

■ 論文 ■

The Influence of Social Networks on the Development of Volunteer Groups in a Community (2)

～ A Quantitative Investigation of Volunteers' Decision Making Process ～

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Introduction

This research aimed to investigate the influence of social networks and evaluation factors on volunteers' behavior and behavioral intentions (intentions).

Currently, volunteer groups' activities prosper in Japan. As the importance of volunteer groups increases, many researchers have focused on them and their participants. Social psychologists are interested in the psychology behind participation in volunteer groups, and have investigated volunteers' decision making process. These studies can be roughly divided into two approaches. One focuses on the influence of sociological factors like social networks on the volunteers' behavior and intentions. The second relates to evaluation factors such as cost or subjective norms.

The literature examining the relationship between social networks and volunteers' behavior and intentions, includes work by Ando, et al. (2000), who demonstrated that individuals' daily networking in the community was significantly related to their volunteering behavior. Similarly, Ohnuma, et al. (2000) and Sugiura (2003) demonstrated that networks of friends (friends associated with environmental issues and friends in daily life) had an influence on the behavior of environment-focused volunteers. In this way, social networks are assumed to be an important factor influencing volunteer behavior. However, the researchers described above have focused on community or friend networks in daily life. That is, these networks were not directly related to the volunteer groups, and the relationship between the networks that volunteer group members construct within their groups and the behavior/intentions of their members has not yet been examined sufficiently. Therefore, the current study aims to explore the relationship between social networks within volunteer groups and the behavior and intentions of group members.

Note that members within the group networks are not always equally close, because, for example, some come into contact only during group activities, some are personal friends outside of the group's activities, and some do not interact at all, despite being part of the same larger volunteer group. Granovetter (1973) has clas-

sified social networks into two types — those featuring close relationships between individuals (strong ties) and those with loose relationships (weak ties) — the differences being characterized by time expended, emotional intimacy, and reciprocity. These ties have varying influences on the volunteer group. For example, Kato and Fujihara (2011) suggested that available social networks (strong ties or weak ties) changes with the developmental stages of volunteer groups. Matsuda (2000) suggested that weak ties among members are necessary for the systematization of the volunteer group. As this, previous research investigated the influence of ties on group organization (group level effect), but there are few research which have confirmed their influence on members' behavior and intentions (individual level effect). This study will also explore the influence of the strength of ties on members' behavior/intentions.

Behavior and intentions of volunteers vary. For example, previous research has measured the frequency of participation in meetings and events of volunteer groups, as well as the intention to be continuously active in the group and to participate actively (Ando and Hirose 1999). Moreover, volunteer groups are generally believed to be a minority or small group (Nonami 2001). Therefore, volunteer members may need to adopt behavior and intentions to increase their social power, such as increasing the number of group members, making their activities more appealing to society, and taking actions to establish external relations (expansion behavior and intention to group expansion). Moreover, Kaneko (1986) indicated that a mutual inter-group network provides a useful means of increasing the social influence for volunteer groups. Since cooperative networking increases numbers and supplements knowledge and techniques of each group, volunteer group members may be asked to adopt behavior and intentions that will create networks with other volunteer groups (intention to cooperate with other groups). The current study is designed to examine the influence of two types of intra-group networks (strong intra-group ties and weak intra-group ties) on these behavior and intentions.

Takagi and Tamaki (1995) showed that the relationships among inter-group networks affect the behavior and intentions of volunteer group members. They indicated that if the network between groups is not functioning properly, group members' activities and willingness to participation are reduced. As such, inter-group networks are also important at the level of the individual. Therefore this study also examines the effect of inter-group networks on the volunteer group members' behavior and intentions. It is important to note, however, that an inter-group network may include persons known only by name, as well as persons with whom one is intimate in daily life, that is, persons with weak ties and strong ties. We examine the influence of these two types of inter-group networks (strong inter-group ties and weak inter-group ties) on members' behavior and intentions.

Volunteer group members do not determine their behavior and intentions based solely on the influence of the social network. Several studies have pointed out the effect of evaluation factors such as cost, subjective norms and organizational identity have significant influences on members' behavior and intentions (Ando and Hirose 1999; Harrison 1995; Nonami, et al. 2002). Cost consists of each member's evaluation concerning the burden (e.g., time and/or money) that is associated with participation and has a negative effect on behavior and intentions. A subjective norms which is defined as the perceived social pressure or expectation from others to engage in a behavior has a positive influence on behavior and intentions. Organizational identity is the affective

evaluation of each member to the belonging group and has a positive effect on behavior and intentions. The current study explores these effects.

Furthermore, this study investigates the influence of empowerment on behavior and intentions. Empowerment is defined as a process by which individuals, organizations and communities gain mastery or control over their own lives (Rappaport, et al. 1984; Zimmerman and Rappaport 1988). That is, through volunteer activity, each member gains both psychological empowerment and community empowerment. Several researchers have shown that positive evaluations of empowerment positively affected intention to participate, as well as actual participation in social action like volunteer activity (Maeda et al. 2002; Rissel 1994; Wallenstein and Bernstein 1994; Zimmerman 1990). However, volunteer members may not necessarily gain positive empowerment. For example, participation in a volunteer group may cause trouble to members' everyday life, or they may feel helplessness, if their volunteer group fails to achieve their goal or result in unexpected one. This study also examines the effect of such a negative empowerment.

This study hypothesizes the following causal relationship (Figure 1). By including influence of both social networks and evaluation factors, the aim is to provide a more inclusive explanation of volunteer members' behavior.

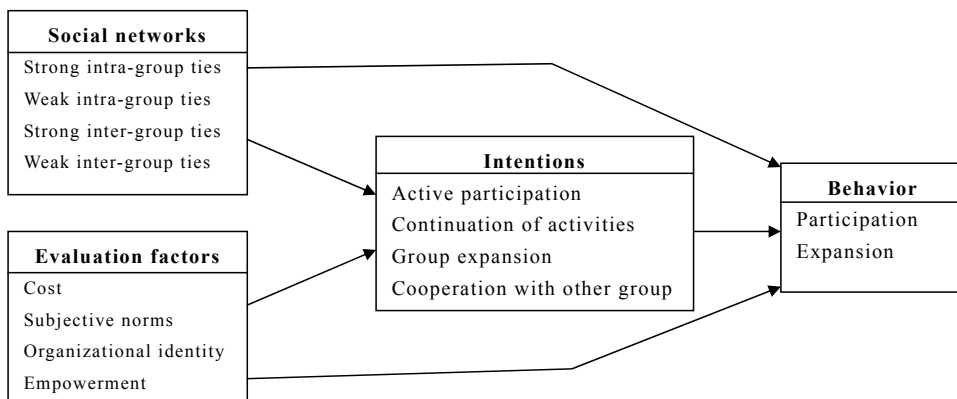


Figure 1. The decision making process of volunteer behavior (Hypothesis model)

Method

Participants

One hundred and forty-six members of volunteer groups located in Ashiya City (Hyogo Prefecture in Japan) and adjacent cities were surveyed. Ashiya City is a comparatively small city with a population of approximately 90,000. These areas were damaged by the Great Hanshi-Awaji earthquake in 1995. At that time, many local people volunteered and many volunteer groups were established to help victims and to reconstruct the town. Many volunteer groups are still active.

Procedure

Representatives of seven groups, who agreed to take part in a questionnaire survey, distributed the questionnaire to members of their groups between the beginning of June and middle of July 2003. The question-

naires were returned by mail.

Survey items

- Behavior items

Participation behavior was measured by inquiring about participation in “group meetings” and “group events” (four cases for each---1.never participate~4.always participate). Expansion behavior was measured using four items such as “Asking acquaintances and friends to join the group” and “Publicizing the purpose of group to others” (three cases for each---1.never carry out~3.carry out frequently).

- Intention items

Intentions related to volunteer groups were assessed by inquiring about intention to active participation (five items) and continuation of activities (five items) as described by Ando and Hirose (1999). Moreover, we asked about intentions to group expansion (six items) and cooperation with other groups (six items) in this research (five point scale for each---1.totally disagree~5.agree totally).

- Evaluation items

Referring to Ando and Hirose (1999), we asked about the subjective norms (four items), cost (four items) and organizational identity (six items) as aspects of volunteer group membership (five point scale for each---1.totally disagree~5.agree totally).

Moreover, referring to Maeda et al. (2002), we inquired about personal empowerment (five items), community empowerment (four items) and negative empowerment (four items) (five point scale for each---1.totally disagree~5.agree totally).

- Social network items

We asked participants to specify the number of members included in the social networks both intra-group and inter-groups (Ohnuma et al. 2000). The number of strong ties was determined with three items such as “The number of persons with the same interests and concerns” (three intra and three inter group items---the number of person answer). And, the number of weak ties was determined with three items such as “The number of persons known only by name” (three intra and three inter group items---the number of person answer).

Results

Respondents

Ninety-one valid completed questionnaires were returned (62.3% return rate). Respondents consisted of 15 men (age: $M = 62.40$, $SD = 14.31$) and 76 women (age: $M = 56.54$, $SD = 10.14$)¹. There were no significant difference between the ages of the men and the women ($t_{(89)} = 1.90$, *n.s.*).

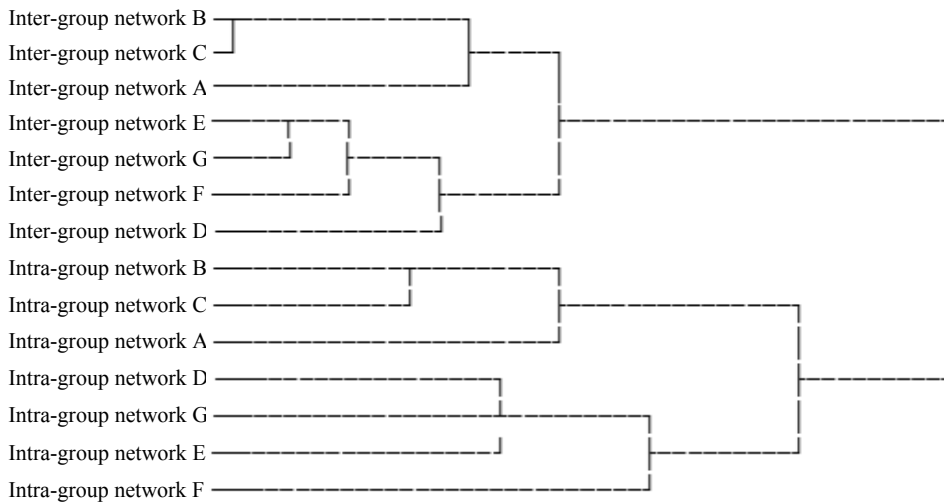
The respondents belonged to three environment-focused volunteer groups, twelve welfare-focused volunteer groups, two multi-purpose volunteer groups, and one overseas support volunteer group. Each volunteer

¹ The ratio of males to females was biased, although this reflects the gender make-up of the target groups. As very little difference between the male and female responses was detected, subsequent analyses were conducted with the data collapsed across gender.

group had from 10 to 60 members. Duration of membership of respondents varied from 1 to 30 years, with an average of 7.06 years ($SD=5.67$).

Social networks

Cluster analysis resulted in four clusters (inter-group average linkage, average Euclidean distance) for the intra/inter group networks (twelve items in total). Cluster 1 (inter groups A, B, C) was assumed to have strong inter-group ties, Cluster 2 (inter groups D, E, F, G) with weak inter-group ties, Cluster 3 (intra groups A, B, C) with strong intra-group ties, and Cluster 4 (intra groups D, E, F, G) with weak intra-group ties (Figure 2).



- | | |
|--|--|
| A. Someone with the same interests or concerns | B. Someone with whom worries can be discussed |
| C. Someone contacted in daily life | D. Someone with whom to go out for dinner or a drink |
| E. Someone contacted once in a while | F. Someone to see only at an event or meeting |
| G. Someone known only by name | |

Figure 2. Clusters of social networks

Results of factors analysis

A factor analysis (maximum likelihood method using promax rotation) was conducted on the items. Tables 1 through 4 list the results.

First, factor analysis was conducted on the six behavior items, from which two factors were extracted - expansion behavior and participation behavior (Table 1).

Next, factor analysis was conducted on the 22 intention items. Four factors were obtained after excluding those items with low commonality (Table 2). These factors indicate an intention to cooperation with other group (Factor 1), continuation of activities (Factor 2), active participation (Factor 3) and group expansion (Factor 4).

Factor analysis of cost, subjective norms and organizational identity items showed that, after excluding two items with a low commonality, three factors were identified, organizational identity, subjective norms, and cost evaluation (Table 3).

The thirteen empowerment items resulted in 3 factors, community empowerment, personal empowerment, and negative empowerment (Table 4).

Table1. Factor analysis of behavior items

Item	M (SD)	Expansion	Participation
Asking people who attend events to join the group.	1.66 (.56)	<u>.93</u>	-.11
Asking acquaintances and friends to join the group.	1.78 (.56)	<u>.69</u>	.09
Introducing group members to other group members.	1.60 (.63)	<u>.68</u>	-.02
Publicizing the purpose of the group to others.	2.13 (.62)	<u>.54</u>	.18
Participation in group meetings.	3.55 (.80)	-.05	<u>1.02</u>
Participation in group events.	3.51 (.72)	.08	<u>.72</u>
Accumulated contribution ratio (%)		52.33	72.66
α coefficient		.81	.87
Correlation between factors		1.00	.44
			1.00

*Expansion and participation behaviors items are based on 3 and 4 case analysis, respectively.

Table2. Factor analysis of intentions

Item	M (SD)	Cooperation with other group	Continuation of activities	Active participation	Group expansion
I want to built cooperative relationships with groups in different areas.	3.58 (.94)	<u>.96</u>	-.10	-.04	-.11
I am reluctant to cooperate with a group in a different area. *	3.87 (.90)	<u>.85</u>	.06	-.23	.09
I want to be tied up with groups in the same area.	3.55 (.93)	<u>.67</u>	-.12	.16	.01
I want to be tie up with groups in different area.	3.29 (.94)	<u>.67</u>	-.15	.20	.02
I want build cooperative relationships with groups in the same area.	3.96 (.92)	<u>.63</u>	.22	-.01	-.01
I am reluctant to work together with groups in the same area.*	4.06 (.84)	<u>.49</u>	.21	-.14	.18
I want to quit this group.*	4.59 (.67)	-.09	<u>.85</u>	-.10	.11
I will continue with this group for more than one year.	4.58 (.65)	.00	<u>.80</u>	-.07	-.05
I want to remain a group member for as long as possible.	4.29 (.82)	-.07	<u>.71</u>	.21	-.01
I want to attend group's events and meetings.	3.66 (1.05)	.27	<u>.52</u>	.32	-.14
I want members to spend more time on group work.	2.99 (.96)	.12	-.33	<u>.77</u>	.07
I want to spend more time on group activities.	2.91 (.94)	.06	.20	<u>.65</u>	-.14
I want new friendly members.	3.03 (1.00)	-.17	.08	<u>.59</u>	.00
I want to be a major member of the group (continuously).	2.74 (1.2)	-.05	.17	<u>.53</u>	.09
I am reluctant to spread the group's activities widely.*	4.19 (.88)	.00	.05	-.04	<u>.83</u>
I am reluctant to increase the number of group members.*	4.14 (.82)	.07	-.02	-.41	<u>.74</u>
I want to spread the group's activities widely.	3.94 (.85)	-.02	-.07	.38	<u>.70</u>
I want to increase the number of members to scale-up the group.	3.49 (.97)	-.01	-.02	.28	<u>.54</u>
I want many people to know of this group's activities.	4.19 (.88)	.02	.18	.36	<u>.40</u>
Accumulated contribution ratio (%)		31.92	46.10	57.13	65.71
α coefficient		.85	.80	.83	.79
Correlation between factors		1.00	.39	.27	.46
			1.00	.36	.19
				1.00	.22
					1.00

*Reversal item

Table3. Factor analysis of subjective norms, cost & organizational identity

Item	M (SD)	Organizational identity	Subjective norms	Cost
I like the people in this group.	4.33(.80)	<u>.85</u>	-.05	-.22
I feel close bonds with this group.	4.02(.99)	<u>.78</u>	.09	.05
I am proud of being a member of this group.	4.11(1.00)	<u>.76</u>	-.11	.18
The people in this group are nice.	4.55(.76)	<u>.74</u>	.04	-.08
This group is important to me.	4.30(.84)	<u>.72</u>	.03	.11
Group members will not mind even if I quit.*	3.78(1.00)	-.13	<u>.90</u>	.03
Group members will not mind if I do not join activities.*	3.73(.99)	.06	<u>.78</u>	-.02
Group members will be happy if I continue the group's work.	4.29(.77)	.11	<u>.72</u>	.04
I worry that I must be careful about the group's human relations.	1.90(.84)	.04	-.11	<u>.83</u>
I worry because I have less free time if I join the group.	2.02(.91)	.06	.18	<u>.65</u>
I worry because I'll need extra money if I join the group.	1.62(.92)	.00	-.19	<u>.32</u>
Accumulated contribution ratio (%)		38.82	56.23	68.84
α coefficient		.87	.83	.59
correlation between factors		1.00	.45	-.26
			1.00	-.37
				1.00

*Reversal item

Table4. Factor analysis of empowerment

Item	M (SD)	Community empowerment	Personal empowerment	Negative empowerment
Our activities can change regional problems.	2.96(1.22)	<u>.92</u>	-.15	-.06
Our activities can improve our area.	3.22(1.16)	<u>.86</u>	-.03	-.07
Our activities can make the world better.	3.23(1.10)	<u>.79</u>	.07	.06
Our activities help to change citizen's consciousness.	3.17(1.05)	<u>.64</u>	.20	.07
I could find reason for living.	3.62(.98)	-.08	<u>.84</u>	.11
I could make many friends.	3.86(.97)	.02	<u>.65</u>	-.13
I could acquire professional skills and knowledge.	3.29(1.29)	.04	<u>.64</u>	.02
I could change my thoughts on my way of life.	3.60(1.04)	.06	<u>.63</u>	.06
I got a broader interest and point of view.	4.08(.78)	-.04	<u>.51</u>	-.13
The relationships with people around became awkward.	1.44(.67)	.01	-.08	<u>.95</u>
I feel trouble in daily life.	1.90(.98)	-.03	.02	<u>.56</u>
I have come to think of my work as being useless.	1.50(.64)	-.12	-.02	<u>.45</u>
I have come to feel that I'm different from others.	2.38(1.03)	.17	.05	<u>.39</u>
Accumulated contribution ratio (%)		30.44	47.41	60.80
α coefficient		.88	.78	.62
Correlations between factors		1.00	.41	.06
			1.00	-.08
				1.00

Table 5 lists the simplified factor scores of each factor. Note that Table 5 also includes the arithmetic mean of each cluster.

Table5. Mean of each factor and cluster

Factor/Cluster		M (SD)
Behavior	Participation	3.53(.72)
	Expansion	1.79(.48)
Intentions	Active participation	3.36(.74)
	Continuation of activities	4.29(.65)
	Group expansion	3.94(.68)
Social networks	Cooperation with other group	3.72(.69)
	Strong intra-group ties	4.51(3.98)
	Weak intra-group ties	8.58(11.19)
	Strong inter-group ties	5.34(10.61)
	Weak inter-group ties	6.05(12.19)
Evaluation factors	Subjective norms	3.80(.71)
	Cost	1.84(.66)
	Organizational identity	4.21(.69)
	Personal empowerment	3.71(.73)
	Community empowerment	3.14(.97)
	Negative empowerment	1.81(.58)

Analysis of causal relationship

We performed Structural Equation Modeling (SEM) to examine the causal relationship between the volunteers' behavior, intentions, social networks and evaluation factors. Each factor was calculated by the simplified factor score and the hypothesis model was analyzed using the observed variables. As a result, weak inter-group ties and personal empowerment had no significant influences on every variable. Once these factors were eliminated from the model and co-variances between variables were added, as indicated by modified index, it was re-analyzed. The final model is shown in Figure 3.

First, influences on volunteers' behavior from social networks, evaluation factors, and intentions were examined. Strong intra-group ties, weak intra-group ties and cost had significant influence on participation behavior. Strong inter-group ties, intention to active participation, and intention to cooperation with other groups both had significant influence on expansion behavior.

Next, influences on intentions from the social networks and evaluation factors were examined. Weak intra-group ties had a significant influence on intention to continuation of activities. Community empowerment influenced all intentions. Negative empowerment had a significant impact on the intention to continuation of activities. Moreover, subjective norms had a significant influence on the intention to group expansion and intention to cooperation with other groups. Organizational identity had a significant influence on intention to continuation of activities and intention to active participation.

Various co-variances between social networks and evaluation factors were obtained. In particular, strong intra-group ties had significant co-variances with several factors such as organizational identity, subjective norms and community empowerment. Co-variance between weak intra-group ties and cost was significant. Negative empowerment had co-variances with strong inter-group ties and cost. Co-variance was also present between subjective norms and organizational identity.

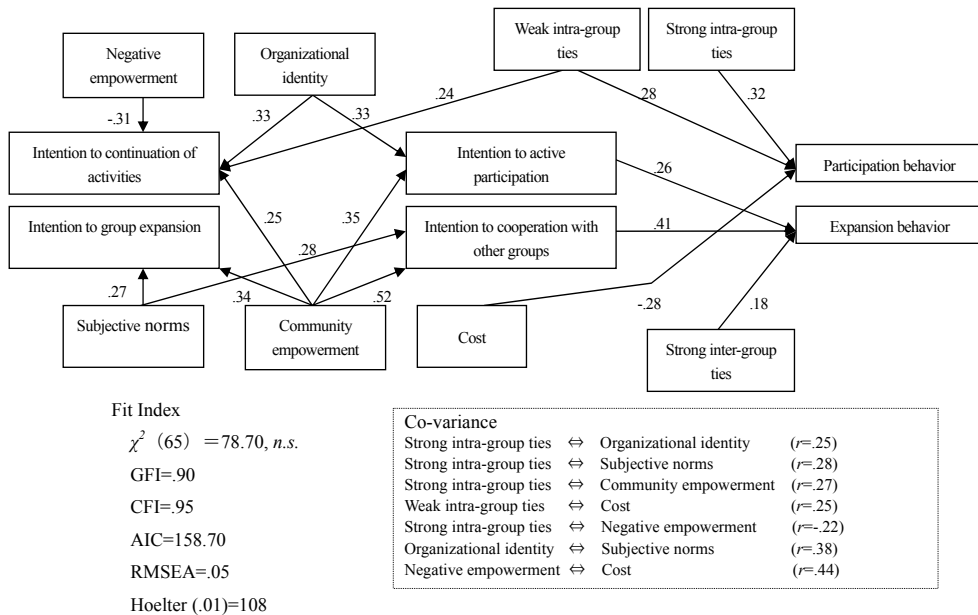


Figure3. The decision making process of volunteer behavior

Discussion

This study investigated the influence of social networks and evaluation factors on volunteers' behavior and intentions.

First, we discuss the influence of social networks on volunteers' behavior and intentions. SEM showed that strong intra-group ties and weak intra-group ties had significant influence on participation behavior. Moreover, strong inter-group ties had significant influence on expansion behavior. On the other hand, with regard to intentions, only the path from weak intra-group ties to intention to continuation of activities was significant. From these results, it is proposed that social networks have a more direct influence on volunteers' behavior. Compared to strong ties and weak ties, it is thought that strong ties had a stronger influence on behaviors because each strong tie (intra-group and inter-group) had a significant influence on the behavior, and strong intra-group ties had stronger influence on participation behavior than weak intra-group ties. These results are consistent with previous research, which showed that strong ties had an impact on behavior (McAdam 1986; Chwe 2003=2003).

Considering each causal relationship in detail, the reason for the influence of strong intra-group ties on participation behavior is as follows: a particular person connected with strong ties in a same group may become the significant other for a given member. A significant other within a group may become a target of identification and the reference model of behavior for that individual (Kelman 1961). That is, in order to take the approval from a significant other, a member may accept the normative influence arisen from strong intra-group ties and may promote his/her participation behavior. This view is supported by the observation that strong intra-group ties had significant co-variance with subjective norms.

Second, we discuss the influence of weak intra-group ties on participation behavior and intention to continuation of activities. These behavior and intentions involve passive behavior or intention to have present group conditions remain the same. In contrast, expansion behavior and intention to active participation are active behavior or intentions which are intended to develop a volunteer group. Passive behavior and intentions are easier to execute than active ones, because the cost for executing is low in the former compared with the latter. Other group members who are connected only with weak ties are not so important for an individual and they have only a superficial influence on the individual's behavior (Ajzen and Fishbein 1980). Therefore, other members with weak ties can not force him/her to develop active behavior and intentions by which a greater cost is incurred, but only influence his/her passive one.

A significant influence of the inter-group networks was obtained only between strong inter-group ties and expansion behavior. Typically, weak ties are excellent channels to spread information (McAdam 1986) and it was thought that using weak inter-group ties was a good means for group expansion (Matsuda 2000). However, to expand a group, it is necessary not only to provide information to other groups, but also to recruit new members from these other groups. While communication may be easy with an individual person who is connected only with weak ties between groups, it is hard to recruit that person as a new member because the relationship with him/her is only superficial. On the other hand, individuals who connect with strong inter-group ties may

be able to recruit members easily, because their relationship is close. Therefore, the causal relationship between strong inter-group ties to expansion behavior appears to be a valid finding.

Next, we consider the influence of evaluation factors on members' behavior and intentions. Only cost affected participating behavior. Members who judge the cost of group activity higher may not be willing to participate in the volunteer group. On the other hand, intentions were influenced by various evaluation factors. First, community empowerment had a significant influence on all intentions. Members who evaluated that the activities of their group contributed to social welfare had higher intentions. Although it has been pointed out that community empowerment affects members' behavior (e.g., Maeda, et al. 2002), the result of this research makes clear that community empowerment reinforces intentions and influences behaviors indirectly. Moreover, concerning empowerment, negative empowerment affected the intention to continuation of activities. That is, members who perceive negative influences from volunteer activities do not continue volunteer activities.

Organizational identity affected the intention to continuation of activities and active participation. Members who identify with the group to which they belong are likely to continue the volunteer activities and try to be involved in them more positively. This supports the result of Ando and Hirose (1999). Moreover, subjective norms affected the intention to group expansion and cooperation with other groups. Generally, the volunteer groups tend to be seen as a minority (Nonami 2001). Actually, volunteer groups in this research were small-scale (10 to 60 members). For these groups, it is necessary to increase social power by expanding the number of members or establishing the cooperative relationships with other groups. And each member will be encouraged to have intentions along these lines. That is, these intentions are formed as the implicit group norm in the groups, so this causal relationship was obtained.

In summary, the result of this study indicated that social networks, and especially strong ties, had a direct influence on members' behavior, and evaluation factors mainly influenced members' intentions. These findings suggest that the affirmative reinforcement of both factors leads to members' positive behavior and intentions.

Our research demonstrated that group members determined their volunteer behavior and intentions multilaterally (both social networks and evaluation factors). However, most of the volunteer groups surveyed for this research were community-based, small non-NPO volunteer groups, and therefore there might be limited generalizability of the results of this study. Surveying larger volunteer groups would include a wide range of activities, and also include NPO groups. Such a study is needed to assess the reliability of our findings.

In addition, our data were collected from volunteer groups with very different purposes, but the sample size was not large enough to analyze the data by group purpose. The strength of the causal relationships may vary depending on the purpose of the volunteer group. It is important to increase sample size and examine the differences in the relationships among factors. In addition, this research was focused on Japanese volunteer groups. However, the position of the volunteer group in society may change depending on the country and its cultural backgrounds. This difference may also affect volunteer members' behavior, intention, motive and so on. To generalize our finding further, it would be necessary to conduct cross-cultural surveys.

Acknowledgement

This research was partially supported by the Ministry of Education, Science, Sports and Culture, Grant-in-Aid for Scientific Research (B), 14310064, Principal investigator: Fujihara Takehiro, 2002-2003.

We are thankful to the members of groups which cooperated in this research.

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Abstract

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~A quantitative investigation of volunteers' decision making process~

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This paper investigates the influence of social networks and evaluation factors such as empowerment, subjective norms and cost on volunteers' behavior and intentions. Volunteer group members in Ashiya City (Hyogo, Japan) and other nearby cities were surveyed. Volunteer group representatives distributed questionnaires to members of their group and related groups, to be returned by mail. A total of ninety-one participants responded. Structural Equation Modeling revealed that social networks, especially strong ties (intra and inter-group), had direct influence on members' behavior, whereas evaluation factors mainly influenced members' intentions. These results suggest that group members determine their behavior and intentions multilaterally, based on social networks and evaluation factors.

【Keyword】

volunteer, decision making process, social network, evaluation factor