Global Journal of Sociology: Current Issues

Volume 07, Issue 2, (2017) 95-103

www.gjsoc.eu

The effect of community participation on conflict management

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Suggested Citation:
Apipaalakul, C., Jaimooka, E. & Ngang, K. T. (2017). The effect of community participation on conflict management. *Global Journal of Sociology: Current Issues*. *7*(2), 95-103.

Received from June 05, 2017; revised from July 29, 2017; accepted from August 30, 2017.
Selection and peer review under responsibility of Mustafa Gunduz, Cukurova University, Turkey.

Abstract

This study aimed to investigate the relationship and effect of community participation and conflict management on gold mining resources in Khaochetluk sub-district, Tapkhlo district, Phichit province, Thailand. There were 224 participants derived from a total population of 1,712 who had participated in this study. Researchers employed cross-sectional descriptive research design utilizing questionnaire as an instrument to collect data. This instrument has been piloted and found to be validated after checking by three experts and reliable with high value of Cronbach's alpha coefficient. The obtained data was analyzed not only using descriptive statistics such as percentage, mean score, standard deviation but also inferential statistics such as Pearson product moment correlation, stepwise multiple linear regression. Findings of the study indicated that both variables namely community participation as well as conflict management were at moderate level. Additionally, Pearson correlation coefficients revealed that community participation had significant, positive, and moderate relationship with conflict management (r = 0.456) at the significant level of 0.01. Consequently, result of this study revealed that there were two significant predictors toward conflict management. These two significant predictors were 'involvement' and 'empowerment' components of community involvement which have successfully contributed 20.1 percent variance of conflict management at 0.01 significant level. Qualitative findings indicated that an establishment of platform to provide opportunities for community participation. An appointed committee needs for monitoring purposes. This study is able to promote the importance of community participation in conflict management.

Keywords: Community participation, conflict management, gold mining resources.

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1. Introduction

Conflicts within groups or organizations may lead to serious bond-breaking relationships. However, the rise of conflicts itself is a surprising act of constructive simulation and strong support. It is a common issue and natural phenomenon for conflicts to arise within a community. It is not possible for an individual to avoid conflicts like those of caused by two or more parties in attempt to hold onto a similar desire. In this case, both parties do not allow one another to get what one needs and tries to prevent the others to achieve the same needs (Promsri, 2007).

There are varying methods to solve conflicts and deal with problems, including conflict management. Conflict management is one of the most effective methods widely utilized and accepted as a required standard and highly needed by individuals to learn of managing conflict. Individuals may take past successful experiences from various sources to adapt the conflicting situations, solve the complications gradually and successfully. Thus enhance efficiency for further development of growth and stability (Vichian, 2012). The 'Circle of Conflict' is introduced as one of the best analyzing tools for five varying conflict types namely data conflict, interest conflict, relationship conflict, structural conflict, and value conflict (Christopher, 1996).

Community participation refers to the act that enables residents or individuals related to the community to have opportunities in the participation of public activities performed as a whole. The International Association for Public Participation (IAP2) is an international association of various countries teaming up as managing directors and members of the organization to encourage and support participation between individuals of the community. There are five levels of community participation such as data information, consultation and discussion, involvement, collaboration, and empowerment (Orapin, 2007).

2. Background of the Study

The Chatree Gold mine is located 280km north of Bangkok, in the Phichit province, Thailand. The quarry is operated by Akara Mining Ltd, a wholly-owned subsidiary of the Australian company Kingsgate Consolidated Limited. The Chatree deposit is located on the eastern edge of the Tertiary Chao Phraya Basin. The deposit is located in the Loei-Petchabun volcanic belt, which represents the remnant oceanic and continental arc complexes that developed before and during the suturing of the Shan-Thai and Indochina Terranes. The deposit is associated with a volcanic centre that spans approximately 7.5 by 2.5km. The deposit consists of seven defined prospect areas and multiple open cut pits. The villages near the gold mining resources are Ban Khao Tapphannak, Ban Khao Din, Ban Jit Suea Ten, Ban Nong Ka Nhak, Ban Nikhom, Ban Khao Mor, and Ban Dai Nam Kun (Amy & James, 2014).

In 1999, after the discovery of gold in the Chatree area, a real gold rush began, with more than 100,000 prospectors coming from all over Thailand, to try their luck in this area. Many of them lost their lives due to the dangerous circumstances while digging deep holes to reach the gold. Gold production increased rapidly, after the opening of two professional mines, the Chatree – and the Phutapfa Gold mine. Despite the opening of these professional mines, local people are still allowed to mine for gold. They can get a digging and gold washing permit from the local authorities. They are allowed to dig for soil around quarry hill under strong regulations and they have to pay a given price per bag of soil (Amy & James, 2014).

3. Problem statement

Pichit is one of the provinces in Thailand that experiencing conflicts on gold mining resources which is caused by two or more groups or parties with the similar desires for profits, a motive to make use of natural resources for benefits, and specifically involving the domination of mines where one party benefits and the others get negatively affected. As a result, the community would experience different

conflict resolutions which would lead to disputes and accusations (Independent Organization of Environment and Health, 2012).

Khaochetluk sub-district, Tapkhlo district, Pichit province consists of 12 villages. Some of the villages are seriously affected by the construction of mines which resulted in health and hygiene concerns, the quality of living, water resources with contaminants, loud distractions and dust from quarry, destroyed ecosystem, and most importantly, big disputes and conflicts between individuals who benefit from the construction of mines and those who are affected.

The issue of Thailand's largest gold mine in the Chatree area needs to prove that it is not the source of arsenic and manganese contamination in nearby villages. The Australian-run mine, located 280km (174 miles) north of Bangkok in central Phichit province was ordered to stop operations temporary. Output has been suspended for up to 30 days while inquires are conducted and the suspension could be extended if the miner fails to come up with evidence within that time (Amy & James, 2014).

Pornthip Rojanasunand, director-general of the Central Institute of Forensic Science of the military government's investigation team tested the blood of 700 villagers and more than 300 villagers out of 700 tested positive for arsenic and manganese, including children. However they are not certain about the contamination comes from the mine or not. The mining company was not responsible for any arsenic or manganese present in this area due to the company had commissioned an independent toxicology study to be carried out with Thailand's Mahidol University (Amy & James, 2014).

From the findings from continuous and conservative observations by both governmental and private sector staff indicated that some intervals of the environmental survey and monitoring process, thermometric values were found to be over the standards. Therefore, those who are affected by the construction of gold mines in Pichit province have submitted their complaints to the National Council for Peace and Order (NCPO) and requested this issue for debate (Complaint report to NCPO, 2014).

4. Research Objectives

According to the conflicts that have been stated above, researchers are interested to investigate the matters involving community participation that affecting conflict management, in relation to gold mining resources of Khaochetluk sub-district, Tapkhlo district, Pichit province. The significance of this study is to provide awareness to industrial province officers as well as sub-district organizational directors the importance of community participation and conflict management. Hence these key leaders would take into account as a processing development plan and enable to solve and take care of the conflict efficiently in future.

The following are the main objectives of this study:

a) To study the community participation level and conflict management on gold mining resources in Khaochetluk sub-district, Tapkhlo district, Pichit province.

b) To study the relationship between the community participation level and conflict management.

c) To investigate the predictors of the conflict management.

d) To conclude the provided suggestions to improve conflict management.

5. Research Methodology

This study employs survey questionnaire and qualitative as methods to collect quantitative data. A cross-sectional descriptive research design was utilized. This method benefits this study in terms of obtaining data more efficiently as time, energy and costs could be minimized (Sekaran, 2006),

provides an excellent means of measuring attitudes and orientation in a large population which can, therefore, be generalized to a larger population (Babbie, 2002). The total population of this study comprised of 1,712 individuals as head of the families from seven villages namely Ban Khao Tapphannak, Ban Khao Din, Ban Jit Suea Ten, Ban Nong Ka Nhak, Ban Nikhom, Ban Khao Mor, and Ban Dai Nam Kun of Khaochetluk sub-district, Tapkhlo district, Pichit province (Report of Health Promotong Hospital of Khaochetluk sub-district, 2014). The required sample size is 224 by employing Arun Jirawattanakul's (2008) formula as shown below.

$$n = \frac{NZ^2{}_{\alpha/2}\sigma^2}{e^2(N-1)+Z^2{}_{\alpha/2}\sigma^2}$$

The sampling method used in quantitative method is simple random sampling which is considered appropriate, accurate, and efficient as it provides more information with a given sample size. In addition, a total of 19 informants were selected to involve in focus group interview, utilizing purposive sampling technique. This focus group consisted of seven heads from seven villages, two representatives from local administrative organization, three representatives from public sectors, and seven selected women leaders.

The survey questionnaire instrument was administered in Thai language to ensure that respondents were clear about the statements. There were 57 items in three sections. Section A of the questionnaire was comprised of six items intended to gather information regarding demographic factors of the respondents. These are six items which included information pertaining to their personal background such as age, gender, marital status, education level, monthly income, and job position. Section B specifically designed to gauge the information of community participation. Specifically, all the five domains of community participation were measured equally using 5 items, giving a total of 25 items. Respondents are required to give responses toward their community participation in this section. A total of 26 items were contained in Section C which used to measure the information about conflict management. They are five items of data information, five items of benefit, six items of relationship, five items of structure, and five items of social values, giving a total of 26 items. A five-point Likert scale was used in Section B and C. On top of that, there were 10 interview questions used to probe information related to the connection between the two studied variables from the 19 informants who were involved in focus group interview.

This questionnaire was then sent to a panel of experts for comments and feedbacks. The panel of experts was selected using the criteria based on their expertise in the area of public health administration, conflict management, as well as research and evaluation, for validation purpose. The panelist chosen included three professionals from various fields as stated before. From the feedbacks returned by the panel, some modifications were made to the original instrument.

Pilot testing of the instrument was carried out to 30 people who are staying between 3km to 5km away from the gold mining resources. They were not the samples of the actual study because the actual study samples are those who stay within 3km from the gold mining resources. They were chosen as their structure and population are the same as the actual study. To improve the quality of the items in the instrument, they were also asked to give suggestions and comments on the items in the instrument. Revision was made based on the suggestions and feedback. It could be concluded that the instrument was reliable and good to use as the Cronbach alpha value indicated that all the research variables like community participation and conflict management had high Cronbach alpha value as 0.75 and 0.78 respectively.

Before researchers started to collect data, researchers submitted an official letter asking for permission from head of the district local administrative organization. The quantitative data collection was conducted from 5th April to 5th May 2015 while focus group interview was carried out on 9th May 2015. All the 224 distributed questionnaires have been successfully collected with the assistance of

public health officers, giving a response rate as 100 percent. Descriptive statistic including mean score and standard deviation were utilized in this study. Furthermore, inferential statistic like Pearson's correlation coefficients used to explain the relationship between the community participation and conflict management. Finally stepwise multiple regression analysis was used to determine the community participation that affecting the conflict management in gold mining resources.

6. Profile of the Respondents

In this study, a vast majority of the heads of the family are female that is 120 (53.60%). Most of the respondents are at the age group of 51 to 60 years old. This indicates that the majority of the respondents in this study were from the older age generation. Most of them have married (75.90%) and their educational level is just graduated from primary school (46.90%). Majority of them work as labor (47.80%) and have an average income as lower than 10,000 baht per month.

7. Results

7.1. Community participation

Table 1 shows the mean scores and standard deviations of each domains of community participation in gold mining resources. As indicated in Table 1, the mean score for the five domains of community participation ranged from 1.63 to 1.75. Three domains of community participation were at moderate level while the other two domains were at low level. The consultation and discussion domain was found to be at highest value ($\bar{x}$ = 1.75, *SD* = 0.47). The next highest was collaboration/cooperation domain ($\bar{x}$ = 1.70, *SD* = 0.49). This is followed by involvement domain ($\bar{x}$ = 1.69, *SD* = 0.50) and empowerment domain ($\bar{x}$ = 1.64, *SD* = 0.47). The lowest mean score was data information domain ($\bar{x}$ = 1.63, *SD* = 0.50). The overall community participation was at moderate level ($\bar{x}$ = 1.68, *SD* = 0.42).

Table 1. Community participation level

Community participation	$\bar{x}$	*SD*
Consultation and discussion	1.75	0.47
Collaboration/Cooperation	1.70	0.49
Involvement	1.69	0.50
Empowerment	1.64	0.47
Data information	1.63	0.50
Overall community participation	1.68	0.42

7.2. Conflict management

Table 2 presents the mean scores and standard deviation of the five domains of conflict management. As shown in Table 2, the mean scores range from 1.75 to 1.85. This indicates that all the five conflict management domains were moderately practice. This shows that, the most frequently practice of conflict management was social values ($\bar{x}$ = 1.85, *SD* = 0.56). This is followed by benefit domain ($\bar{x}$ = 1.84, *SD* = 0.62), relationship domain ($\bar{x}$ = 1.80, *SD* = 0.55) and structure ($\bar{x}$ = 1.80, *SD* = 0.58). The conflict management style that least frequently practised was news and data ($\bar{x}$ = 1.75, *SD* = 0.55). Therefore, based on Table 2, it can be concluded that all the conflict management domains were at moderate level.

Table 2. Conflict management

Conflict management	$\bar{x}$	*SD*
Social values	1.85	0.56
Benefits	1.84	0.62
Relationship	1.80	0.55
Structure	1.80	0.58
News and data	1.75	0.55
Overall conflict management	1.81	0.47

7.3. Correlation between community participation domains and conflict management

Table 4 presented the Pearson correlation coefficient between the community participation domains and conflict management. Based on de Vaus's (2002) interpretation of correlation coefficients in Table 3 the correlation results between the five community participation domains and conflict management showed a significant relationship ($p<0.01$), with strength of association moderate to substantial and positive.

Table 3. Designation strength of association based on size of correlation coefficients

Strength of association	Negative	Positive
Low to moderate	-0.29 till -0.10	0.10 till 0.29
Moderate to substantial	-0.49 till -0.30	0.30 till 0.49
Substantial to very strong	-0.69 till -0.50	0.50 till 0.69
Very strong	-0.89 till -0.70	0.70 till 0.89
Near perfect	-0.99 till -0.90	0.90 till 0.99
Perfect relationship	-1.00	1.00

As indicated in Table 4, conflict management was significant, positive and moderate to substantial correlated with involvement domain ($r = 0.413$; $p<0.01$), empowerment domain ($r = 0.404$; $p<0.01$), collaboration/cooperation domain ($r = 0.403$; $p<0.01$), consultation and discussion domain ($r = 0.387$; $p<0.01$), and data information domain ($r = 0.340$; $p<0.01$). This means that, to a moderate to substantial extent, an increase in community participation domains namely involvement, empowerment, collaboration/cooperation, consultation and discussion, and data information is associated with an increase in conflict management.

Table 4. Correlation coefficient between community participation and conflict management

Conflict management	r-value	p
Involvement	0.413**	0.001
Empowerment	0.404**	0.001
Collaboration/Cooperation	0.403**	0.001
Consultation and discussion	0.387**	0.001
Data information	0.340**	0.001

7.4. Significant predictors for conflict management

To identify the significant predictor for conflict management on gold mining resources, a stepwise regression and analysis was carried out. In this analysis, the five community participation domains were treated as predictor variables, while conflict management was treated as the dependent variable. The purpose of estimating this regression equation was to identify the community

participation domains that have significant impact on conflict management on gold mining resources that is the community participation domain which constitute the predictors for conflict management.

In this analysis, the size of the standardized coefficient (β) directly indicates the importance of these predictors relative to one another. In the context, the involvement domain (β = 0.258) was the most important predictor, followed by empowerment domain (β = 0.233), in that order. As shown in Table 5, the summary statistics of the estimated regression equation show the variables for which the coefficients are statistically significant.

The estimated regression equation was significant at 0.01 ($p<0.01$), implying that only two predictor variables that have an impact on conflict management; thereby qualifying these to be the predictors for the latter. In brief, these two variables have a linear relationship with conflict management. The adjusted R^2 being 0.201 in Table 5 shows that the impact of involvement domain was 17.0 percent and empowerment domain was 3.1 percent. In conclusion, the two variables account for 20.1 percent of variation in the dependent variable. The following multivariate linear regression model shows the relationship between the predictor variables on the dependent variable.

Table 5. Multiple regression of organizational climate on personnel conflict management

Conflict management	B	β	t	R^2	Change of R^2	p
Involvement (X_1)	0.243	0.258	3.206	0.170		0.002
Empowerment (X_2)	0.236	0.233	2.894	0.201	0.031	0.004

In conclusion, the two variables account for 20.1 percent of variation in the dependent variable. The following multivariate linear regression model shows the relationship between the predictor variables on the dependent variable.

Unstandardized score : $\widehat{Y} = 1.009 + 0.243(X_1) + 0.236(X_2)$

Standardized score : $\widehat{Y} = 0.258(X_1) + 0.233(X_2)$

7.5. Suggestion to resolve conflict

Data derived from the focus group interview regarding suggestions to resolve conflict have been concluded as below:

(a) The government must provide citizens with reliable facts and information. The facts and information must be accurate, right, and continuous.
(b) The building of relationship between the government and citizens or among the citizens themselves can be done through a public meeting held to exchange ideas and opinions upon specific matters.
(c) The benefits of the entire process must be in a win-win solution for government, citizens, and private organizations neither of the later stated parties being much affected.
(d) If there were to be changes on the community life styles, gradual changes must happen along with acceptance and patience in order to avoid any impacts.
(e) Empowerment of the citizens involves the provision of adequate knowledge on community participation and the encouragement of data to support the establishment of organizations or networks.

Qualitative findings can be summarized as follows:

- Establish platform for meeting among those parties to share ideas of the impacts of gold mining.
- Give more information to the residents who are staying within 1 to 3km away from the gold mining.
- Government should provide health fund to those residents being affected.

- Residents also must have their opportunities to participate in the process of decision making.
- An appointed committee which consisted of three parties such as head of village, public health officers, and the representatives from the gold mining resources to monitor the pollution conditions.

8. Discussion

On this line of reasoning, this study was conducted to examine the effect community participation on conflict management at gold mining resources. The findings of this study revealed that three domains of community participation were at moderate level while the other two domains were at low level. This finding is consistent with past research findings from Pakdee (2014), Nakaret (2013), and Natapong (2013) findings. Both of the past researchers Pakdee and Nakaret found the community participation levels were moderate but Natapong found the community participation was low. Pakdee carried out his study related to community participation in village environment whereas Nakaret studied on community participation in forest national resources under the village surrounding. However this finding was found to be contradicted with Srisuwan (2010) finding. Srisuwan found the community participation was high.

In addition, result of this study showed that all the conflict management domain were at moderate level. This result was supported by Yuthana (2013) and Kalaya (2012) findings but not in accordance to Mali (2013) findings. Yuthana and Kalaya found the conflict management was at moderate level but Mali found the conflict management was at high level.

Additionally, results of this study showed that to a moderate to substantial extent, an increase in community participation domains namely involvement, empowerment, collaboration/cooperation, consultation and discussion, and data information is associated with an increase in conflict management. Therefore these findings found to be not in line with all the past researches. Past researcher such as Nitide (2013), Somsaman (2005), and Chotechuang (2013) found the association strengths were strong.

According to the results from stepwise regression analysis, there are two community participation domains which have predictive power of 0.201 at significantly level as 0.01. Therefore the two community participation domains namely involvement and empowerment are able to predict the conflict management. The evidence from this study shows that organizational leaders should pay prior attention to these two significant predictors since these two predictors are able to explain 20.1 percent variance of conflict management.

In other word these two independent variables can used to predict the conflict management due to the fact that the community participation domains indicated the performance of the executive and process of resolving disputes between residents and gold mining owner. This finding was found to be consistent with Kalaya (2012), Kitisak (2013), and Surasak Langla's(2013) findings. Kalaya found that involvement is able to explain 38.01 percent variance of conflict management while Kitisak found that involvement is able to explain 52.25 percent variance of conflict management. Finally Surasak found that empowerment is able to explain 63.39 percent variance of conflict management.

Acknowledgements

This project was made possible with funding from Faculty of Public Health, Khon Kaen University.

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