Influences of Diversity on Organizational Performance. ~By Using Faultline Theory~

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Abstract. The diversification of employment and work styles in organizations is inevitable to ensure a stable workforce in Japan, where a labor force is shrinking due to a declining birthrate and an aging population. Using the concept of "faultlines", which are hypothetical dividing lines that may split a group into subgroups of people based on their multiple attributes and assess diversity quantitatively, this paper examines the relationship of influences of a structure of diversity (the faultline strength and the number of subgroups) and a method of communication within an organization. It is verified by an agent-based model based on a survey of Japanese organizations. In addition, this paper demonstrates the methods of communication to enable diversification to generate a positive impact on a performance of an organization. As a result, this paper clarified that appropriate communication is related to a goal and the structure of diversity of an organization. Therefore, it is necessary for a manager to grasp a structure of diversity of an organization and to design a method of interaction along with a goal in an organization.

Keywords: Diversity · Faultline · Agent-based model

1 Introduction

It is important to ensure a stable workforce in Japan where a labor force is shrinking due to a declining birthrate and an aging population. Therefore, the acceptance of foreign workers and work style reforms are in progress. In addition, technological advancement including artificial intelligence and the Internet of Things also diversifies workers and work styles.

In the study field of diversity management, it is said that diversity can affect an organizational performance in both a positive and negative manner. Therefore, it is important to clarify the factors that diversity positively affects in Japan where it advances.

Focusing on the concept of faultlines that capture diversity quantitatively, the main objective of this paper is to clarify one of the solutions concerning how to manage a diversified organization in order to enhance the organizational performance.

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2 Previous Studies

2.1 The Field of Diversity Management

Williams and O'Reilly [8] proposed the integrated model on how diversity could affect organizational performance, explaining that diversity could have both positive and negative effects; therefore, organizational diversity is referred to as a "double-edged sword."

The negative theory

- Social Categorization Theory: People categorize themselves and others with regard to demographic attributes such as age, gender, and so on. They may have conflict in their communication and relationships.
- Similarity-attraction Theory: Individuals that are highly similar feel attractiveness each other and strengthen their solidarity, while causing conflict with those who are less similar.

The positive theory

- Information and Decision-making Theory: Diversity increases knowledge and information types, providing an organization with positive effects.

The integrated model explains that the one of points that divide positive or negative influences is whether or not communicate is smooth.

2.2 Faultline Theory

Lau and Murnighan [2] proposed the concept of faultlines which are hypothetical dividing lines that split a group into subgroups based on one or more individual attributes in order to explain the causality between diversity based on attributes of organizational members and conflict within an organization. Many previous studies on faultlines have reported that faultlines increase conflict. An exceptional study was claimed that common identities (e.g., goals) or mediators could reduce conflict. As for studies focusing on subgroups, Polzer et al. [4] reported that an uneven group size could achieve high performance, and Carton and Cummings [10] conducted a field survey reporting that three or more subgroups could achieve high performance.

2.3 Conflict

A conflict has possibility that makes not only negative influence but also positive influence. Robbins [5] has shown that conflict has resulted in positive influence in the cases where it contributes to the quality of decision-making or increases the creativity of the staff. In addition, a common feature in organizations that successfully create functional conflict is that they reward dissent and punish conflict avoid.

2.4 Review of Previous Studies

Only a limited number of previous studies have been made of the faultline theory focusing on organizations in Japan. This paper carries out a survey of Japanese organizations about attributes and communication and quantifies diversity by using the faultline theory. An agent-based model (ABM) is used to examine the relationship of the diversity and communication. Many previous studies regarding the faultline theory have focused on the disfunctional conflict that negatively affects an organization. In this study, however, we employed the functional conflict leveraged by diversity into our simulation in addition to the disfunctional conflict. Through this simulation, we verified diversity from both faces, positive and negative effects.

We decided to utilize ABM because it is appropriate for verifying influence which is generated by people's actions toward the entire organization. Takahashi et al. [9] reported the relationship between diversity and organization performance using NK model and ABM. This previous research showed that an organization needed to have a certain amount of diverse members to improve the whole organizational utility under the changing environment. It also clarified the necessity of organizational diversity from the external social environment. On the other hand, this paper employs a new approach from an internal change in an organization using Faultline Theory which can show a structure of diversity.

2.5 The Faultline Measures

The previous studies proposed more than ten faultline measurement methods. Suzuki, Matsumoto, and Kitai [7] said that the rating scale for cluster analysis proposed by Meyer and Glenz [3], Average of Silhouette Width (ASW), has various advantages. For example, this rating scale can handle continuous variables as well as categorical variables and can divide target organizations into proper subgroups.

ASW is a rating scale for evaluating the cluster analysis results, which was proposed by Rousseeuw [6]. The following items are defined in Fig. 1:

- *a(i)*: average dissimilarity of *i* to all other objects of A.
- *d(i, C)*: average dissimilarity of *i* to all other objects of C.

Where the smallest value of *d(i, C)* for all the clusters other than A is calculated as *b (i)* according to the above definitions, cluster B becomes adjacent to A. Equation (1) expresses the adequacy of sample *i* to belong to cluster A.

$$s(i) = \frac{b(i) - a(i)}{max\{a(i), b(i)\}} \tag{1}$$

Meyer and Glenz [3] defined this overall mean edge width, $\bar{s}$, as the faultline value. Where the mean edge width is $\bar{s}(k)$ when there are k clusters, k that maximums $\bar{s}(k)$ is selected. The clusters here become subgroups, while k is the number of subgroups.

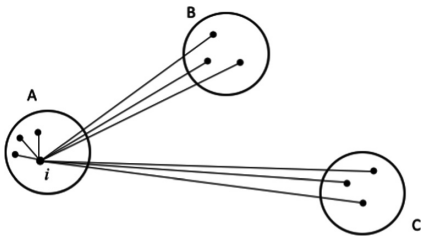


Fig. 1. Relationships of elements involved in the computation of *s(i),* where the object *i* belongs to cluster A [6].

3 Model Outline

This model uses agents to resemble organizational members in order to update evaluation values based on the synergy influence generated by interactions of agents. While comparing the evaluation values for the entire organization (sum of evaluations of all agents) before and after agent interactions, this model verifies increases and decreases of this evaluation value.

3.1 Agent Attributes

Each agent has an array, consisting of 0 and 1, with six genes set. This gene array is regarded as the decision-making attitude attribute. Interactions between agents affect each agent's decision-making attitude attribute, updating the evaluation value. The decision-making attributes apply the multi-attribute attitude model in the consumer behavior theory. The multi-attribute attitude model is the concept that when the consumer evaluates the product, not only one attribute but a plurality of attributes becomes the focus and the total of the evaluations to each attribute is a comprehensive evaluation of the product. By replacing products with organizational issues on this concept, the characteristics of the approach to issues are represented by multiple attributes and the sum of the evaluation values of attributes is regarded as the comprehensive evaluation for solving the problem.

In addition, the initial array of six-gene arrays set for each agent is calculated by ASW in order to determine the faultline strength of organizations and the subgroup to which each agent belongs. Here it is assumed that the initial decision-making attitude attribute would be dependent on superficial attributes such as age and gender since the decision-making attitude attribute is free from external influence.

Initial six-gene arrays as the decision-making attitude attributes $\approx$

Demographic attributes.

A subgroup that is set based on the initial six-gene arrays can be regarded as an internal group in Social Categorization Theory which is the basis of the faultline theory. While the subgroups to which the agents belong never change during the simulation period, interactions of agents affect six-gene arrays, and the decision-making attitude attributes change. As a result, the model verifies which interaction is able to enhance the evaluation value of the entire organization.

3.2 The Utility Function

The NK model is used as the evaluation function for the decision-making attitude attributes (six-gene arrays) held by each agent. The NK model is a genetic algorithm that indicates the process by which a living organism evolves, which is utilized in various fields including technological advancement and organizational learning.

The evaluation value of the NK model is called the "fitness." The NK model is based on N genes, having 0 or 1 for their values, that are related to K genes. Figure 2 shows a specific example of N = 6, K = 2, where the evaluation value is expressed as Eq. (2).

$$W = \frac{1}{N}\sum_{i=1}^{N} w_i \tag{2}$$

※ w_i: Fitness in the fitness function of each loci.

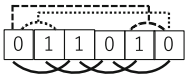


Fig. 2. Structure of NK landscape (N = 6, K = 2)

Figure 2 shows the case of K = 2. Therefore, one evaluation value is calculated with a succession of the agent's genes and the other two genes. These are six sets of the following genes from the left: (001), (011), (110), (101), (010), and (100) (four sets in the bold line and two sets in the dashed line). The following shows the calculation result of applying the example of adequacy arrays in Table 1 based on these six sets.

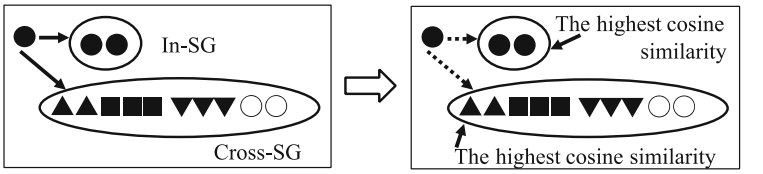
{001(0.592) + 011(0.589) + 110(0.842) + 101(0.233) + 010(0.653) + 100 (0.793)}/6 = 0.617.

Table 1. Example of fitness function (Cited from [1])

The genes	000	001	010	011	100	101	110	111
Fitness	0.141	0.592	0.653	0.589	0.793	0.233	0.842	0.916

3.3 Simulation Setting

One organization consists of 18 agents. The default six-gene array for each agent is calculated based on ASW in order to determine the faultline strength, the number of subgroups and the subgroup to which each agent belongs. Then we conducted the simulation in order to clarify whom each agent interacts with to enhance the evaluation for the entire organization. We set the following three methods by the conflict type. One simulation consists of 100 interactions, while the simulation is conducted 100 times according to each setting. Table 2 lists the simulation settings.



① Select In or Cross - SG according to the rate of In-SG
*The rate of In-SG is set from 0 to 100% by each 10%.

② Select agent with the highest cosine similarity of six-gene arrays

Fig. 3. Similarity interaction

– Similarity interaction

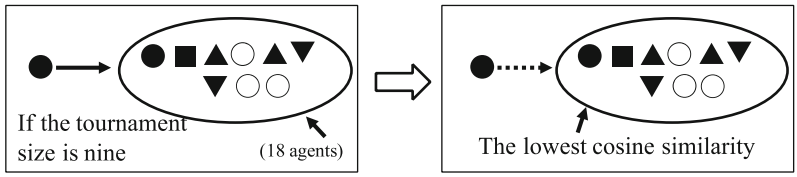
The similarity interaction that reproduces Social Categorization Theory or Similarity–attraction Theory sets the percentage of agent interactions within the same subgroup (In-SG) and agent interactions in different subgroups (Cross-SG). In-SG is similar to the communication in an internal group with similar people, therefore, the percentage of In-SG is defined as the conflict size.

Figure 3 shows that the first step for determining whom to interact with is to narrow down agents to interact with according to the percentage of In-SG and Cross-SG. The second step is to select the agent with the highest cosine similarity of the six-gene arrays. In real society, this represents communication between similar people where diversity works negatively. In this state, the disfunctional conflict occurs.

– Diversity interaction

This interaction is based on Information and Decision-making theory. Here, agents with a lower cosign similarity of the six-gene arrays are selected. The counterparties to these agents are randomly selected according to the tournament size, regardless of whether they are in the same or a different subgroup, interacting with those with low similarity. In real society, this is the interaction between people with different attributes and increases the quality and the quantity of knowledge or information in an organization, while diversity works positively. In this state, the functional conflict occurs.

The tournament size indicates the number of agents that are randomly selected. Where the tournament size is four, four agents are randomly selected and interact with agents having low similarity. As the tournament size increases, the selection pressure becomes higher. This makes it easier to select agents with low similarity. Based on this feature, the tournament size is regarded as functional conflict size. When the tournament size becomes greater, the functional conflict also becomes larger while bringing about a positive influence on the organization. This simulation adopts three sizes, 2 for the minimum selection pressure, 17 for the maximum selection pressure, and 9 for the medium selection pressure (Fig. 4).



① Select the number of agents in 18 agents according to the tournament size

② Select agent with the lowest Cosine similarity of six-gene arrays

Fig. 4. Diversity interaction

– Random interaction

In this interaction, 18 randomly select whom to interact regardless of whether they are in the same or a different subgroup. Here the agents interact with everybody freely and equally; there is no conflict. This state is assumed as the organization's potential capacity. Table 2 lists the simulation settings.

Table 2. Simulation settings

The number of agents		18
The NK model	The length of N	6
	The number of K	1
How to exchange		Single point crossover
The fitness function		(0, 1) uniform random number
The number of interactions per simulation		100
The number of simulations per setting		100

4 Simulation

4.1 Data Sets for Validation

In order to validate the model, we created six sets of validation data based on the faultline strength and the number of subgroups (Fig. 5). We used these to conduct simulations.

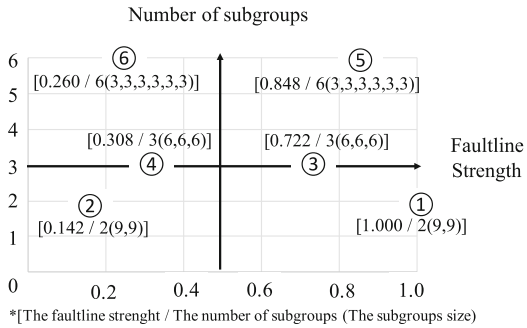


Fig. 5. Set data for the validation

4.2 Evaluation Standard

The difference in fitness of the entire organization before and after 100 interactions served as the evaluation value. Besides two evaluation standards are setting. First, it is the maximum value of 100 simulations (except outliers) as Maximum possibility. Next, it is essential for an organization to achieve stable results for every issue. For this reason, the standard deviation from 100 simulations is set as the second standard. When the standard deviation is higher, there is a lower possibility to get the maximum value. The standard deviation means Occurrence probability (Fig. 6).

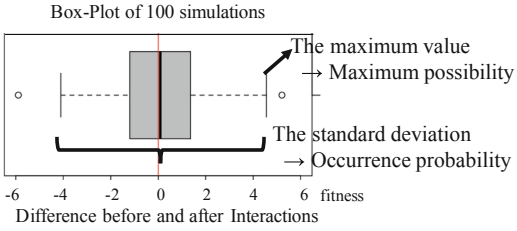


Fig. 6. Evaluation standard

Through these simulations, this paper observed how Maximum possibility and Occurrence probability change through the structure of diversity, such as the faultline strength and the number of subgroups, and interaction methods. By doing so, this paper validated the relationship between organizational diversity and performance.

Note that the values, out of those 1.5 times the interquartile range (difference between the third quartile and the first quartile) of the 100-simulation results, are considered to be outliers.

4.3 The Results of the Simulation for the Verification

Table 3 shows the correlation coefficient between the setting data, which are the faultline strength, the number of subgroups, the rate of In-SG and the tournament size,

Table 3. Correlation coefficient per the methods of interaction.

	Correlation coefficient							
	Similarity			Diversity			Random	
	FL	SG	Rate	FL	SG	Size	FL	SG
The maximum value	0.671***	−0.319**	−0.260*	0.449	−0.005	−0.183	0.762	0.010
The standard deviation	0.675***	−0.344**	−0.255 *	0.512*	−0.262	−0.488*	0.727	−0.166

*p < .05, **p < .01, ***p < .001
※FL: Faultline Strength ※SG: Number of Subgroups ※Rate: Rate of In-SG
※Size: Tournament size.

and the evaluation standard, which are the maximum value and the standard deviation from 100 simulations.

– Similarity interaction

In this interaction method where the disfunctional conflict occurred, the faultline strength and the maximum value, as well as the standard deviation, were in a positive correlation. This result confirmed that as the faultline strength become stronger, Maximum possibility becomes higher, but Occurrence probability is decreased. The number of subgroups and the rate of In-SG worked inversely from how the faultline strength worked. Therefore, the regression analysis on the maximum value and the standard deviation as objective variables were conducted (Eqs. (3) and (4)).

Max: The maximum value
SD: The standard deviation
S: The faultline strength
N: The number of subgroups
R: The rate of In-SG

$$\text{Max} = 1.79 + 2.8\text{S} - 0.25\text{N} - 1.19\text{R} \tag{3}$$

*Coefficient of determination = 0.594, p = 8.653e-13

$$\text{SD} = 0.73 + 1.07\text{S} - 0.10\text{N} - 0.41\text{R} \tag{4}$$

*Coefficient of determination = 0.618, p = 1.348e-13

To improve Maximum possibility, the rate of In-SG is low in an organization where the faultline strength is strong and the number of subgroups is small. However, in this case, Occurrence probability is also low. In general, if the number of subgroups decreases, the rate of In-SG tends to be high. Considering this point with reference to Fig. 7, Maximum possibility is the highest in the fourth quadrant and decreases counterclockwise; conversely, Occurrence probability is the lowest in the third quadrant and increases clockwise.

– Diversity interaction

In the diversity interaction that reproduces the functional conflict, the standard deviation has a positive correlation with the faultline strength and a negative correlation with the tournament size. These results confirmed that Occurrence probability is lowered by the faultline strength and increased by the tournament size. Regression analysis was performed using the standard deviations as objective variables (see Eq. (5)). The faultline strength should be weaker and the tournament size should be larger to improve Occurrence probability:

TS: The tournament size

$$SD = 1.42 + 0.29S - 0.01TS \tag{5}$$

*Coefficient of determination = 0.433, $p = 0.006$

– The random interaction

In the random interaction that expresses an organization's potential capacity, the evaluation standards in Table 3, the maximum value and the standard deviation, could not confirm the influence of the faultline strength and the number of subgroups. This result shows that without conflict, the structure of diversity does not affect organizational performance.

Based on the above results, Fig. 7 shows the relationship between the evaluation standard (the maximum value and the standard deviation) and the structure of diversity (the faultline strength and the number of subgroups).

The simulation showed that the faultline strength and the number of subgroups, i.e., the structure of diversity, influence the results of each interaction. Furthermore, the influences are changeable according to the structure of diversity. It is especially true in the case of the similarity interaction, where the effectiveness of the diversity depends on the maximum value and the standard deviation. Therefore, to achieve organizational goals, it is important to understand the structure of the diversity and, moreover, how to manage their interaction.

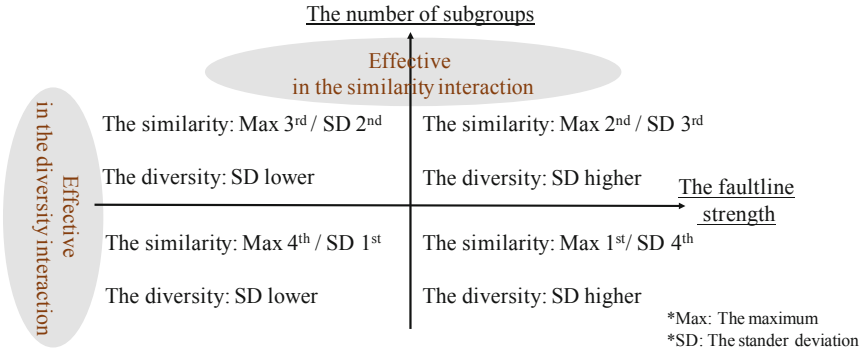


Fig. 7. Relationship between the structure of diversity and the features of each interaction

4.4 Model Validation

As for the maximum value and the standard deviation of the similarity interaction that reproduces the faultline theory, the correlation coefficients in Table 3 confirmed that an increase in the rate of In-SG (as the disfunctional conflict becomes stronger) decreases the maximum value. Additionally, Table 4 shows the result of the regression coefficient in order to see the influence of the rate of In-SG (influence of the disfunctional conflict) by the faultline strength. When the faultline strength is stronger, the absolute value of the regression coefficient becomes greater. The faultline strength makes the influence of disfunctional conflict. Therefore, this model demonstrates the phenomenon that conflicts arising from the faultline have a negative influence on an organization. This evidence validates the model.

Table 4. Regression coefficient of the rate of the In-SG

The set number	The faultline strength	The number of subgroups	The maximum value	Standard deviation
①	1.000	2	−3.495*	−0.987*
②	0.142	2	−0.545.	−0.200.
③	0.723	3	−1.079	−0.404
④	0.300	3	−0.553	−0.258
⑤	0.848	6	−0.874	−0.399*
⑥	0.260	6	−0.578	−0.215

.p < 0.1, *p < 0.05, **p < .001, ***p < 0.001

5 Fact-Finding Survey

The next simulation is based on the results of a fact-finding survey conducted targeting organizations based in Japan.

5.1 Survey Overview

Survey subjects were five companies and 14 groups in Japan (three groups of one major company, one group of one midsize company, ten groups of three joint ventures, where 126 participants responded to the survey), where the employee attributes and in-group communication conditions were surveyed.

Attribute data consisted of four items, age, gender, service years, and type of employment. Survey items consisted of two items, the frequency of communication in business with each staff members (five-stage), and the frequency of having lunch together (five-stage).

In the United States, age, gender, race, and occupation are frequently used as the attributes to calculate the faultline strength. However, in this study, while considering Japan-specific employment practices, employment status (regular or non-regular) and service years were added to the survey items in order to distinguish employees that joined the company as a new graduate and employees that joined the company by job transfer. In contrast, race and occupation were removed from the items. The reason is why many

Japanese companies hire new university graduates and cultivate them to serve as corporate generalists, so that there is less awareness in job types. By using attribute data, the structure of diversity was calculated - the faultline strength of the entire group, the number of subgroups, and the subgroups to which each staff member belongs - based on ASW. Then the percentage of communication among staff members that belong to the same subgroup was calculated, in both a business situation and at lunch.

5.2 Survey Results

The survey results in Table 5 show the structure of diversity and communication conditions. Figure 8 plots the faultline strength and the number of subgroups of the 14 groups. The results of the regression analysis on the faultline strength, the number of subgroups and the rate of In-SG is calculated below:

$$N = 0.687 + 5.721 \times S \tag{6}$$

*Coefficient of determination = 0.522, $p < 0.005$

$$R = 0.785 + (-0.114) \times N \tag{7}$$

*Coefficient of determination = 0.847, $p < 0.001$

The survey results brought about four features of the subject organizations.

- Half of the subject organizations had less diversity with a homogeneous structure because they are in the 3rd quadrant (i.e., the faultline strength is weak and the number of subgroups is low.).
- Equations (6) and (7) show tendencies where stronger faultlines increase the number of subgroups, whereas an increase in the number of subgroups decreases the rate of In-SG.
- Some major companies belonged to the 2nd quadrant with a structure where the similarity interaction and the diverse interaction were effective.
- On the other hand, organizations that belong to the 4th quadrant where the similarity interaction and the diverse interaction had little effect did not exist.

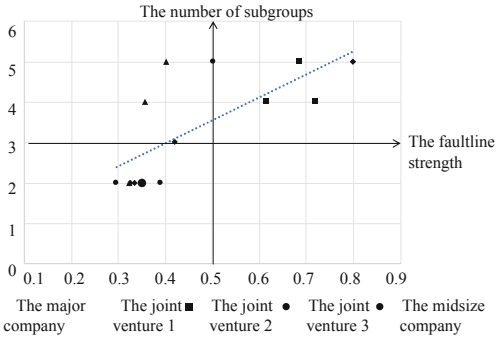


Fig. 8. Structure of diversity in 14 analyzed groups.

Table 5. Results for diversity and communication by groups.

Group		The number of staff	The faultlines strength	The number of subgroups	The number of staff per a subgroup	The percentage of agent interactions within the same subgroup	
						For business	For lunch
The major company	①	8	0.404	5	2,2,2,1,1	21%	25%
	②	7	0.357	4	3,2,1,1	28%	36%
	③	10	0.324	2	7,3	58%	71%
The Joint venture1	①	6	0.328	2	3,3	50%	43%
	②	7	0.422	3	3,2,2	35%	32%
	③	9	0.800	5	2,2,2,2,1	21%	40%
	④	6	0.336	2	3,3	49%	0%
The Joint venture2	①	10	0.686	5	3,2,2,2,1	23%	22%
	②	10	0.615	4	4,3,2,1	30%	30%
	③	19	0.722	4	11,5,2,1	42%	42%
The Joint venture3	①	4	0.297	2	1,3	61%	65%
	②	5	0.390	2	1,4	70%	71%
	③	15	0.502	5	4,3,3,3,2	21%	23%
The midsize company	①	10	0.351	2	5,5	50%	51%

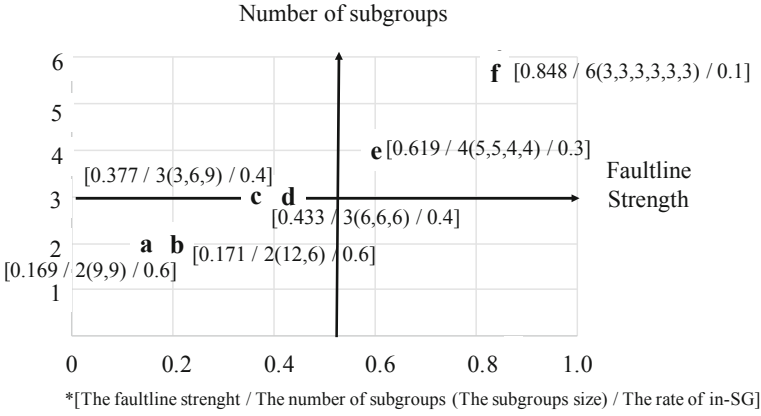


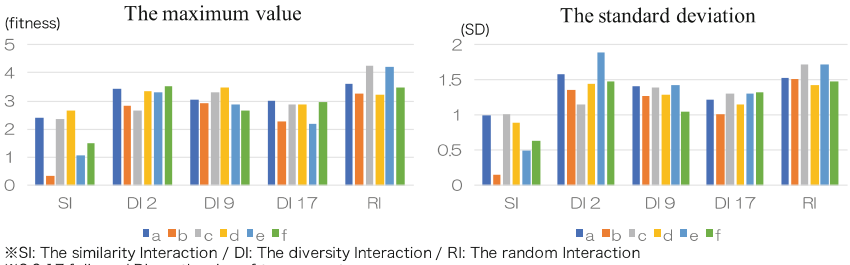
Fig. 9. Structure of diversity of six set data

Based on Eqs. (6) and (7), six new data sets (a through f) were formed and simulated. Figure 9 shows the diversity structures of the data sets. The fact-finding survey results confirmed that some groups had an imbalance in the number of subgroup members and some did not. Therefore, data sets were prepared in the case where an

imbalance in the number of subgroup members with almost at the same faultline strength and the case without such an imbalance: (a:12,6 and b:9,9; c:9,6,3. and d:6,6,6).

6 Simulation Results

The simulations on three interaction methods which are Similarity, Diversity and Random were conducted. One simulation consists of 100 interactions, while the simulation was conducted 100 times according to each setting. Figure 10 shows the maximum value and the standard deviation of 100 simulations (except outliers). The maximum value shows Maximum possibility and the standard deviation shows Occurrence probability.



※SI: The similarity Interaction / DI: The diversity Interaction / RI: The random Interaction
※2,9,17 followed DI are the size of tournament

Fig. 10. Results from about 100 simulations each for method of interaction.

- In Similarity interaction, the rate of In-SG was set based on the survey. Maximum possibility became lower while Occurrence probability became higher when compared to the random interaction method. Especially in the case of (b), (e) and (f) this characteristic appeared apparently. (b) was that the faultline strength was weak, the number of subgroups was small and the number of members in the subgroup was uniform. (e) and (f) were that the faultline strength was strong and the number of subgroups was a lot.
- In (a) and (b), there were significant differences in the maximum value and the standard deviation despite the faultline strength and the number of subgroups were almost the same. This result confirmed that an imbalance in the number of subgroup members would affect the organization's performance. The previous study of Polzer et al. [4] reported in their field survey that organizations with an imbalance in the number of subgroup members tended to achieve high performance when compared to those with a uniform number of subgroup members. Comparison of the maximum value, which was higher in (a) with the imbalance than in (b), also supported this study result.
- As for the imbalance in the number of members, (a), (c), and (e) had the higher maximum value when compared with others in the random interaction method.

This confirmed that the random interaction method is not affected by the faultline strength or the number of subgroups, while being influenced by the imbalance.
– In Diversity interaction, the tendency was able to observe that is similar to the validation data sets where a greater tournament size can increase the occurrence probability (the correlation efficient is −0.55 and the p-value is significant at 5%).

7 Discussion

In this study, quantifying diversity with the faultline strength and the number of subgroups based on the faultline theory, three interaction methods based on conflict effects were simulated with ABM. Through these simulations, we validated how the relationship between organizational diversity and communication could affect organizational performance. Our simulations clarified the following points.

1. The diversity influences on organizational performance, because it occurs disfunctional conflict and communication cannot have equality in an organization. In addition, there are different influences by the diversity structure and the method of interaction.
2. In Similarity interaction that occurs the disfunctional conflict, the faultline strength can work positively in increasing Maximum possibility; however, it causes a negative influence by decreasing Occurrence probability. The number of subgroups has an effect opposite to the faultline strength.
3. In Diversity interaction that actively leverages diversity (the functional conflict), the faultline strength has a negative influence by decreasing Occurrence probability. The functional conflict tends to work more effectively in organizations when the faultline strength is weak.
4. Therefore, there are three important things. The first is to grasp the diversity structure. The faultline theory which can analyze the diversity quantitatively is a useful tool. The second is to manage the method of interaction by assigning jobs, facilitating meetings etc. The third is to determine organizational goal-setting priorities, – whether is it more important the maximum possibility or the occurrence probability? – For example, the financial department has priority of the occurrence probability however the new business development department has priority of the maximum possibility.
5. Based on the survey of Japanese organizations, half of them have weak faultlines and few subgroups, and are uniform organizations. However, some sections of large organizations progress more than others in terms of the diversity. Also, it becomes clear that as the faultlines become strong, the number of subgroups increases.

This paper performed a simulation using the data of business communication obtained for the survey. For future research, it is necessary to use the data of frequency of the shared lunch survey and to compare it with the business communication. In addition, it is necessary to conduct the survey with more companies and sections to examine the diversity of Japanese organizations in more detail. Furthermore, there is a need to survey not only by a questionnaire but also by a digital equipment.

8 Conclusion

The purpose of this study was to clarify how to manage a diversified organization in order to enhance organizational performance. Our study obtained one solution that is to overcome the unproductive conflict by understanding the organization diversity structure, and then to form a communication mechanism that leverages diversity. It should serve as one of the management measures necessary for enhancing organizational performance.

This study made an academic contribution by reproducing the results of previous studies of the faultline theory based on ABM, clarifying part of its mechanism from the communication perspective. Additionally, on the practical contribution, this study investigated the Japanese companies with the faultline theory, clarifying a part of the diversity of Japanese organizations.

This model was based on the survey of the small organizations, and the simulation was conducted for a small group of a task execution unit. We have not verified large-scale organizations yet. Therefore, future research should be conducted in more realistic settings to understand the effect of diversification in large-scale organizations.

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