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## THE CONFLICT MANAGEMENT STYLE ADOPTED BY THE SUBCONTRACTORS OF HONG KONG BUILDING PROJECTS

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**ABSTRACT:** It is a common practice in Hong Kong for the main contractors of local building projects to sublet most of the work to subcontractors. Consequently their roles have gradually transformed from a constructor to a manager of subcontractors. The outcomes of a project therefore depend heavily on the subcontractors' performance. However, most of the subcontractors complain that they are unable to efficiently and effectively operate due to site coordination problems, such as inaccurate site reference lines, caused by main contractors. The site problems may consume significant amounts of resources if practical solutions cannot be agreed by the project participants early enough. Rahim Organizational Conflict Inventory-II (ROCI-II) model was developed by M.A. Rahim that measure five types of conflict management style including Integrating, Obliging, Dominating, Avoiding and Compromising. This paper presents the questionnaire survey based on the ROCI-II model to rank the preference on the conflict management style adopted by the project representatives of the subcontractors in handling the site coordination problems and its impact to the time used to agree the solutions to the different types of site coordination problems with main contractor. The survey results show that most of the subcontractors' project representatives preferred to adopt the Compromising style to tackle the site coordination problems and the time used to agree the solutions with main contractor was influenced by the conflict management style adopted.

*Keywords:* Subcontractor; Conflict management; Site coordination problems

### 1. INTRODUCTION

#### 1.1 Construction industry today

Construction industry is one of the main pillars of Hong Kong's economy. It employed seven per cent of approximately three million working population and contributed to 2.6 per cent of Hong Kong's GDP according to government statistics for 2006 and 2007 respectively [1]. As the prosperity of the economy of Hong Kong and its growth is heavily dependent upon the state of the construction industry, construction industry can be regarded as a barometer of the Hong Kong's economy [2].

Hong Kong construction industry is dominated by a small number of large local contractors and overseas contractors. A substantial number of companies are being both developers and contractors. Due to fluctuation of workload, there is a high level of subcontracting in the projects. Most of the local construction companies are small in size, about 97 per cent of them had less than HK\$10 million gross value of construction work performed in 2004 [3]. The majority of them are performing subcontractor role in the building projects.

#### 1.2 Subcontracting system

Subcontracting system plays a vital role in the local construction industry as it is a strategy to deal with long-term environmental uncertainties and to buffer the technical core of main contractors against short-term contingencies [4]. According to the government statistics for 2007, labour-only subcontractors and fee subcontractors contributed 24 per cent and 46 per cent of the gross value of construction work performed in 2007 respectively [1].

In Hong Kong building projects, main contractors normally divide the project into work packages by trade and sublet them to the first layer trade subcontractors. The first layer trade subcontractors further divide their work packages into smaller packages and sublet them to the second layer subcontractors. The subletting process may sometimes go down several more layers and can be characterised as multilayered subcontracting. A survey conducted by Cheng and Law [5] shows that 74 per cent, 15.6 per cent and 4.2 per cent of the respondents were usual second layer, third and fourth layer subcontractors. Thus the role of main contractor has gradually transformed to a manager of subcontractors that actually carrying out the work for the project. Frisby [6] defined the management of the subcontractors as one of the key functions of the main contractor. The performance of the

subcontractor is one of the most important factors governing project performance.

This approach has been in operation for a long period of time in Hong Kong, however, it also creates problems, such as greater demand in coordination work and high mobility of the worker causing poor workmanship. In the recent years, there are increasing complaints from the subcontractors that they cannot perform their site work efficiently and effectively due to poor site coordination by main contractors. The result of a questionnaire survey to subcontractors shows that mean productivity wasted due to site coordination problems was 35.10 per cent [7]. Thus practical solutions to the site coordination problems must be agreed early enough to avoid unnecessary impact to their projects. This paper presents a survey to rank the preference of conflict management styles adopted by the subcontractors based on Rahim Organizational Conflict Inventory-II (ROCI-II) model and how it affects the efficiency of solving the site coordination problems in the Hong Kong building projects.

## 2. RESEARCH METHODOLOGY

### 2.2 Conflict Management Style

Conflict can be handled with various styles of behaviour. Follett [8] proposed the three types of style to deal with conflict namely Domination, Compromise, and Integration. Blake and Mouton [9] established the first two-dimensional model of conflict management based on concern of people and concern for production. Thomas [10] further developed the model to include satisfy of other concerns (cooperativeness) and satisfy of own concerns (assertiveness). Rahim [11, 12] modified the model and defined the following five conflict management styles based on the balance between the concerns for others and concerns for self.

- a. Integrating:  
This style refers to a win-win outcome that conflicting parties adopt an attitude of openness to find a solution through exchange of information that can satisfy all parties involved.
- b. Obliging:  
This style refers to low self concern but high concern to others. It implies a willingness to sacrifice own gain in order to reach a settlement for the conflict.
- c. Dominating:  
This style refers to satisfy the personal own needs by scarifying others. This style is appropriate when the issue involved in a conflict that is important to the party.
- d. Avoiding:  
A person adopting this style would satisfy neither his/her own concern nor the concern of the other party and prefer to defer the discussion to avoid confrontation.

- e. Compromise  
This style is associated with give-and-take or sharing where both parties give up something to make a mutually acceptable decision.

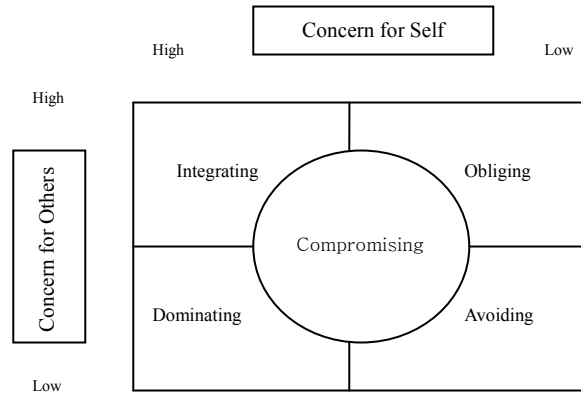


Figure 1: Rahim's Model of Conflict Management Styles [13]

### 2.1 Site Coordination Problems

Nineteen common site coordination problems caused by the main contractors that would adversely affect subcontractors' performance were identified through literature review and advices from experienced industrial practitioners [14]. According to their nature, these problems were classified into eight groups of problems critical to the successful site coordination of subcontractors work:

- a. Construction Information;
- b. Working Programme;
- c. Preparation for Work Place;
- d. Interfacing Work;
- e. Material Support;
- f. Plant Support;
- g. Response to Site Problems; and
- h. Access to Work Place.

### 2.3 Questionnaire

Questionnaire survey method was adopted in this study. The questionnaire was designed based on the Rahim Organizational Conflict Inventory-II model [15] and it consisted of three parts. Questionnaires were distributed to subcontractors of building projects through private relationship.

Part One of the questionnaire was used to collect the background information of the respondents who were working in subcontractors for building projects. The respondents were reminded to complete the questionnaire based on their current projects or the projects with the highest contract sum if they were handling several projects at the same time.

In Part Two, respondents were requested to assign a score from 0 (never do this) to 10 (do it every time) with

a 0.5 interview to the 35 short questions designed based on ROCI-II model that reflected their management style adopted in handling the site coordination problems with main contractor. Seven questions for each conflict

management style were randomly listed in the questionnaire as shown in Table 1.

**Table 1.** Questions to assess the Conflict Management Style

Question	Style	Description	Mean Score
1.	I	I try to investigate an issue with the Main Contractor to find a solution acceptable to all.	7.30
2.	O	I generally try to satisfy the needs of the Main Contractor.	6.81
3.	A	I attempt to avoid being 'put on the spot' and try to keep my cool with the Main Contractor.	5.33
4.	I	I try to integrate my idea with those of the Main Contractor to come up with a decision jointly.	7.22
5.	C	I give some to get some.	8.11
6.	I	I try to work with the Main Contractor to find solutions to a problem which satisfy our expectations.	6.89
7.	A	I usually avoid open discussion of my differences with the Main Contractor.	4.96
8.	D	I usually hold on to my solution to a problem.	4.45
9.	C	I try to find a middle course to resolve a deadlock.	7.63
10.	D	I use my influence to get my ideas accepted.	4.59
11.	D	I use my authority to make a decision in my favour.	4.82
12.	O	I usually accommodate the wishes of the Main Contractor	6.52
13.	O	I give in to the wishes of the Main Contractor.	6.74
14.	C	I give in some points in exchange for others.	7.78
15.	I	I exchange accurate information with the Main Contractor to solve a problem together.	6.15
16.	O	I sometimes help the Main Contractor to make a decision in his favour.	5.93
17.	O	I usually allow concessions to the Main Contractor.	6.37
18.	D	I argue my case with the Main Contractor to show the merits of my position.	4.45
19.	C	I try to play down our differences to reach a compromise.	7.11
20.	C	I usually propose a middle ground to break a deadlock.	7.78
21.	C	I negotiate with the Main Contractor so that a compromise can be reached.	7.48
22.	A	I try to stay away from disagreement with the Main Contractor.	5.26
23.	A	I avoid an encounter with the Main Contractor.	5.85
24.	D	I use my expertise to make a decision in my favour.	4.67
25.	O	I often go along with the suggestions of the Main Contractor.	6.30
26.	C	I use "give and take" so that a compromise can be made.	6.44
27.	D	I am generally firm in pursuing my side of the issue.	4.07
28.	I	I try to bring all our concerns out in the open so that issues can be resolved in the best possible way.	6.82
29.	I	I cooperate with the Main Contractor to come up with decisions acceptable to us.	7.04
30.	O	I try to satisfy the expectations of the Main Contractor.	4.00
31.	D	I sometimes use my power to win a competitive situation.	6.07
32.	A	I try to keep my disagreement with the Main Contractor to myself in order to avoid hard feelings.	5.70
33.	A	I try to avoid unpleasant exchange with the Main Contractor.	5.93
34.	A	I generally avoid an argument with the Main Contractor.	4.81
35.	I	I try to work with the Main Contractor for a proper understanding of a problem.	7.78

**Note:** Style – Conflict management style

- A-Avoiding
- C-Compromising
- D-Dominating
- I-Integrating
- O-Obliging

Part Three was used to assess the efficiency of solving the site coordination problems. The questions were not designed to measure the actual time used to solve the problems because the nature of a problem such as complexity and number of parties involved would affect the time spent to finalize the solution. The efficiency in this study was reflected indirectly by measuring how frequent the problems could be settled within the time expected by the subcontractors. Thus the questionnaire requested the respondents to rate from 0 (never happen) to 10 (happen in every site coordination problems) with a 0.5 interval to the eight groups of site coordination problems to represent their views on the frequency on whether these problems could be solved within their expected time frame.

### 3. DATA ANALYSIS

#### 3.1 Type of Respondents

Twenty-seven valid replies were received. The respondents are the project officer or similar position of the subcontractors of building projects. Their mean working experience in construction industry is around nine years. Around ninety per cent of them possess relevant diplomas or higher qualifications.

#### 3.2 Preference on Conflict Management Style

Table 2 summarizes the mean scores assigned by the respondents for each set of conflict management style question in a descending order of priority. In the 10-point scoring scale, 5 represents a management style that fairly frequently adopted by the subcontractors to handle the site coordination problems with main contractor in their projects. Four out of the five management styles have a mean score higher than 5.

**Table 2.** Mean Score for Conflict Management Style

Conflict Management Style	Mean Score
Compromising	7.48
Integrating	7.03
Obliging	6.39
Avoiding	5.41
Dominating	4.43

Compromising is the most common style adopted by the respondents. This indicates that subcontractors are ready to give up something such that a mutually

acceptable solution for the problem can be achieved as soon as possible [15]. The main reason is that workers of subcontractors in the local building projects are paid on daily basis. Late to solve site problems can consume significant amount of subcontractors' manpower.

Integrating and Obliging are the second and third preferred management styles adopted by subcontractors respectively. These two management styles demand high concern to main contractor which reflects that subcontractors desire to maintain good long-term relationships with main contractors. Long-term relationship a key ingredient required to cultivate the mutual trust between main contractors and their subcontractors, which can significantly improve their performances [16]. Main contractor also evaluate subcontractors' attitudes towards conflicts which is one of the essential considerations to commit long-term co-operation plan with them.

Timely completion of a project is frequently regarded as a major criterion of measuring project success [16]. Thus even for very complicated problems that solutions cannot be agreed easily, subcontractors would fairly prefer to adopt the Avoiding style to postpone the discussion indefinitely.

Dominating has the lowest mean score and it is lower than 5. This conflict management style leads to a win-lose outcome that seriously deteriorate the relationship with main contractor. So subcontractors seldom actively force a preferred solution without taking into account of the interest of the main contractor.

#### 3.3 Efficiency of Problem Solving

The mean score rated by the respondents for each type of site coordination problems is summarized in Table 3 in an ascending order of priority. In the 10-point scoring scale, 5 represents that the actual time used to solve the site coordination problems fairly frequently exceed the time expected by the respondents. Thus the score can reflect how efficient the problems were resolved.

**Table 3.** Mean Score for Site Coordination Problem

Site Coordination Problem	Mean Score
Working Programme	3.20
Construction Information	4.13
Material Support	4.30
Preparation for Work Place	4.54
Access to Work Place	5.39
Plant Support	6.54

Response to Site Problems	6.74
Interfacing Work	7.15

Four out of the eight types of problems have a mean score lower than 5. These problems could normally be solved more efficiently than the others because the process to formulate the solutions for them involved lesser parties.

Construction Programme has the lowest mean score because it is the duty of the subcontractors to organize their work to suit the programme prepared by main contractor in accordance with the contract conditions. Thus main contractor have the absolute authority to revise the project programme and the problems can thus be settled efficiently.

Due to high land price in Hong Kong, project programme are normally very tight. Subcontractors have already got used to perform their work with little time to digest the construction information. As a result, even though the solutions for the problems may not be too comprehensive, subcontractors are still willing to proceed their work based on industrial practices.

In Hong Kong, most domestic subcontractors are employed on a labour-only contract basis. Construction materials are provided and delivered to the work places by main contractor. The problems related to material support basically can be solved easily if main contractor want to tackle it. However, its score is only the third lowest because some main contractors would also sublet the material delivery to subcontractors that complicated the problem.

It is not easy for the subcontractors to justify a claim to main contractor for the loss due to unsatisfactory working environment. Subcontractors would agree to commence their site work as long as main contractor provided the basic provisions such as power and water supply etc and a reasonable tidy site.

The time needed to settle the other four types of problem may not be controllable because the problem solving process is more complex. For instance, design team's involvement is essential to have a timely response to the unforeseen site problems. Construction plant supports and access provisions to work place have to serve several subcontractors at the same time. It is not easy to generate a problem solving proposal with new plant operation schedule and access route to work place etc. that able to fulfil the interests of all subcontractors involved.

The multilayered subcontracting system in Hong Kong has imposed additional difficulties to the situation. The survey conducted by Lai [17] shown that the number of subcontract packages in the typical local building construction projects ranged from 17 to 54. Main contractors' problems solving proposal has to pass through several levels before reaching the subcontractors that actually carrying out the works. This may causes

unnecessary delay due to long chain of communication path.

The score for Interfacing Work is the highest and its score is higher than 7. This demonstrates that the time used to solve this type of problem very frequently exceeds the expectation of the respondents.

### 3.3 Influence of the preference to efficiency

According to the highest mean score to the conflict management style, the respondents can be divided into two groups: Compromising-preferred Respondent and Integrating-preferred Respondent. Table 4 summarizes the mean score rated by these two groups of respondent for the conflict management styles.

Seventeen out of the 27 replies are Compromising-preferred Respondent and the others are all Integrating-preferred Respondent. No respondent adopted the Obliging, Avoiding or Dominating style as the top preference in solving the site coordination problems. These two groups of respondent have the same order of preference to the other three conflict management styles.

**Table 4.** Mean Score for Conflict Management Style by Compromising-preferred Respondent (C) and Integrating-preferred Respondent (I)

Conflict Management Style	Mean score	
	C	I
Compromising	7.88	6.79
Integrating	6.80	7.41
Obliging	6.28	6.69
Avoiding	5.51	5.23
Dominating	4.41	4.47

Table 5 summaries the mean score for each type of site coordination problem rated by the two groups of respondent. It is found that the preference on Compromising style or Integrating style has no influence to the overall order in terms of efficiency in solving the eight types of site coordination problem.

**Table 5.** Mean Score for Site Coordination Problems by Compromising-preferred Respondent (C) and Integrating-preferred Respondent (I)

Site Coordination Problem	Mean score	
	C	I
Interfacing Work	7.18	7.10
Response to Site Problems	6.94	6.40
Plant Support	6.91	5.90
Access to Work Place	5.53	5.15
Preparation for Work Place	4.41	4.75
Material Support	4.03	4.75
Construction Information	3.94	4.45

Working Programme	3.06	3.45
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The impact of the preference of conflict management style to the efficiency of solving each type of site coordination problem is analyzed by means of D values in Table 6. D is the difference between the mean score rated by the two groups of respondent. The higher the absolute D value, the greater will be the influence to the problem solving process. The analysis shows that the conflict management style preference has greater influence to the problems related to plant support and material support. Interfacing work is the least affected problem.

**Table 6.** Difference of the Mean Score for Site Coordination Problems by Compromising-preferred Respondent (C) and Integrating-preferred Respondent (I)

Site Coordination Problem	D
Plant Support	1.01
Material Support	-0.72
Response to Site Problems	0.54
Construction Information	-0.51
Working Programme	-0.39
Access to Work Place	0.38
Preparation for Work Place	-0.34
Interfacing Work	0.08

Plant Support, Response to Site Problems, Access to Work Place and Interfacing Work have positive D values. This means that adopting Integrating style can improve the efficiency of solving these types of problem and it is vice versa for adopting the Compromising style to the other types of problem of which have the negative D values.

#### 4. CONCLUSIONS

Due to the rapid development in terms of size and complexity of Hong Kong building projects, there are increasing complaints from subcontractors that they cannot perform efficiently and effectively due to site coordination problems caused by main contractor. The problems have to be solved efficiently in order to minimize the impact to the project.

A questionnaire survey based on Rahim Organizational Conflict Inventory-II model [15] was conducted to rank the preference of the conflict management style adopted by the subcontractors and investigate its relationship with the efficiency in solving the eight types of common site coordination problems with main contractor.

The survey result shows that about 63 per cent of the respondents rank Compromising as the most preferred style adopted to solve the problems. This reflects that most of the subcontractors are ready to give up something to enable the problems can be solved efficiently and maintain long-term good relationship with main

contractor. Site coordination problems related to interfacing work is the most difficult type of problem to solve as it normally affects the main contractor as well as several subcontractors at the same time. The conflict management style adopted by the subcontractors is found to be one of the essential factors affecting the efficiency in solving the site coordination problems. It has different degree of impact to problems of various natures.

This survey has attempted to review the relationship between conflict management style and the efficiency in solving the site coordination problems. The study can be elaborated in two directions. The first one is to investigate the influence of the conflict management style to the other aspect of site management work such as site waste and quality control etc. Another one can be the analysis of the other essential factors controlling the efficiency of solving the site coordination problems.

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