fundamental technological innovation and new business developments. The positive interaction between diverse new human resources and existing employees, many of whom are Japanese men, is expected to improve corporate performance and enable sustainable economic growth in Japan.

However, the promotion of diversity is influenced by several factors. The extent to which diversity is promoted varies vastly depending on the industry and the company. Thus, success of the promotion of diversity is not easy to achieve, even with clear policy and management support. As most recent related studies, positive or negative effects by diversity management on corporate performance are verified within limited sector by [1][2][3][4][5] and [6]. Especially, increasing labor shortages in Japan make it difficult to realize the diversity of sources of excellent labor force and imposes conditions on good corporate performance through diversity management. The findings of these conditions in Japanese companies are one of main purposes and uniqueness of this study.

Therefore, this study proposes that it is impossible to assign which is the cause and which is the effect between diversity management and corporate performance, and that there is the interaction between the two. Furthermore, the study attempts to verify this interaction in the period following the collapse of Lehman Brothers until very recently, when the economy has been relatively stable. Based on this, the study aims to provide suggestions that could be beneficial for management.

This study focuses on gender diversity. Diversity encompasses various aspects including nationality (ethnicity), disability, job tenure, background, and the form of employment; however, adequate data pertaining only to “women” and “nationality” have been procured and quantitatively analyzed in a meaningful manner. Furthermore, the studies on the effect of the promotion of diversity with reference to nationality have been
inconclusive, because conventionally, studies have been based on broad classifications such as nationality or white/black, and there is a need for detailed classifications such as African/British. While this study acknowledges the importance of the diversity of nationality/ethnicity in practice and as a subject of academic research, since detailed data are difficult to procure, the diversity of nationality/ethnicity has been set as a future research agenda. As another stream of studies on diversity management, [7] pioneered many studies on the diversity within a management board. However, this is deemed inadequate in the context of the current study, which aims to examine the interaction between diversity management and corporate performance measured in terms of profitability, across job grades, including employees below the level of department head. This is based on the assumption that while the promotion of diversity within a management board is relatively easy to achieve through internal means, the promotion of diversity at lower grades requires the recruitment of external human resources, and since it is influenced by factors such as performance, it is not easy to achieve.

Based on recent panel data of listed companies in Japan since the 2000s, [8] states that performance may be enhanced in companies where the following conditions are met: An increase in the proportion of women in regular employment to 30–40 percent; an increase in the proportion of women in their thirties, in regular employment; and multiple policies to promote work-life balance. Furthermore, saving on personnel cost has been identified as a contributing factor, a tendency that was also observed in the manufacturing industry by [9]. A more detailed analysis by [10] has concluded that the proportion of a company’s employees who are female university graduates is correlated with its profitability if the company has over 300 workers in regular employment, promotes work-life balance, and has a higher proportion of women in middle management. This suggests that the promotion of diversity contributes to profitability only under limited and diverse conditions.

Previous studies focused on examining the effects of diversity on corporate performance. However, no study has been conducted to examine the challenges in promoting diversity or in the employment of capable female workers, to the authors’ knowledge, at least in Japan. Consequently, one of the aims of this study is to confirm the bidirectional effects between diversity and corporate performance, and identify the possibilities resulting from these interactions. This is based on the understanding that the promotion of diversity and its contribution to corporate performance are difficult to achieve in the labor market of Japan, and therefore, certain conditions are necessary. More specifically, this study investigates the possibilities of positive interaction between the promotion of diversity and the improvement of corporate performance. When such interaction takes place, it can be said that the promotion of diversity is not a temporary phenomenon, but a management policy that contributes to the company’s sustainability and the enhancement of corporate value.

In addition to confirming the contribution of diversity to corporate performance, this study further aims to identify whether this is a quantitative effect or qualitative effect. This is because determining whether diversity among newly recruited personnel is important leads to a more precise evaluation of diversity management.

Furthermore, this study stems in response to cynicism over the validity of recent policies that promote diversity management uniformly. Discussing a case in which uniform, policy-driven promotion led to undesirable outcomes, [11] has compared companies that were affected by the gender quota with those that were not, to conclude that the mandatory introduction of a gender quota does not necessarily contribute to an increase in a company’s revenue or value, and that it is important to remove the obstacles carefully so that the proportion of female executives may increase. Therefore, an attempt has been made in the current study to examine historical data for facts suggesting the possibility of negative effects of diversity on profitability.

2. Research Methods

2.1 Data and the Analysis Procedures

Firstly, this study investigates the bidirectional causal relationship between diversity management and corporate financial performance. Thereafter, it examines this causal relationship in view of historical data. The following data have been used:

- Analysis period: FY (Fiscal Year) 2010 to FY 2017, the period following the collapse of Lehman Brothers until very recently
- Diversity scale: Toyo Keizai’s CSR database from the end of FY 2010 to the end of FY 2017 has been used, and the following variables have been set: Three variables linked to the proportion of women among all employees, middle management, and executives above the level of department head; five variables linked to the company size and work environment: Absolute diversity level, the number of employees, staff turnover rate, monthly average of overtime, and the take-up rate of paid leave. Absolute diversity level is percentage of women in each job rank.
- The companies’ profitability scale: The ROA data from FY 2010 to FY 2017 has been sourced from Financial Business among newly recruited personnel is important leads to a more precise evaluation of diversity management.

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The effects of promotion of diversity on corporate performance are not necessarily reflected within a year. In order to take the speed of adjustment into account, as shown below, the model included a lag item as an explanatory variable. If the target ROA was ROA*, the actual ROA was ROA\(_t\), and the adjustment speed was \(\delta\), then:
\[
\text{ROA}_t - \text{ROA}_{t-1} = \delta (\text{ROA}^*_{t-1} - \text{ROA}_{t-1}) = -\delta \text{ROA}_{t-1} + \delta \text{ROA}^* \\
\]
(1)
ROA* is unknown, but can be assumed to be determined by other variables, we needed to test the following:
\[
\text{ROA}_t - \text{ROA}_{t-1} = \alpha - \delta \text{ROA}_{t-1} + (\text{diversity standard during FYt}) + \text{variables expressing the work environment at the end of FYt}. \\
(2)
\]
This expression depicts the idea of models in this study. The effects of corporate performance on diversity have been examined similarly. In this study, these effects have been calculated using the OLS (Ordinary Least Squares) model. In this case, with an infinite size of sample, obtaining estimates of the adjustment speed \(\delta\) would have been extremely time-consuming. Alternatively, applying System GMM ([12] and [13]), unbiased estimates for adjustment speed and other explanatory variables ([14]) could be obtained. However, this has been set as a future research agenda.

### 2.2 Effects of Corporate Performance on Diversity

Using the following equation, OLS estimations were derived to determine the proportion of women by job rank (categorized into employees, middle management, and executives above the level of department head):
\[
\Delta \text{ROA}_{t+1} = b_0 + b_1 \text{ROA}_t + b_2 \Delta \text{DIV}_t + b_3 \Delta \text{EMP}_t + b_4 \Delta \text{RES}_t + b_5 \Delta \text{AOW}_t + b_6 \Delta \text{PVC}_t + (b_7 \Delta \text{DIV}_t + b_8 \Delta \text{EMP}_t + b_9 \Delta \text{RES}_t + b_{10} \Delta \text{AOW}_t + b_{11} \Delta \text{PVC}_t) \times \text{R}_t \\
(3)
\]

\(t = \text{from FY 2010 to FY 2016}\)

“\(\text{R}_t\)” indicates that the variable has been adjusted by the industry average in the corresponding fiscal year. \(\Delta \text{DIV}_t\) represents the change in diversity from FYt to FY\(_{t+1}\). By including \(\text{R}_t\), which represents the diversity level in the previous fiscal year, as a lag item on the right side, we investigated the effects of the delay in change in \(\Delta \text{DIV}_t\). Here, \(\alpha\) represents the adjustment speed. \(\text{R}_t\) represents the ROA for FYt. As the main explanatory variable in this model, \(\text{R}_t\) indicates whether the corporate performance was good. Other adjustment variables that have been assumed to affect diversity include \(\text{DIV}_t\), which represents the absolute diversity level in FYt; \(\text{EMP}_t\) and \(\text{EMP}_t\), the number of employees in FYt; both of which adjust the factors that affect an individual company’s characteristics, except the industry. They also include items that adjust the insufficiency of labor supply: \(\text{RES}_t\), representing staff turnover rates in FYt; \(\text{AOW}_t\), representing the average duration of overtime; and \(\text{PVC}_t\), representing the take-up rate of paid leave. Furthermore, the crossover effect was examined by the cross items between the explanatory variable and adjustment variables.

### 2.3 Effects of Diversity on Corporate Performance

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(4)
\]

\(\Delta \text{ROA}_{t+1}\) represents the change in diversity from FYt to FY\(_{t+1}\) (as previously, “\(\text{R}\)” indicates that the variable has been adjusted by the industry average in the corresponding fiscal year). By including \(\text{R}_t\), which represents the diversity standard in the previous fiscal year, as a lag item on the right side, we investigate the effects of the delay in the change in \(\Delta \text{ROA}_{t+1}\). Here, \(b_1\) denotes the adjustment speed. The main explanatory variable in the model, \(\text{R}_t\), represents the diversity standard adjusted for the business time in FYt. As in the model in the previous section, the adjustment variables that were expected to reflect the effects of a change in diversity on the ROA have been identified. \(\text{DIV}_t\) and \(\text{EMP}_t\) represent the company’s characteristics; \(\text{RES}_t\), \(\text{AOW}_t\), and \(\text{PVC}_t\) adjust the insufficiency of labor supply with regard to staff turnover rates in FYt adjusted for the business time, the average duration of overtime, and the take-up rate of paid leave, respectively. Furthermore, the crossover effect was examined by the cross items between the explanatory variable and adjustment variables. The significance of coefficient \(b_2\) indicates the direct effects of diversity on corporate performance (qualitative effect), adjusted for the insufficiency of labor supply, while the significance of coefficients \(b_3, b_4, b_5, b_6, b_7, b_8, b_9, b_{10}, b_{11}\), and \(b_{12}\) of the cross items indicates the effects of insufficiency of labor supply on corporate performance (quantitative effect).

Variables used by models above are similar to those by [1][2][3][4][5] and [6] as most recent related studies. However, some variables are adjusted by the industry average in the corresponding fiscal year in order to adjust both industry effect and effect by economic situation in each fiscal year. Most importantly, examination on the crossover effect and bidirectional causal relationship between management and performance can be asserted as originality of this study.

### 3. Results

Tables 1 and 2 display the results pertaining to Section 2.2 and Section 2.3, respectively. This is followed by an enumeration of the confirmed facts.

Table 1. Effects of Corporate Performance on Diversity

| (Coefficient) | 
|----------------|
| \(...\)|
The results reveal that regardless of job rank, good corporate performance encouraged diversity, and the effect was observed to be stronger in higher job grades. Furthermore, it was found that regardless of job rank, the historical level of diversity promoted diversity in the future. However, the effect of a high ROA leading to the promotion of diversity was seen to be stronger in industries where the level of diversity was low. With regard to the proportion of female employees, the effects of a high ROA were particularly strong in companies with a long duration of overtime, and those with a low take-up rate of paid leave. In other words, when good performance coincided with labor shortage, the proportion of female employees increased.

### 4. Discussion and Conclusions

In summary, this paper has examined three research issues: the interaction between diversity management and corporate performance, the qualitative and quantitative effects of the promotion of diversity, and the negative effects of the promotion of diversity on corporate performance. The key findings are discussed below in order to provide suggestions to managers.

Addressing the first research issue of the interaction between diversity management and corporate performance, an increase in the ratio of female employees to all employees, compared to the industry average, leads to an improvement in the ROA.

Increasing the proportion of women in middle management, compared to the industry average, has an effect of improving the ROA, particularly in companies with relatively fewer employees.

With regard to the proportion of female executives above the level of department head, the interaction is similar to that of the proportion of women in middle management, except that in this case, diversity contributes to profit only if the company is small.

The low take-up rate of paid leave and long duration of overtime have been identified as factors that can prevent

### Table 2. Effects of Diversity on Corporate Performance (Coefficient)

| Variables | All employees | Middle management and above | Executives above the level of department head |
|-----------|--------------|-----------------------------|--------------------------------------------|
| \( b_0 \) | -0.128       | -0.150                      | -0.188                                     |
| R_ROA \( t \) | -0.154***   | -0.155***                   | -0.153***                                  |
| \( \times 2 \) | 2.508*      | 0.040*                      | 0.007                                      |
| \( \times 3 \) | 0.218       | 0.026*                      | 0.041                                      |
| \( \times 4 \) | 0.000       | 0.000                       | 0.000*                                     |

\( *, **, ***: \) Significant at the 10, 5, and 1 percent levels, respectively

A comparison between \( b_1 \) and \( b_2 \) has revealed that the adjustment speed was lesser in diversity than in corporate performance. The lower the job rank, the stronger was the effect of promotion of diversity on improvement in corporate performance. A positive qualitative effect has been confirmed with regard to the proportion of women among all employees and in middle management. In contrast, the significant results with regard to the cross items have not indicated that the promotion of diversity enhanced profit by solving the problem of labor shortage i.e., the quantitative effect. The shorter the duration of overtime, the greater was the improvement in corporate performance, leading to a negative quantitative effect. Additionally, with regard to the proportion of women in middle management and among executives above the level of department head, it has been found that the fewer the employees, the stronger was the effect of the promotion of diversity on the improvement of corporate performance.
the emergence of a positive interaction between the promotion of diversity and corporate performance. Therefore, it has been concluded that the implementation of policies that reduce work hours is an effective measure to make the promotion of diversity sustainable.

With regard to the second research issue of qualitative and quantitative effects of the promotion of diversity, it has been observed that the lower the job grade, the stronger is the positive qualitative effect; gender difference has also been found to have an effect on the improvement of corporate performance. By contrast, regardless of job rank, companies with a long duration of overtime have revealed a negative quantitative effect, suggesting that in these companies, the promotion of diversity cannot solve the problem of labor shortage. With regard to the third research issue, it has been concluded that the promotion of diversity can produce a negative effect on profit, thus revealing the quantitative effect of the promotion of diversity, across job ranks. In other words, the promotion of diversity without a reduction in the duration of overtime has a negative effect on profitability.

A low level of diversity in Japan posed a limitation in this study. The absolute diversity level in Japanese companies remains low in comparison to international levels, which have risen in more instances than declined. When diversity increases in multiple industries in the future, it would enable a more objective study of whether diversity enhances profitability while testing both the positive and negative effects of the promotion of diversity. One method to achieve this is by re-examining the analyses in this study by applying the concept of entropy as a diversity measure. As another limitation, the findings of this study should be interpreted carefully to derive practical implication.

Some other feasible ideas to develop this study further include investigating the factors that inhibit the promotion of diversity in industries with a low diversity level. This would enable the identification of the limits to the interaction between the promotion of diversity and corporate performance, and a more objective re-examination of the findings of this study. Some ideas on how to extend the analysis include analyzing a longer period; using productivity concepts such as profit on sales per capita, and a profitability indicator based on profit on sales; and examining the risks and effects on B value or effects on capital cost, rather than on productivity. Moreover, the inclusion of qualitative information regarding the work environment such as policies for work-life balance, reskilling and career enhancement, and the number of registered patents, is expected to result in stronger implications for management.

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