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1. Introduction

The construction site manager, which is referred to as the CSM hereafter, is a key actor in the construction phase to cope with various kinds of dynamic resource constraints and to fulfill required project goals. In order to achieve the best project outcomes from his/her subordinates, the CSM has to be an expert in utilizing proper leadership styles in on-site workforce management.

Many leadership studies have been conducted in the manufacturing industry, but a little is known in the construction industry. There is a gap between leadership theory and its application in construction practice.

In this paper an attempt is made to investigate current practices in leadership styles of CSMs in building construction projects in Thailand.

2. Model Development

(1) Definition of leadership

There are many definitions of the leadership. In this study the leadership is defined as a process of social interaction between the leader and his or her subordinates, in which the leader seeks to influence his or her subordinates to achieve the objective of the organization (Petzell et al, 1991).

Figure 1 represents research model in this study. The model consists of demands, behavior, and effectiveness of the leadership.

The objectives of this paper are to study what leadership styles are taken and what is effectiveness of each leadership style.

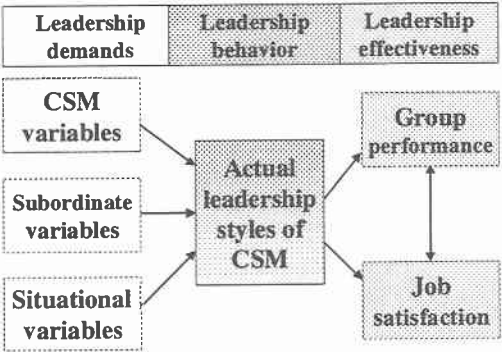


Figure 1. Research model for this study

(2) Model composition

Hersey and Blanchard (1982) and others claim that leadership (L) is a dynamic process, which is a function of the leader (l), the follower (f), and other situational variables (s):  $L = f(l, f, s)$ . Thus, these three components compose the leadership demand.

For the leadership behavior, the actual leadership styles are assumed to be categorized into the four styles: directive, supportive, participative, and achievement-oriented. This notion is adopted through the Path-Goal Leadership Questionnaire by Indvik (1988), which is based upon the work of House and Dessler (1974) and House (1976).

There is little agreement on definition and measurement of the leadership effectiveness (Cameron and Whetten 1983). Fiedler (1967) employs the group performance on the group’s primary task. Stogdill (1974) claims that performance, integration, and job satisfaction are the criteria to measure the effectiveness. Since the definition of leadership in this study emphasizes social interaction between the leader and his or her subordinates, the group performance and job satisfactions of the CSM’s immediate subordinates are employed as measures of the leadership effectiveness.

3. Conduct of Survey

Due to economic slowdown in Thailand, there is currently a limited number of on-going building construction projects. Thus, there are not many similar project sites in terms of contract value, project duration, percentage of completion, and so on. By using the non-probability approach for cross-sectional survey, 23 ongoing building construction sites were selected as target groups of the study with contract value higher than 100 Million Baht.

Complete and valid responses were obtained from 17 construction sites with the response rate of 73.9%. The respondents in each site consist of one construction site manager (CSM) and a few of his/her immediate subordinates who work closely along with the CSM. The number of samples of the CSM and the subordinate are 17 and 43, respectively.

4. Results of Survey

(1) Leadership styles taken in the projects

Table 1 shows to what degree each leadership style is perceived to be taken by the subordinates. The studied CSMs seem to use the directive and achievement-oriented styles most.

According to Indvik (1988), who explored the meanings of Path-Goal Leadership, leadership taken by the CSM group is perceived by the subordinate group as medium directive, low supportive, medium participative, and medium achievement-oriented as compared with most leaders in other industries. It is found that project leaders in the Hong Kong construction industry tend to use the supportive style in the feasibility and pre-contract stage, and the directive style in the construction phase (Rowlinson et al., 1993).

Table 1. Perceived leadership styles in this study

	Mean	Std. deviation	Min	Max	Rank
1. Directive	23.4	3.74	17.0	31.0	1
2. Supportive	21.4	4.05	13.3	26.0	4
3. Participative	22.0	3.35	15.0	26.7	3
4. Achievement	22.2	4.18	11.0	29.0	2

Likhitwonnawut (1996) found, however, that in his study CSMs in Thailand tend to be more supportive in the construction phase because of complicated task structure but more participative in the feasibility and pre-contract stages. Results of this study seem consistent with studies by Indvik and Rowlinson et al. but inconsistent with Likhitwonnawut.

Table 2 shows difference in leadership styles perceived by the CSM and subordinate.

The CSMs think that they employ the supportive leadership style as the primary style. The immediate subordinates perceive, however, that the CSMs utilize the supportive style least. Their perception gap is statistically significant at 0.01 level.

## (2) Leadership effectiveness

### a) Group performance

In this study the leadership effectiveness is measured with the group performance assessed by the CSMs and the job satisfaction assessed by the subordinates.

Table 3 shows the correlation coefficients between the CSM's leadership perceived by the subordinate and the group performance. At the sites where the Participative style is perceived to be taken, the group performance becomes high.

Bresen et al. (1986) shows that relationship-oriented CSMs tend to enhance the project performance than the task-oriented ones. Fraser (2000) found the similar result that CSMs in Australia have high effectiveness as they use the participative style, and have low effectiveness as they use the directive style.

### b) Job satisfaction

Table 4 shows the correlation coefficients between the CSM's leadership perceived by the subordinate and the job satisfaction of subordinate.

The coefficients between the job satisfaction and three leadership styles, directive, supportive, and achievement-oriented, are highly positive. Especially seven coefficients associated with the supportive style are statistically significant at 0.05 level.

Table 4. Correlation coefficients between the leadership style and job satisfaction

Variable	Directive	Supportive	Participative	Achievement
Pay	0.307	0.698**	0.52*	0.082
Promotion	0.107	0.294	0.603**	-0.102
Supervision	0.268	0.780**	0.410	-0.059
Benefits	0.065	0.559*	0.139	-0.090
Contingent Rewards	0.587*	0.600*	0.461	0.263
Operating Procedure	0.425	0.544*	0.379	0.256
Co-workers	0.301	0.355	0.034	0.232
Nature of work	0.393	0.405	0.372	0.425
Communication	0.351	0.621**	0.379	0.122
Overall job satisfaction	0.417	0.782**	0.564*	0.156

Note) Correlation coefficients with \* and \*\* are statistically significant at .05 and .01 level (2-tailed), respectively.

Effectiveness of the supportive style into the job satisfaction has been discussed in various studies. House et al. (1974) found that there is mixed evidence about its effectiveness when subordinates work on stressful, frustrating, or dissatisfying tasks. On the other hand, Borcharding (1975) pointed out that the alienating effect of greater specialization and administrative rigidity such as elaborate planning and scheduling systems, which is conducive to enhance productivity in some situations, is a major cause of subordinates' dissatisfaction. The supportive style may mitigate the dissatisfaction rather than enhance productivity directly (Fiedler, 1967). According to Yukl (1994), most studies find a positive effect of supportive style on the subordinates' satisfaction, regardless of the situation.

According to the Path-Goal theory, the directive leadership has a positive association with subordinates' satisfaction when the tasks are structured, and has a negative correlation with it when the tasks are ambiguous (House et al., 1974).

Mitchell, Smyser, and Weed (1975) found that follower satisfaction was not directly correlated with the degree of participative behaviors of leaders, and that the external-locus-of-control followers were more satisfied with directive leader behaviors.

On the other hand, Yukl (1994) pointed out that the participative leadership might increase the intrinsic valence of work and thus satisfaction of the subordinates with a high need for achievement and autonomy. Mitchell, Smyser, and Weed (1975) concluded that the internal-locus-of-control followers are more satisfied with the participative leader behavior. Miller and Monge (1988) suggest that "participation fulfills needs, fulfilled needs lead to satisfaction, satisfaction strengthens motivation, and increased motivation improves workers' productivity."

## 5. Concluding Remarks

It is found that the studied CSMs were perceived to use the directive styles most and the supportive style least by their subordinates. At the sites where the participative style was perceived to be taken, performance of the subordinate group was high. At the sites where the supportive style was perceived to be taken, the subordinates' job satisfaction was high.

Table 2. Leadership styles perceived by the CSM and subordinate

Variable	Mean		Std. Deviation		Significance (two-tailed)
	CSM	Subordinate	CSM	Subordinate	
Directive	24.5	23.4	3.24	3.74	0.243
Supportive	24.7	21.4	2.76	4.05	0.001
Participative	22.4	22.0	3.87	3.34	0.647
Achievement	24.0	22.2	3.74	4.18	0.134

Note) \*\*: significant difference at 0.01 level

Table 3. Correlation coefficients between the leadership style and group performance

	Directive	Supportive	Participative	Achievement
	0.188	0.197	0.672**	0.097

Note) \*\*: significant at 0.01 level (two-tailed)