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Factors Relates to the Members' Contribution to Group Activities: A Case of Vegetable Growing Group at Baan Non Khawao in Khon Kaen Province

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ABSTRACT

The objective of this research was to determine the factors related to members' contributions to group activities using the following four indices: i) member attributes, ii) managerial orientations, iii) reasons for joining the group, and iv) organizational commitment. The data were collected using individual interviews with 27 members belonging to a vegetable growing group in Baan Non Khawao in Khon Kaen Province in Northeast Thailand. This vegetable group was selected as representative of a longstanding group, indicated by the increasing number of registered members. In order to analyze the influential factors, principal component analysis, correlation coefficients, and descriptive statistics were employed. The results showed that the positive factors related to the members' contributions to group activities were household income, family labor, the sale of Good Agricultural Practice vegetables, the sale of rice, and farmer managerial orientation regarding both "family members first" and farmer initiatives. Moreover, affective commitment was negatively correlated with the contribution to adjusting shipments. Furthermore, the percentage of dealer use, the farmer's managerial orientation with regard to sustainable development, and the reasons for joining the group were negatively correlated with cooperation with group management.

Keywords: Adjusting Shipment, Group Management, Member Contribution to Group, Motivation to Join Group, Vegetable Growing Group

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Introduction

Small-scale farmers and family farms in Thailand generally have limited opportunities to access capital resources efficiently and sell their products profitably (Andreas et al., 2012, pp. 1-18; Jessop et al., 2012). As a result, several government projects involving agricultural development have recently begun focusing on forming farmer groups, cooperatives, and/or farmer community enterprises to address these problems and improve the farmers' livelihoods (Office of The National Economic and Social Development Board, 2017). Once established, the Thai government, as well as other non-governmental organizations, have provided financial support and training to group members, which has helped them link to the necessary market in order to sell their products directly and increase their income. As most of the farmers are exploited by the middlemen, especially in developing countries.

Over the past 14 years, the number of registered farmer groups, cooperatives, and farmer community enterprises has increased rapidly. Khon Kaen Province contains the largest number of established groups, with 23,449 of the 82,898 total groups (Ministry of Social Development and Human Security, 2018). The top five established groups are involved in the agricultural production of rice, rice seed, mixed vegetables, mushrooms, and asparagus respectively. The vegetable growing groups are frequently promoted in Khon Kaen province, especially growing organic/safe vegetables following good agricultural practice (GAP) standards, as consumer demand for safe vegetables has significantly increased yearly because of health concerns. Furthermore, there is a Tesco Lotus distribution center in Khon Kaen province, suggesting a lot of suppliers are needed to produce safe and fresh vegetables.

While an increase in the number of groups growing vegetables has been continually reported, many groups have not achieved agricultural success and have folded. In fact, although some groups continue to work, not all of them have yet achieved full success. One vegetable growing group in Baan Non Khawao is representative of the longstanding groups. This group has operated since 2016, but has not yet reached the target for success as it faces several obstacles in relation to the group management. To improve the group and achieve the target, research is crucial.

To make useful suggestions on how to improve, there are various available theories. Previous research in both developed and developing countries has frequently identified the managerial factors determining their success or failure (Porter et al., 1974, pp.603-609; Rosairo et al., 2012, pp.505-517). However, very little research has been conducted on the decision-making behavior of group members and leaders, or on the factors related to various member

contributions (see Barraud-Didier et al., 2012, pp.1-24; Bhuyan, 2007, pp.275-298; Xiang & Sumelius, 2010, pp.134-155). Accordingly, exploring factors related to members' contribution and motivation in group management is important.

Even though previous studies provide useful suggestions for improving farmers group management in many areas (e.g. Oerlemans & Assouline, 2004, pp.469-478; Rosairo et al., 2010, pp.505-517; Xiang & Sumelius, 2010, pp.134-155), studies on factors influencing members' willingness to contribute to group activities, especially in the case of farmer groups in Thailand, are scare. This study aims to fill this gap. The aim of this study is to explore the important factors related to members' willingness to contribute to group activities.

Research Methodology

Conceptual framework of the study

A conceptual model was developed to determine the factors related to members' contribution to group activities (FIGURE 1). This study focused on group activities in terms of adjusting shipment and group management. The proxy of group activities refers to adjusting shipment (AS) and group management (GM) (Table 1). To identify the different factors of members' contributions, four categories were summarized based on literature reviews and our own ideas: i) member attributes, ii) managerial orientation, iii) reasons for joining a group, and iv) organizational commitment.

In this study, member attributes represent the characteristics of the farmer and the farm (Table 2). The expected factors of farmer characteristics were gender, age, education, household income, urban job experience, nonfarm job experience, farming experience, GAP practical experience, and year of joining the group (Barraud-Didier et al., 2012, pp.1-24; Bhuyan, 2007, pp.275-298; Österberg et al., 2007, pp.181-197; Xiang & Sumelius, 2010, pp.134-155). Farm characteristics were GAP area, rice area, family labor, hired labor, input purchase through the group, input purchase per GAP vegetable area, sales of GAP vegetables, sale of rice, percentage of dealer use, and number of vegetable varieties (Xiang & Sumelius, 2010, pp.134-155).

Managerial orientation of individual members in the study focused on two factors: 'sustainable development' and 'family members first'. These were summarized from seven questions (Table 3) using principal component analysis (PCA) (Asai & Yamaguchi, 1999, pp.1-13). In terms of reason for joining a group, 15 questions in total (Table 5) were used to collect data from the respondents (Nakato et al., 2015, pp.1-13). PCA was then used to group the data into three factors: socializing, cooperation, and initiative. Finally, we suppose that organizational

commitment plays a key role in member contribution to group activities. Based on the well-established literature on organizational commitment, there are three components: affective, continuance, and normative commitments (Allen & Meyer, 1990, pp.1-18; Meyer et al., 1993, pp. 538-551; Meyer et al., 2002, pp.20-52). To indicate organizational commitment, 18 questions were asked, using a five-point Likert scale (Allen & Meyer, 1990, pp.1-18).

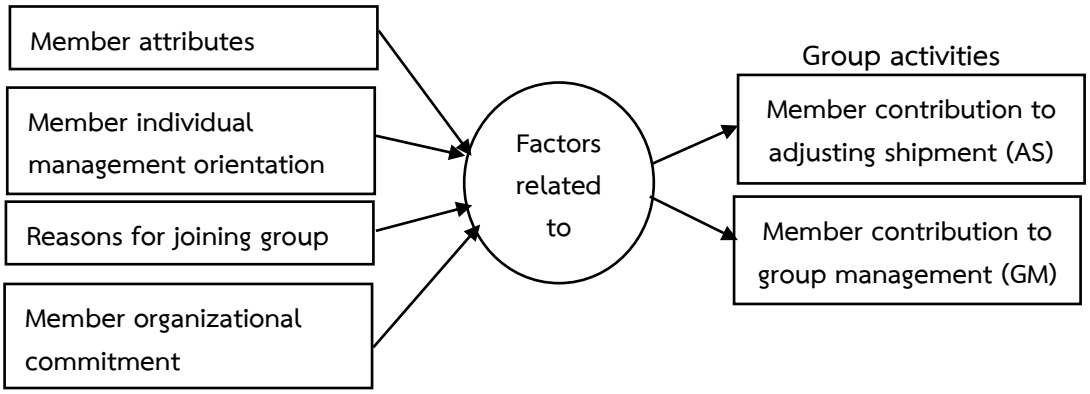

Figure 1 Conceptural Framework of the Research
Source: Author's Study

Based on the conceptual framework, we predict that members' attributes, members' individual managerial orientation, reason for joining group, and members' commitment will partially determine members' levels of willingness to contribute to group activities. Hence, the following hypotheses are suggested:

Hypothesis 1: Members' demographic characteristics and farm conditions will be positively related to members' contribution to group activities in respect of AS and GM.

Hypothesis 2: Members' management orientation, referring to 'sustainable development' and 'family members first', will be positively related to AS and GM.

Hypothesis 3: Members' motivation to join the group will be positively related to AS and GM.

Hypothesis 4: Members' organizational commitment, referring to affective, continuance, and normative commitment, will be positively related to AS and GM.

Data collection and analysis

This study was conducted in the Khon Kaen Province of Northeastern Thailand from August to September 2017. Data used in this study were obtained by interviewing a sample of 27 members using a structured questionnaire. A purposive random sampling technique was used to select a representative sample among members of a vegetable growing group in Baan Non

Khawao. All sample members are farm owners who are major decision-makers on farm management and registered with the vegetable growing group.

This vegetable growing group was established in July 2016, supported by the Thai Agricultural Office and Tesco Lotus. Operating in a contract farming manner, the agricultural extension officers offered skills training to all members with regard to production management, reduction of production costs, increased quantity and quality of products, and marketing their products directly. The vegetable marketing group initially consisted of 43 members, this increasing to 93 members by 2017. All members grew vegetables following GAP standards. In Thailand, this standard defines eight control points: water source, cultivation site, the use of agricultural hazardous substances, product storage and transportation, maintaining data records, the production of disease and pest-free products, quality management, and harvest and post-harvest handling. Each day, the group shipped 23 varieties of vegetables (or around 1,500 kilograms) to Tesco Lotus, representing a total weekly production of 10,500 kilograms (or approximately 172,000 baht). The group packaged their vegetables themselves at a packing house in Baan Non Khawao (under control of Tesco Lotus QC), then shipped them to the Tesco Lotus Distribution Center in Khon Kaen. Tesco Lotus then distributed the vegetables to their 98 branches in the Northeastern region.

For data analysis, PCA was used to summarize and classify member managerial orientation and motivation to join group. Correlation coefficients were used to identify and test hypotheses regarding the relationship between member contribution to group activities and the four variables, while descriptive statistics were used to describe the characteristics of respondents and crucial results.

Results and Discussion

Farmers' opinion about their contribution to the group activities

Group members were asked their opinion on their contribution to group activities. Table 1 shows that all of the respondents desired to cooperate with AS, albeit to varying degrees. AS refers to adjusting production values and crops to achieve shipment standards, which involves the quantity of vegetables shipped to the supermarkets. The largest percentage preferred to adjust their product value 'every time', while others considered cooperating 'as much as possible', or perhaps 'sometimes'. Any vegetable not meeting the standards could not be shipped directly to the supermarkets, thereby requiring members to sell to middlemen at lower prices. Cooperation with group management refers to financial management, member management, marketing management, and taking an active role on the committee. The results indicate a willingness to cooperate and participate at roughly 50 percent. Very simply, half of the members were unwilling to cooperate with any form of group management. In determining the factors

related to a member's contribution to the group, both AS and GM are set as dependent variables and indices within our study.

Table 1 Indices and Measurement of the Contribution to the Group

(n=27)

		No. of farms	%
Cooperation with the shipping adjustment plan (AS)[1/]	Adjust every time	10	37.0
	As much as possible	9	33.3
	Sometimes	8	29.6
	Seldom	0	0.0
	Do not consider	0	0.0
Cooperation with the group management (GM)[2/]	Yes	13	48.0
	No	14	52.0

Note: [1/] "Do you try to adjust your production value and crops to your group needs?

[2/] "If your group needs your participation, do you mind to take the roles?"

Source: Author's Study

Correlation between members' contribution indices and their attributes

The farmer attributes leading to the contribution indices were household income, family labor, input purchase per GAP vegetable area, sales of GAP vegetables, sales of rice, and percentage of dealer usage (Table 2). Household income had a positive relationship with AS, meaning that farmers with a higher income had enough capital to invest and adjust their production value and crops to achieve shipment standard, as conducting the adjustment processes required high capital investment in some stages, such as building green houses, digging for underground water, and controlling weeds by hand. Family labor had a positive correlation with AS, implying that an increased amount of family labor encouraged farms to adjust their production values efficiently. Input purchases per GAP vegetable area and sales of GAP vegetables had a positive effect on production value adjustments and group management. This suggested that larger amounts of input purchases and GAP vegetable sales encouraged farmers to adjust their production values and pay more attention to group management. As the members would like to bring all their products for direct sale to get a higher income return on total investment. The sale of rice maintained a positive correlation to AS. This is because the members with more paddy rice normally concentrated on rice production only and did not do off-farm work. Consequently, without sales rice income, they mainly relied on income resulting from GAP vegetable sales. Finally, dealer percentages showed negative significance regarding GM. The negative results indicate that the high percentage of dealer sales forced members to manage

their groups rigorously, because the members had to follow rules which were mostly set by dealers.

Table 2 Correlation Coefficient between Members Contribution and their Attributes

	AS	**GM**
Adjustment shipment (AS)	1	0.095
Group management (GM)	0.095	1
Gender	-0.074	0.078
Age	0.024	-0.25
Education	0.034	0.192
Household income	0.619**	-0.109
Urban job experiences	0.061	0.376
Nonfarm job experiences	0.01	0.033
Farming experiences	0.068	-0.149
GAP experiences	-0.104	0.112
Year of joining the group	-0.308	-0.113
Gap area	0.098	0.047
Rice area	0.158	-0.159
Family labor	0.465*	-0.303
Hired labor	-0.273	-0.302
Input purchase through the group	0.323	0.3
Input purchase per GAP vegetable area	0.449*	0.387*
Sales of GAP vegetables	0.461*	0.42*
Sales of rice	0.389*	-0.015
Percentage of dealer use	-0.225	-0.633**
Number of vegetable varieties	-0.113	0.158

Note: *p<0.05, **p<0.01

Source: Author's Study

Managerial orientation and willingness of farmer to contribute to the group

There are patterns of similar managerial orientation among group members. Table 3 presents the two factors affecting managerial orientation: 'sustainable development' and 'family members first'. 'Sustainable development' represents a managerial orientation with regard to the impact of the chosen farming method on the natural environment, possible income, and

expanding the scale of the GAP farm, while 'family members first' reveals ongoing concerns about the family labor force, their abilities, and the need to produce quality products.

Table 3 PCA Factor Loading on Member Managerial Orientation

	Average	SD	Factor 1 Sustainable development	Factor 2 Family member first
- I like to select a farming method that respects the natural environment	4.6	0.7	0.955	0.084
- I like to earn as much income as possible	4.7	0.7	0.904	0.296
- I like to expand the scale of the GAP farm	4.7	0.6	0.685	0.456
- I like to do reasonable management for my family's labor force and ability	4.0	0.7	0.377	0.805
- I like to make good quality agricultural products that can be pleasing to consumers	4.8	0.6	0.051	0.814
- I aim for labor-saving agriculture that takes as little time and effort as possible	4.9	0.4	0.487	0.646
- I like to sell products directly to consumers	2.1	1.0	-	-
		Eigenvalue	**2.578**	**2.029**
		Contribution rate (%)	**43.0**	**34.0**

Source: Author's Study

In Table 4, the results present the managerial orientation with regard to 'family members first', which had a positive correlation with both AS and GM. Regarding AS, if the members have a greater family labor force and higher abilities, they will try harder to adjust their production values to achieve high quality. As they believe it is necessary to produce quality products to achieve the standard of group requirement. At the same time, the members will be more willing to take an active role in group management, since effective management will provide long-term benefits. On the other hand, sustainable development was negatively correlated with GM. One reason is that these members mostly worked on their own farm: they used farming methods with concern for the impact on the natural environment and aimed to expand the scale of the GAP vegetable area so it allowed them to operate intensively on the farm. Furthermore, those members considered sustainable development simply as sufficient consumption for their family and sufficient income, rather than attempting to maximize income and profitability, or to address long-term goals.

Table 4 Correlation Coefficient between Contribution Indices and Managerial Orientation

	AS	GM
Adjustment shipment (AS)	1	0.094
Group management (GM)	0.094	1
Factor 1 (Sustainable development)	-0.123	-0.533*
Factor 2 (Family members first)	0.428*	0.402*

Note: *p<0.05, **p<0.01

Source: Author's Study

Farmers' motivation for joining the group

The primary motivations for farmers to join a group were socialization, cooperation, and initiative. In Table 5, Factor 1 demonstrates the position of farmers who felt lonely, were invited by a member, and desired to produce safe and healthy food; Factor 2 represents farmers who prefer to cooperate with other farmers; and Factor 3 refers to farmers who are inclined to initially participate in other activities.

Table 6 shows that farmers with greater initiative were more likely to adjust their production values, leading to changes or adjustments in shipping (i.e., adjust 'every time' or 'as much as possible'). At the same time, their initiative makes them less inclined to join management groups. A lack of sufficient information, knowledge, and/or experience in group management may also contribute to their hesitation.

Table 5 PCA Factor Loading on the Reasons for Joining the Group

	Average (SD)	Factor 1 Socializing	Factor 2 Cooperation	Factor 3 Initiative
I felt lonely	2.1 (1.4)	0.788	-0.387	0.184
To produce safe and healthy food	4.7 (0.5)	-0.734	0.376	0.175
Invited by members	3.0 (1.4)	-0.685	-0.395	-0.072
Average of	4.9 (0.2)	-0.505	-0.597	0.387
1) To sell GAP products,				
2) To sell products at higher price				
Impressed by other farmers' group success	4.4 (0.8)	-0.545	0.530	-0.398
To have contact with others	4.7 (0.6)	0.480	-0.109	-0.423

Table 5 (Continued)

	Average (SD)	Factor 1 Socializing	Factor 2 Cooperation	Factor 3 Initiative
Average of	4.6 (0.6)	0.461	0.402	0.383
1) To gain knowledge and skills for GAP farming				
2) To improve the farm management				
3) To save farming costs				
4) To receive government supports				
5) I sympathized with the group's philosophy				
I like to cooperate with other farmers	4.3 (0.9)	0.191	0.715	0.483
I thought that I should do social activities	3.9 (0.8)	0.183	0.150	-0.841
	Eigenvalue	**2.694**	**1.792**	**1.643**
	Contribution rate (%)	**30.0**	**20.0**	**18.0**

Note: The questions which showed high correlation were combined and the average used.

Source: Author's Study

Table 6 Correlation Coefficients between Contribution Indices and Reasons for Joining Group

	AS	GM
Factor 1 (Socializing)	0.0513	0.2291
Factor 2 (Cooperation)	0.2597	0.2032
Factor 3 (Initiative)	0.6293**	-0.4048*

Note:*p<0.05, **p<0.01

Source: Author's Study

Farmers' organizational commitment to contribute to the group

Organizational commitment was outlined as: 1) affective commitment, concerning a member's emotional attachment, or members thinking about what they want to do; 2) continuance commitment, reflecting the cost of leaving the group/organization, or their thinking about what they need to do; and 3) normative commitment, which depicts what a member feels they ought to do (Allen & Meyer, 1990, pp.1-18). The relationships between each commitment and the contribution indices, shown in Table 7, demonstrate that only the affective commitment has a significant correlation with AS. However, we can surmise that if farmers have a strong affective commitment, they will not be willing to (efficiently) adjust their production values.

Table 7 Correlation Coefficient between Contribution Indices and Organizational Commitment

	AS	GM	Organizational commitment							
			Affective		Continuance		Normative		Overall	
Adjustment shipment (AS)	1	0.0945	-0.4796		-0.0492		0.2591		-0.2248	
Group management (GM)	0.0945	1	0.3351		-0.3189		-0.0727		0.0614	
Affective commitment	-0.4796*	0.3351	1		0.4932		0.1865		0.8341	
Continuance commitment	-0.0492	-0.3189	0.4932	**	1		0.596		0.842	
Normative commitment	0.2591	-0.0727	0.1865		0.596	**	1		0.6354	
Overall commitment	-0.2248	0.0614	0.8341	**	0.842	**	0.6354	**	1	

Note:*p<0.05, **p<0.01

Source: Author's Study

Conclusions

The positive factors relating to the member contribution indices were household income, family labor, input purchase per GAP vegetable area, sales of GAP vegetables, sales of rice, farmer managerial orientation regarding 'family members first', and farmer initiative. At the same time, affective commitment was negatively correlated with the contribution index (regarding AS). Furthermore, percentage of dealer use, farmer managerial orientation with regard to sustainable development, and reasons to join a group were negatively correlated with the contribution indices (regarding GM).

Based on the results, in order to encourage group members to contribute to adjustment shipping and group management, the extension agencies should provide more information on how to improve the vegetable GAP effectively, as it encourages farmers' willingness to contribute to group activities, especially in adjusting the shipment plan. Moreover, the agencies should help members to minimize the percentage of dealer usage by recommending new market channels or creating new forms of distribution, such as within markets in nearby villages.

Finally, as this study uses cross-sectional data in a case study of a vegetable growing group, it might not provide enough information to generalize to all such groups in Thailand. In addition, different times might affect different psychological states of members. Thus, further research should use time series data and select a sample involving several categories of farmers' groups.

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