

A Fundamental Study on Leadership Styles of Construction Site Managers on Public Construction Projects in Thailand

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The construction site manager (CSM) is a key actor in the construction phase to cope with various kinds of dynamic resource constraints and to fulfill required project goals. Many leadership studies have been conducted in the manufacturing industry, but a little is known in the construction industry. In this paper an attempt is made to investigate current practices in leadership styles of CSMs in building construction projects in Thailand.

It is found that the studied CSMs are perceived to use the directive styles most and the supportive style least by their subordinates. At the sites where the participative style is perceived to be taken, performance of the subordinate group is high. At the sites where the supportive style is perceived to be taken, the subordinates' job satisfaction is high. As determinants of leadership style, quality of finished products and ethics are particularly important. Personal attributes of an immediate subordinate such as work experience and knowledge are also significant.

【Keywords】 leadership, Thai construction site manager, building projects

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. Its concrete objectives are to study what leadership styles are taken, what is effectiveness of each leadership style, and what are important leadership demands. Another objective is to study whether those results are consistent with Fiedler's contingency model, which has been studied most frequently in construction.

2. Literature Review

(1) Definition of leadership

There are many definitions of the leadership. Lussier and Achua (2001), for example, defined leadership as "influencing process of leaders and followers to achieve organizational objectives through changes." Fiedler and

Garcia (1987) defined leadership as a part of organizational management that deals with the direction and supervision of subordinates rather than, for instance, inventory control, fiscal management, or customer relations. Yukl (1994) defined leadership as "influence processes affecting the interpretation of events for followers, the choice of objectives for the group or organization, the organization of work activities to accomplish the objectives, the motivation of followers to achieve the objectives, the maintenance of cooperative relationships and teamwork, and the enlistment of support and cooperation from people outside the group or organization." Weinberg (1986) defined leadership in his "seed model" as the process of creating an environment in which people become empowered. Various definitions of leadership with their associated leadership models focus on a role of a leader, description of influence process, and provision of problem-solving approach.

The purpose of this study is to investigate the overall current practices in leadership styles of CSMs in Thailand, which had been hardly identified before. In this study, thus, "conventional" or "classical" and moderately comprehensive definition was employed: 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.

(2) Overview of leadership study

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It is possible to categorize various leadership studies in the four types: a) trait approach, which focuses on leader's personal characteristics, b) behavioral approach, which focuses on leader's behavior vis-à-vis followers, c) contingency approach, which focuses on match between leader behavior and situational characteristics, and d) charismatic approach, which focuses on visionary, inspirational, and empowering qualities of "superleaders" (Schermerhorn, 1999).

a) Trait approach

The trait approaches assume that leaders are born, not made, and that selected personal traits have a major impact on leadership outputs. These approaches focus on certain inherited personal characteristics, common traits of leadership, which distinguish leaders from their followers. The attention is to select appropriate leaders rather than to train for leadership.

However, attempts in identifying common traits of different good or successful leaders such as personality, physical, and mental characteristics, have been little successful. A decision of who is regarded as a good or successful leader is based on some subjective judgment. It is not easy, thus, to obtain the consensus on who is a good leader. Even if the consensus is reached, lists of possible traits tend to be very long, overlapping, or contradictory. There is not always an agreement on what the most important trait is for a good leader.

Although this approach does not provide a sound base for training in leadership, this laid the groundwork for consideration of certain traits, in combination with other leadership aspects, such as behaviors, that form the basis for some of the more current theories.

b) Behavioral approach

The behavioral of leadership sought to determine which leadership style, the recurring pattern of behaviors exhibited by a leader, worked best (Schermerhorn, 1999).

Two pioneers of this approach are studies conducted at the University of Michigan and Ohio State University. In the Michigan studies, two leadership styles, employee-centered and production-centered supervisors, were identified. The studies also showed that employee-centered supervisors generally had more productive work groups than the production-centered supervisors.

The Ohio State studies identified two independent dimensions in the leadership behavior: consideration and initiating structure. Similarly to the employee-centered leader, a leader with high consideration is sensitive to people's feelings and tries to make things pleasant for his or

her followers. Similarly to the production-centered supervisor, a leader with high initiating structure is more concerned with spelling out task requirements and clarifying other aspects of the work agenda. The four types of leadership style are then categorized such as low consideration and structure, low consideration but high structure, high consideration but low structure, and high consideration and structure based on the two separate dimensions instead of along a single continuum.

Blake and Mouton developed the leadership grid mainly for an educational purpose. The grid has two dimensions, concern for people and concern for production, with nine scales for each. Using this grid, a trainee is first assessed on which grid her or his leadership style falls in. A training program is then designed to guide the trainee to a desirable direction.

Misumi (1985) developed the PM theory through conducting researches and studies of leadership behavior in both the laboratory and field of different disciplines or industries in Japan. "P" represents performance, and P function involves leadership directed toward promoting goal achievement. "M" represents maintenance, and M function involves leadership directed toward maintaining social stability. Aiming at dealing with leadership issue as behavioral science, Misumi developed concrete scales to measure the degrees of P and M functions used by leaders based on their subordinates' ratings. He then classified leadership styles into four groups such as PM (high P and M), pM (low P and high M), Pm (high P and low M), and pm (low P and M) and demonstrated that performance and job satisfaction of groups led by leaders with PM are generally the highest among the four leadership styles. This theory has been tested extensively in practice.

c) Contingency approach

Fiedler's contingency model (1967) is a pioneering work in this approach. Its essence lies in the premise that good leadership depends on situations. He introduced the three variables to represent the situation: leader-member relations, task structure, and leader position power. Task-oriented and relationship-oriented are the two leadership styles used in the model. As an index to measure which type of leadership style each leader tends to use, Fiedler developed the Least Preferred Coworker (LPC) scale. The LPC score is obtained through asking a respondent to describe the person with whom she or he could work least well. Fiedler assumes that leaders with high-LPC score, those seeing their LPC very positively, tend to take a relationship-motivated style while leaders with low-LPC score tend to manifest a task-motivated style. Fiedler finally claims that when the leadership situation is very favorable

or very unfavorable, a task-oriented leader is more effective and when the situation is moderately favorable, a relationship-oriented leader is more effective.

The path-goal theory is another representative contingency approach. This theory initially developed by House is based on the expectancy model of motivation. The leader's responsibility is to increase subordinates' motivation to fulfill personal and organizational goals by either (1) clarifying the followers' path to the intrinsic or/and extrinsic rewards that are available or (2) increasing the reward that the follower values and desires.

Inputs, "decision variables," and outputs of the research model are contingency factors consisting of subordinate attributes and work-setting attributes, four leadership styles including directive, supportive, participative, and achievement-oriented styles, and subordinate outcomes represented with job satisfaction, acceptance of leader, and motivational behavior, respectively. Given situation represented with the two contingency factors, the model specifies proper leadership behavior to enhance the subordinate outcomes.

d) Charismatic approach

This approach, sometimes referred to as transformational approach, is based on the assertion that effective leaders are those who can influence major changes in the attitudes and assumptions of subordinates and build commitment to the organization's goals and overall mission.

The transformational approach relies heavily on the trait approach. It is believed that effective leaders exhibit several unique characteristics that give them influence over their followers.

(3) Studies on leadership in construction

In the context of construction site management, there are few studies in leadership.

Bresnen et al. (1984) studied the leadership style of UK site managers by employing Fiedler's contingency model and Fiedler's LPC scale to investigate the influence of personal and situational variables on a project manager's behavior. The findings of Bresnen supported the significant effect of situational variables on the effectiveness of leadership. However, those situational variables, commonly acting as moderating variables such as task structure, leader position power, and leader-member relation in other industries, do not have strong impact on selection of leadership styles by site managers. The key findings are as follows:

- ◆ Site managers generally exhibit a stronger task-orientation than other industries.
- ◆ There is no association between site managers'

leadership style and their background characteristics (age, education background, experience, etc.)

- ◆ The High LPC managers tend to perform better than the low LPC ones when the project has larger contract value and longer contract duration.

Enshassi and Burgess (1991) studied the relationship between managerial or leadership styles of construction site managers and their effectiveness in the Middle East. They found a strong association between site managers' style and their effectiveness. The high task and high employee-oriented style is the most effective style in managing multi-cultural workforces.

Rowlinson et al. (1993) studied the leadership styles of Hong Kong Chinese construction managers in design, documentation and construction phase, by using Fiedler's LPC score and House's styles grid. The findings are as follows:

- ◆ Project managers and leaders are generally relationship-oriented and socio-independent with less concern on task accomplishment. Project leaders tend to use a supportive style in the feasibility study and pre-contract phase, and a directive style in the post-contract stage of works
- ◆ Different leadership styles are employed by the same project leaders which may attribute to the different situations

Djebbarin (1996) used Fiedler's contingency leadership model to study the impact of stress on site management effectiveness. The study used the LPC score to measure site managers' orientation. He suggested that there are strong associations between the LPC score and project effectiveness (performance, delay, and quality of finished work). The relatively task-oriented site managers achieve higher levels of project effectiveness than relationship-oriented site managers. These results are different from studies by Bresnen et al. (1986 and 1987).

Likhitwonnawut (1996) employed Fiedler's contingency leadership model and the House-Grid method to identify the preferred and actual leadership styles of construction site managers (CSMs) in Thailand. The preferred leadership style is relationship-oriented, socio-independent, and less task-oriented. The actual leadership styles of CSMs tend to be participative in the feasibility and pre-contract stage and supportive in the construction phase.

McCabe et al. (1998) use the interpretative paradigm to identify the practices of eighteen quality managers in the U.K. By using the charismatic leadership approach, they found three important qualities among those managers: adaptability of leadership behavior, utilization of appropriate technique for quality improvement, and commitment.

As described above, many previous studies use the Fiedler's contingency theory as the basis for analyzing the project manager's behavior. However, the situational and personal variables are dependent upon each researcher. It is thus worth attempting to incorporate as many significant variables as possible.

Each leadership theory focuses on a different aspect of the work environment and defines leader effectiveness somewhat differently. For example, Fiedler defines effectiveness in terms of group performance and focuses his attention on the interaction of personality and situational control as they relate to performance. The path-goal model defines effectiveness as the extent to which members of a group are motivated and are satisfied. The charismatic or transformational leadership approach emphasizes the personal appeal of the leader in getting his or her subordinates to commit themselves to the leader's vision and goal. In order to have an overall picture of CSMs' leadership styles in Thailand, therefore, it is worth attempting to incorporate various aspects of reviewed models.

3. Research Model

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 styles according to the Path-Goal theory.

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.

Figure 1 represents a research model in this study, which is constructed on the basis of the above discussion. The model consists of demands, behavior, and effectiveness of the leadership. An attempt is made to incorporate various kinds of demands.

4. Questionnaire Development

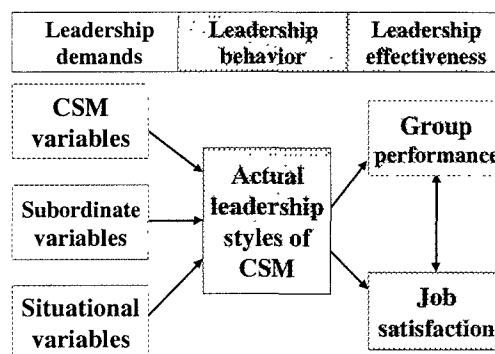


Figure 1. Research model for this study

(1) Leadership demands

CSM variables and subordinate variables include personal attributes of those such as work experience or knowledge.

Situational variables include leader-member relations, task structure, and position power of the CSM. Project characteristics such as project value, contractual period, completion percentage, the number of on-site staff, and type of client are also included.

(2) Leadership styles

Here, it is assumed that CSM's leadership styles are measurable through perception of his/her immediate subordinates. To what degree each of the four leadership styles is perceived to be taken is given by the total score of five questions with 7-point scale ranging from "never" to "always." Thus, the score for each leadership style ranges from 0 to 35. This notion is employed from Path-Goal Leadership Questionnaire, which is based on the work of House and Dessler (1974). These questions are given by Table 1.

The same questions are also asked to the CSM to find any perception gap between the CSM and the subordinates.

(3) Leadership effectiveness

Measures for the group performance are developed by Szilagi and Wallace (1983). There are four assessment items: accuracy of work, work speed, cooperation within fellow workers, and the overall effectiveness of the team on the delegated jobs.

Regarding the assessment method, Reddin (1983) claims that the managerial effectiveness should be objectively assessed by maximum output, market share, and other similar criteria. There is some weakness of objective measurement, however, that a man may do an excellent job by objective measurement, but may fail miserably as a partner, subordinate, superior, or colleagues. It is generally

Table 1. Questions to measure degree of each leadership style

Directive style

Q1: CSM tells the his expectation.
Q5: CSM tells what and how to be done.
Q9: CSM asks subordinates to follow rules and regulations
Q14: CSM explains the expected performance levels.
Q18: CSM gives unclear explanations about the jobs (Rev.)

Supportive style

Q2: CSM keeps friendly relationship with subordinates.
Q8: CSM does many things to make subordinates pleasant.
Q11: CSM's words hurt subordinates feelings (Rev.).
Q15: CSM helps subordinates to overcome problems.
Q20: CSM behaves with thinking of subordinates' feelings.

Participative style

Q4: CSM listens to subordinates' suggestions receptively.
Q3: CSM consults with subordinates when facing a problem.
Q12: CSM asks for subordinates' suggestions on how to do.
Q7: CSM acts without consulting with subordinates (Rev.).
Q17: CSM asks for subordinates' suggestions on what to do.

Achievement-oriented style

Q6: CSM tells subordinates to perform at highest level.
Q10: CSM sets quite challenging goals for subordinates.
Q13: CSM helps continual improvement in followers' performance.
Q16: CSM does not believe in the subordinates' capabilities (Rev.).
Q19: CSM consistently set challenging goals for subordinates.

Note: "Rev." means that the score needed to be reversed.

suggested that every performance appraisal needs to have subjective measurement that directs to performance rather than personality.

Furthermore some difficulties may exist in measuring leadership effectiveness in the construction industry. Unavailability of objective data (e.g. Lemna et al. 1986) or the inaccessibility to data due to unwillingness of respondents or the instability of the political climate in the organization (e.g. Logecher and Collins (1978)) are reported examples.

In this study, thus, the CSMs are asked to assess the performance of his/her immediate subordinate group with respect to the above four items. Each item is assessed with five-point scale ranging from "very poor" to "very good." Thus, the score for the group performance ranges from 0 to 20.

The job satisfaction is measured with the 36-item indices which represents the extent to which workers feel generally satisfied or dissatisfied with their current job from nine perspectives. These questions are given by Table 2.

5. Conduct of Survey

Due to economic slowdown in Thailand, there is currently a limited number of on-going building

Table 2. Questions to measure job satisfaction of immediate subordinates

Pay

Q1: Being paid a fair amount
Q10: Raises are too few and far between (Rev.).
Q19: Feel unappreciated by the firm when thinking what I received (Rev.)
Q28: Satisfied with chance for salary increases

Promotion

Q2: Too little chance for promotion on my job (Rev.)
Q11: Fair chance for being promoted
Q20: Get ahead as fast as in other places
Q33: Satisfied with chances for promotion

Supervision

Q3: CSM is quite competent in doing his job.
Q12: CSM is unfair to subordinates (Rev.).
Q21: CSM shows little care about subordinates' feelings (Rev.).
Q30: Subordinates like CSM.

Benefits

Q4: Not satisfied with the benefits received (Rev.)
Q13: Benefits are as good as most other firms offer.
Q22: Benefit package is equitable.
Q29: There are unreceived benefits that should be received (Rev.).

Contingent Rewards

Q5: Receive recognition for doing a good job
Q14: The work I do is not appreciated (Rev.).
Q23: Few rewards for subordinates (Rev.).
Q32: Efforts are not rewarded as they should be (Rev.).

Operating Procedure

Q6: Rules & procedures make doing good jobs difficult(Rev.).
Q15: Efforts to do good jobs are seldom blocked by red tape.
Q24: Too much to do at work (Rev.).
Q31: Too much paperwork (Rev.).

Co-workers

Q7: Like the people I work with
Q16: Work harder because of incompetence of coworkers (Rev.)
Q25: Enjoy with coworkers
Q34: Too much bickering and fighting at work (Rev.)

Nature Of work

Q8: Feel sometimes jobs is meaningless (Rev.)
Q17: Like the things I do at work
Q27: Feel a sense of pride in doing jobs
Q35: Job is enjoyable.

Communication

Q26: Do not know what is going on in the organization (Rev.)
Q9: Good communication in the organization
Q36: Work assignments are often not fully explained (Rev.)
Q18: The organizational goals are not clear to me (Rev.)

Note: "Rev." means that the score needed to be reversed.

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

Table 3. Perceived leadership styles in this study

	Mean	Std. deviation	Min	Max	Rank
1. Directive	23.421	3.743	17.000	31.000	1
2. Supportive	21.412	4.048	13.330	26.000	4
3. Participative	21.961	3.336	15.000	26.670	3
4. Achievement-oriented	22.235	4.180	11.000	29.000	2

Table 4. Leadership styles perceived by the CSM and subordinate

Variable	Mean		Std. Deviation		Significance (two-tailed)
	CSM	Subordinate	CSM	Subordinate	
1. Directive	24.529	23.421	3.243	3.743	0.243
2. Supportive	24.706	21.412	2.756	4.048	0.001**
3. Participative	22.412	21.961	3.874	3.336	0.647
4. Achievement-oriented	24.000	22.235	3.742	4.180	0.134

Note) **: significant difference at 0.01 level.

ongoing building construction sites were selected as target groups of the study with higher than its contract value of 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.

6. Results of Survey

(1) Leadership styles taken in the projects

Table 3 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.

In study by Rowlinson et al. (1993), it is found that project leaders in the Hong Kong construction industry tend to use the directive style in the construction phase. 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 a study by Rowlinson et al. but inconsistent with Likhitwonnawut's study.

Table 4 shows difference in leadership styles perceived by the CSM and subordinate.

The CSMs think that they employ the supportive

Table 5. Overall group performance

Mean	Std. Deviation	Minimum	Maximum
13.353	1.730	11.000	17.000

Table 6. 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)

leadership style as the primary style. The immediate subordinates perceive, however, that the CSMs utilize the supportive style least. The difference in their mean values rated by the CSMs and the subordinates is statistically significant at 0.01 level. Regarding the supportive style, therefore, a wide perception gap exists between the two parties.

(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 5 shows overall group performance scores. If the all four items are assessed to be "average," the total score would be 12 (=3×4). Since the mean value, 13.353, is larger than 12, the overall group performance of the 17 subordinate groups are higher than general standard.

The next question is then under which leadership styles the group performance becomes high.

Table 6 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. Results of this study support those previous studies.

b) Job satisfaction

Table 7 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

Table 7. Correlation coefficients between the leadership style and job satisfaction

Variable	Directive	Support -ive	Participa -tive	Achieve -ment
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
Communi- cation	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.

statistically significant at 0.05 level.

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, Borchering (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, et al. (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 et al. concluded that the internal-locus-of-control followers are more satisfied with the participative leader behavior. It is

considered that participation fulfills needs, fulfilled needs lead to satisfaction, satisfaction strengthens motivation, and increased motivation improves workers' productivity.

(3) Application of Fiedler's contingency model

Questionnaires developed by Fiedler and Garcia (1987) were adopted and asked the CSMs to measure leader-member relations, task structure, and position power in their situations. 10 CSMs describe their situations as high leader-member relations, structured task, and high position power. In Fiedler's categorization, this situation is called "Octant I" among eight octants and considered the most favorable situation.

The LPC scores of the 10 CSMs were also obtained from 18 questions. Its mean value is 65.39. The leadership style corresponding to this score is task-oriented. There is a view that a stronger task emphasis exists among site managers than do among other leaders (Bryman 1987). Result of the study is consistent with this view.

The correlation coefficient between the LPC scores and the group performance score of the 10 sites was -0.461. It means that the more task-oriented style is taken, the higher work performance is obtained. This result is not inconsistent with Fiedler's theory.

(4) Leadership determinants

Table 8 shows the most important determinants of CSM's leadership behavior. According to Fiedler (1967), the leader-member relations, task structure, and position power of leader are generally the most important determinants of leadership behaviors, especially in the manufacturing industry. These three factors are, however, not included in the top nine factors.

Instead, quality of finished products is ranked first, and ethics is ranked second. Ethics is probably considered because of personal power, justice, fairness, and the Thai culture of "saving face" concept. Experience, job knowledge, growth and development, and professional orientation of an immediate subordinate are also considered significant.

7. Conclusions

The results of this study identify current practices in leadership styles of construction site managers (CSMs) and leadership effectiveness in terms of group performance and job satisfaction of immediate subordinates. There is no predominant leadership style of CSMs, but they tend to employ the directive and achievement-oriented styles more frequently than the supportive and participative styles. The differences in perceptions of actual leadership styles by

Table 8. The most important determinants of CSM's leadership behavior

Rank	Factor	Description	Mean Value	Std Dev
1	IO15	Quality of finished products	4.41	0.51
2	L10	Ethics	4.35	0.70
3	F6	Experience, job knowledge of an immediate subordinate	4.24	0.75
4	F10	Growth and development of an immediate subordinate	4.18	0.73
5	IO14	Cost or budgetary constraint	4.18	0.88
6	IO17	Safety	4.18	0.95
7	L5	Project manager's job Knowledge	4.06	0.75
8	IO13	Time constraint	4.00	0.71
9	F8	Professional orientation of an immediate subordinate	4.00	0.94
10	L8	Project managers' motivation on specific task	3.82	0.53
11	F4	IQ of an immediate subordinate	3.82	0.73
12	IO1	Superior's leadership style	3.82	0.95
13	L6	IQ of project managers	3.77	0.90
14	IO2	Superior's expectation	3.71	0.92
15	L1	Position power of project managers	3.65	0.86
16	IO11	Feedback system of accomplishment/failure jobs	3.65	0.93
17	IO19	Task Structure (degree of a task defined)	3.65	0.93
18	F9	Subordinate's internal/external locus of control	3.65	1.06
19	EO6	Type of consultant	3.65	1.27
20	L2	Project involvement from start date	3.65	1.32
21	L4	Project managers' tolerance w/ ambiguity	3.59	0.80
22	IO12	Job satisfaction of an immediate subordinate	3.53	0.80
23	IO7	Operating procedure/rule	3.53	0.94
24	F1	Preferred leadership styles of an immediate subordinate	3.53	1.01
25	IO6	Organizational policy	3.53	1.18
26	EO1	The economic or unemployment condition	3.53	1.18
27	L3	Decision making systems of project managers	3.47	0.51
28	F2	Needs or motivation of an mediate subordinate	3.47	0.72
29	L9	Preferred leadership styles of project managers	3.41	0.71
30	F11	Boss/job stress of an immediate subordinate	3.41	0.80
31	F3	Confidence level of an immediate subordinate	3.41	1.00
32	F12	Familiarity and cohesiveness of subordinate groups	3.41	1.23
33	EO5	Type of client	3.41	1.28
34	EO3	Technology demands	3.35	1.00
35	L11	Project managers' boss and job stress	3.35	1.12
36	F5	Leader-member relations	3.29	1.31
37	IO16	Environmental concern	3.24	0.75
38	L7	Project managers' familiarity w/ the present firm	3.12	1.27
39	F7	Needs for independence of an immediate subordinate	2.94	1.03
40	IO5	Organizational history	2.94	1.20
41	IO9	Organizational reward system	2.94	1.20

42	IO20	The complexity of the organizational structure	2.94	1.25
43	IO8	Informal customs in the organization	2.82	0.81
44	IO18	Politics in the organization	2.77	1.25
45	IO3	Peers' leadership style	2.71	0.92
46	EO2	Cultural difference	2.53	0.87
47	IO10	Spatial distance b/w leader and an immediate follower	2.47	1.28
48	IO4	Peer's expectation	2.29	0.99
49	EO4	External political environment	1.88	0.78

Note)

Lxx: Leader variable, Ixxx: Internal organizational variable

Fxx: Follower variable, Exxx: External organizational variable

CSM and immediate subordinates are identified with respect to the supportive style. The determinants of leader behavior according to the perceptions of CSMs are identified as different from Fiedler's contingency theory and other leadership theories. Results of this study are not totally consistent with Fiedler's contingency theory.

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