Testing Herzberg's two-factor theory in the Thai construction industry

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Keywords

Motivation, Job Satisfaction, Employee attitudes, Thailand, Construction industry

Abstract

Herzberg's two-factor theory of motivation is widely known in management circles. However, it has been criticized regarding its validity in different work settings. Construction is an industry with unique characteristics which may have special effects on employee motivation. This study tests the two-factor theory on Thai construction engineers and foremen following Herzberg's interviewing procedure and compares the results to Herzberg's. Responsibility, advancement, possibility of growth, and supervision contribute to job satisfaction, while working conditions, job security, safety on site, and relationships with other organizations contribute to job dissatisfaction. Recognition, work itself, company's policy and administration, interpersonal relations, personal life, and status contribute to both satisfaction and dissatisfaction. Achievement contributes to satisfaction for engineers but contributes to both satisfaction and dissatisfaction for foremen. It is concluded that Herzberg's theory is not entirely applicable in the Thai construction setting. Some factors should receive attention if construction employees are to be motivated effectively.

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Introduction

In any institution, an important dimension of management is to make work productive and to help the workers to achieve. One of the manager's basic tasks is to communicate with and motivate workers (Drucker, 1985). Motivation has been a popular research topic for over 50 years. After it first emerged around World War II, there have been plenty of books, papers and studies on motivation, industrial psychology, interpersonal relations at work and worker satisfaction concerning how to encourage people to increase performance and productivity. Performance and productivity of workers should still be important topics for management research in future, especially for knowledge workers, who are valuable assets to institutions (Drucker, 1999).

The word "motivation" was derived from the Latin term *movere* which means "to move". Definitions of motivation tend to center around "how to provide something to a person to drive him (or her) to do something". Since the 1950s, many motivation theories have been advanced in the field of organizational behavior and management. They are generally categorized into the two groups: content theories and process theories. Content theories focus primarily on individual needs, attempting to explain the factors within a person that energize and stop behavior. They address the question "what factors motivate people?" Examples of content theories are Maslow's hierarchy of needs theory (Maslow, 1954), Alderfer's ERG theory (Alderfer, 1972), Herzberg's two-factor theory (Herzberg *et al.*, 1959), and McClelland's needs theory (McClelland, 1961). Process theories focus on "why" and "how" of motivation, investigating formally into the thinking processes through which people choose one action versus another in the workplace. They analyze how personal factors (internal to the person) interact and influence each other to produce certain kinds of behavior. Adam's equity theory (Adams, 1965), Vroom's expectancy theory (Vroom, 1964) and Porter & Lawler's model (Porter & Lawler, 1968) have become famous in the literature. A review of these theories is beyond the scope of this paper as they are available elsewhere (Robbins, 2001). The objective of this study is to test Herzberg's theory and, in the

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process, to discover the motivation pattern of construction professionals in Thailand as well.

Herzberg's two-factor theory

This study focuses on the two-factor theory introduced by Herzberg *et al.* (1959) but popularly attributed to Herzberg. The main concept of the theory is the distinction between two groups of factors called motivation factors and hygiene factors. According to the theory, the motivation factors operate only to increase job satisfaction while the hygiene factors operate to decrease job dissatisfaction.

Herzberg *et al.* (1959; pp. 113-114) stated thus:

> Among the factors of hygiene, when the factors deteriorate to a level below that which the employee considers acceptable, then job dissatisfaction ensues. However, the reverse does not hold true. When job context can be characterized as optimal, we will not get dissatisfaction but neither we will get much in the way of positive attitudes. It should be understood that both kinds of factors meet the needs of the employees; but it is primarily the "motivators" that serve to bring about the kind of job satisfaction, . . ., the kind of improvement in performance that industry is seeking from its work force.

According to Herzberg, motivation factors are the six "job content" factors that include achievement, recognition, work itself, responsibility, advancement, and possibility of growth. Hygiene factors are "job context" factors, which include company policy, supervision, relationship with supervisors, work conditions, relationship with peers, salary, personal life, relationship with subordinates, status, and job security. Brief explanations on the factors are given in the next section.

The factors

- *Achievement*. Positive achievement events are stories of success on jobs or solutions to problems. For example, a construction engineer told good stories when he finished a project ahead of the planned schedule and when he was able to solve a difficult technical problem. On the contrary, bad events of achievement involve failure, no progress of work, failure in decision making and schedule delays.
- *Recognition*. Positive recognition occurs when employees are praised or their ideas are accepted. Negative recognition includes blame, criticism or when good ideas are overlooked. Recognition may come from supervisors, peers, and subordinates.
- *Work itself*. Events related to tasks and assignments being too easy or too difficult, interesting or boring tasks are included here. An example of a good event is a construction engineer who was assigned to supervise a modified footing and it made him feel challenged. On the contrary, assigning an engineer or foreman to superintend some simple tasks (like masonry) is an example of a bad event.
- *Responsibility*. This factor relates to whether or not the individual is given the responsibility or freedom to make decisions. An example of a good event is the case of a senior foreman who was allowed by his boss to make decisions on work procedures entirely on his own. An example of a bad event is another foreman who was not allowed to make decisions, he had to ask for approval from the project engineer before doing anything.
- *Advancement*. Promotion (expected or unexpected) is positive advancement, whereas failure to receive expected promotion and demotion are negative advancement.
- *Possibility of growth*. This includes the chance that a person can be promoted. Opportunities to learn new skills or advance construction techniques are also opportunities for growth.
- *Company policy and administration*. Satisfaction and dissatisfaction caused by good or bad organizational policies affect the employee.
- *Supervision-technical*. Statements about supervisors' willingness or unwillingness to delegate responsibility or to teach, supervisors' competence or incompetence, and fairness or unfairness of supervisors, etc. are classified under supervision.
- *Interpersonal relations with supervisors, peers, and subordinates*. These categories are limited to personal and working

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interactions between the respondent and other people he/she works with. Examples are good or bad experiences involving cooperation, interaction, and discussions at work and during break times.

- *Working conditions*. Events in this category relate to physical surroundings on the job, good or bad facilities, and too much or too little work.
- *Salary*. Increase and decrease in salary or wages.
- *Personal life*. Personal situations affected by jobs. For example, an engineer's wife may complain that her husband is always assigned to supervise concreting at night.
- *Status*. Any mention about some signs or appurtenance of stature (e.g. secretary, personal office, cars, etc.) are categorized as stature.
- *Job security*. This includes events related to signs of presence or absence of job security.

The problem with the two-factor theory

After the two-factor theory was proposed, Herzberg corroborated it by showing a combination of 12 different investigations and one successful application in a very large corporation (Herzberg, 1968). However, this theory has since been tested in various occupations and different results have been reported. Table I contains some previous studies and their findings. The table shows results that contradict the theory and some factors that contribute to both job satisfaction and job dissatisfaction. Sergiovanni (1966, 1967) named them "bi-polar" factors.

There are two common explanations for the differences between the previous studies and Herzberg's result: differences in occupations and differences in workplaces. As an example of occupational differences, Myers (1964) tested the theory in the USA with five occupations in a single company and the result showed several differences in the appearance of some factors. Even in Herzberg's study, the percentage frequencies for engineers and accountants were different for some factors (appearance of advancement, work itself, relationships with subordinates, and relationship with peers (Herzberg *et al.*, 1959)). As an example of same occupation but different workplaces, nurses and teachers were in the samples used in Herzberg's study (Herzberg, 1968) to support his theory but when these two occupations were tested in other places, there were differences in the results. In Table I, Smith (1983) and Nalepka (1985) obtained different results in their nurse samples, while Sergiovanni (1966), Park *et al.* (1988), and Williams (1992) found differences in their teacher samples. The above examples provide evidence suggesting that the theory can be distorted if the test is conducted in any unique setting. The construction environment has some unique characteristics such as strict attention to cost and schedule, numerous conflicts, labor-intensity, tailor-made work, on-site work, and short-term employment (Nave, 1968; Schrader, 1972; Laufer and Jenkins, 1982). Therefore, it is likely that different result will be obtained from testing Herzberg's theory in the industry.

Studies on motivation in the construction industry

Mansfield and Odeh (1989) have reviewed a lot of work on the motivation of construction operatives; but that is not the focus of this study. Other works on the motivation of field engineers and foremen exist. In the USA, Borcherding and Oglesby (1974, 1975) used an open-ended questionnaire on field superintendents and foremen, starting with the question "What gives you the most job satisfaction?" Borcherding and Oglesby (1974) commented that the important elements of job satisfaction for superintendents and foremen were the challenge of running work, good management support, enough information feedback, pride of workmanship and successful work, and good crew relations. On the contrary, poor coordination, poor engineering information, uncooperative workmen, and personal mistakes were serious factors leading to job dissatisfaction (Borcherding and Oglesby, 1975). If their studies are considered to be based on Herzberg's theory, they demonstrate that company policy, achievement, and interpersonal relations are important bi-polar factors, because they contribute significantly to both job satisfaction and dissatisfaction, while work itself and responsibility are motivation factors. However, Borcherding and Oglesby noted that their study was not designed to prove or disprove Herzberg's theory. The factors appearing in their works were strongly

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Table I Previous tests not fully supportive of Herzberg's theory

Researcher	Samples	Disagreements
Sergiovanni (1966)	Teachers	Some factors were bi-polar factors
Sithiphand (1983)	Bank employees in Bangkok (385)	Responsibility (H)
		Interpersonal relations (M)
		Job security (M)
		Personal life (M)
		Working conditions (M)
		Work itself (H)
Smith (1983)	Nurses in Tulsa County (USA)	Recognition (H)
Nalepka (1985)	Nurses in the USA (152)	Relationship with peers (M)
		Relationship with subordinates (M)
		Job security (M)
Park *et al.* (1988)	Vocational teachers, Korean and US (200)	Work itself (Bi-polar)
		Advancement (Bi-polar)
Al-Mekhlafie (1991)	Yemen faculties	Working condition (M)
		Supervision (M)
		Interpersonal relations (M)
Williams (1992)	School teachers in Detroit (144)	Recognition (Bi-polar)
		Work itself (Bi-polar)
		Responsibility (Bi-polar)
Jensen (1993)	School superintendents in South Dakota (525)	Relationship with subordinates (Bi-polar)

Source: Dissertation Abstracts Online (DAO)

connected with productive and nonproductive jobs. Job satisfaction inclined towards "job satisfaction from progress of work". Factors like salary, working conditions, job security, personal life, possibility of growth, and advancement were neglected in their studies. Thus, Herzberg's research has yet to be directly replicated in the construction setting.

The test of the two-factor theory in the Thai construction setting

Research objectives

Gaps in the previous sections naturally lead to the question of applicability of Herzberg's theory to construction professionals. The objectives of this study are to test Herzberg's theory and to discover the motivation pattern of construction professionals in Thailand in the process. The interview method adopted in this study replicates Herzberg's original method. The scope is limited to comparing and discussing differences between results of this study and that of Herzberg.

Methodology

In the original study, Herzberg adapted a concept developed by Flanagan (1954), called the "critical incident technique", by asking respondents to describe exceptional events (or extreme situations) from their working history. Herzberg claimed that the method had many advantages, it avoided problems inherent in the weighting of scores, and reduced distortions from rating or ranking experiments. Moreover, the semi-structured interview technique gave respondents freedom in reporting their feelings and also fulfilled the requirement of the study. He commented, "Instead of asking people what makes them happy or unhappy, I thought it would be better to get at the kinds of experiences that produced satisfaction or dissatisfaction with a job" (*Management Review*, 1971). The major question used in the study was:

> Think of a time when you felt exceptionally good or exceptionally bad about your job, either your present job or any other job you have had. This can be either the "long-range" or the "short-range" kind of situation as I have just described it. Tell me what happened? (Herzberg *et al.*, 1959, Appendix I).

The respondents were interviewed carefully without paraphrasing, summarizing or omissions. The interviewers were allowed to ask some follow-up questions to obtain more clear explanations (Herzberg *et al.*, 1959: Appendix I). After the first story has been completed, the respondent was asked to tell

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one more story about the opposite feeling. If the first story was a good one, the second one must be a bad story. If some respondents had more than two critical events, they were allowed to tell the interviewer and the stories were included in the analysis.

Acceptable sequence of events must meet the following five criteria (Herzberg, 1959, pp. 40-41).

(1) The sequence must revolve around an event or a series of events. There must be some objectives happening.
(2) The sequence of events must be bounded in time; it should have a beginning that can be identified, a middle, and, unless the events are still going on, there must be some sort of identifiable ending, not necessarily dramatic or abrupt.
(3) The story must have taken place during a period in which feelings about the job were exceptionally good or exceptionally bad.
(4) The story must concern a period of time in the speaker's life when he/she held a position that fell within the limits of the sample.
(5) The story must be about a situation in which the speaker's feeling about his/her job were directly affected.

In this study, every story was recorded on a cassette tape before being carefully analyzed to retrieve sequence of events and motivational factors according to Herzberg's procedure. A single event could involve one or more factors.

The samples

A total of 125 respondents including 64 engineers and 61 foremen from 29 construction sites in the Bangkok area were interviewed. Non-probabilistic quota sampling and snowball technique were adopted in selecting the respondents. To meet the requirement of this study, that the samples must be people working in the construction environment, the respondents were selected based on their job functions. To be included in the sample, the respondents must:

- work with a contracting company;
- work full-time on a construction site;
- have direct responsibility for the progress of construction work (not inspectors, cost engineers, office engineers, schedulers, designers or consultants); and
- be construction engineers or construction foremen (electrical, mechanical and other fields are excluded).

Classification of factors

The percentage appearance was employed to classify factors into motivation or hygiene group (Herzberg, 1968). The percentage is calculated by dividing the number of events for each factor by the total number of all events (separating good and bad events). Factors with high percentage of good and low percentage of bad were designated as motivation factors; factors to the contrary were designated hygiene factors. Non-parametric chi-square (χ^2) technique was adopted to test for significant differences between good appearance and bad appearance for each factor as below.

Let:

X_{good} = Percentage of good events for factor X;

X_{bad} = Percentage of bad events for factor X;

If $X_{good} > X_{bad}$ with statistical significance
=> X is a motivation factor;

If $X_{bad} > X_{good}$ with statistical significance
=> X is a hygiene factor.

If there is no statistically significant difference in the percentage appearances between X_{good} and X_{bad}, then factor X contributes to both job satisfaction and job dissatisfaction and is, therefore, classified as a bi-polar factor, after Sergiovanni (1966).

The findings

A total of 345 critical incidents were extracted from the interview data and 568 factors (312 good and 256 bad) were retrieved and categorized using Herzberg's 14 categories. Comparisons between Herzberg's result (1968) and this study are presented using percentages and bar chart in Table II and Figure 1.

Job content factors

The result indicates that achievement is the most frequently mentioned source of job satisfaction by Thai construction engineers and foremen. For the engineer sample, the result agrees with the theory because there is significant difference between the percentages

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Table II Comparison of percentage of appearance of factors between Herzberg's (1968) and Ruthankoon's (2001) results

	Herzberg (1968) (all samples)		Ruthankoon (2001) (all samples)		Ruthankoon (2001) (construction engineers)		Ruthankoon (2001) (construction foremen)	
Factors	**Good**	**Bad**	**Good**	**Bad**	**Good**	**Bad**	**Good**	**Bad**
Achievement	42	10	26	16	29[a]	13	23	20
Recognition	31	9	11	13	13	15	9	10
Work itself	22	12	10	10	13	16	6	4
Responsibility	21	4	12[a]	4	13[a]	5	10[a]	3
Advancement	12	5	7[a]	2	8[a]	1	7[a]	3
Possibility of growth	6	5	19[a]	4	20[a]	5	17[a]	4
Company policy and administration	4	35	10	8	11	10	8	6
Supervision-technical	4	19	8[a]	2	9[a]	1	8[a]	3
Interpersonal relations – supervisors	5	10	16	15	12	11	21	19
Working conditions	2	10	2	6[a]	1	5[a]	3	8[a]
Salary	7	8	19	13	14	9	24	18
Interpersonal relations – peers	4	6	13	8	11	6	16	10
Personal life	1	4	2	4	1	2	2	3
Interpersonal relations – subordinates	4	4	9	10	10	10	12	9
Status	2	3	2	2	1	1	2	3
Job security	1	2	3	9[a]	3	8[a]	3	10[a]
Accident	–	–	2	13[a]	1	6[a]	2	21[a]
Interpersonal relations – other organizations	–	–	2	17[a]	1	23[a]	3	10[a]

Notes: The percentages total more than 100 per cent because more than one job factor can be mentioned in a single critical incident. [a]Differences in totals between high and low statistically significant at 0.05 level of confidence

for good and bad achievement. However, in the case of foremen, the frequency is almost equal for the two sides (good 23 per cent, and bad 20 per cent). From the interviews, the foremen indicated more bad feelings from unsuccessful work and rework than the engineers (foremen related more technical events than engineers). For the foremen, the hygiene property of achievement can not be overlooked.

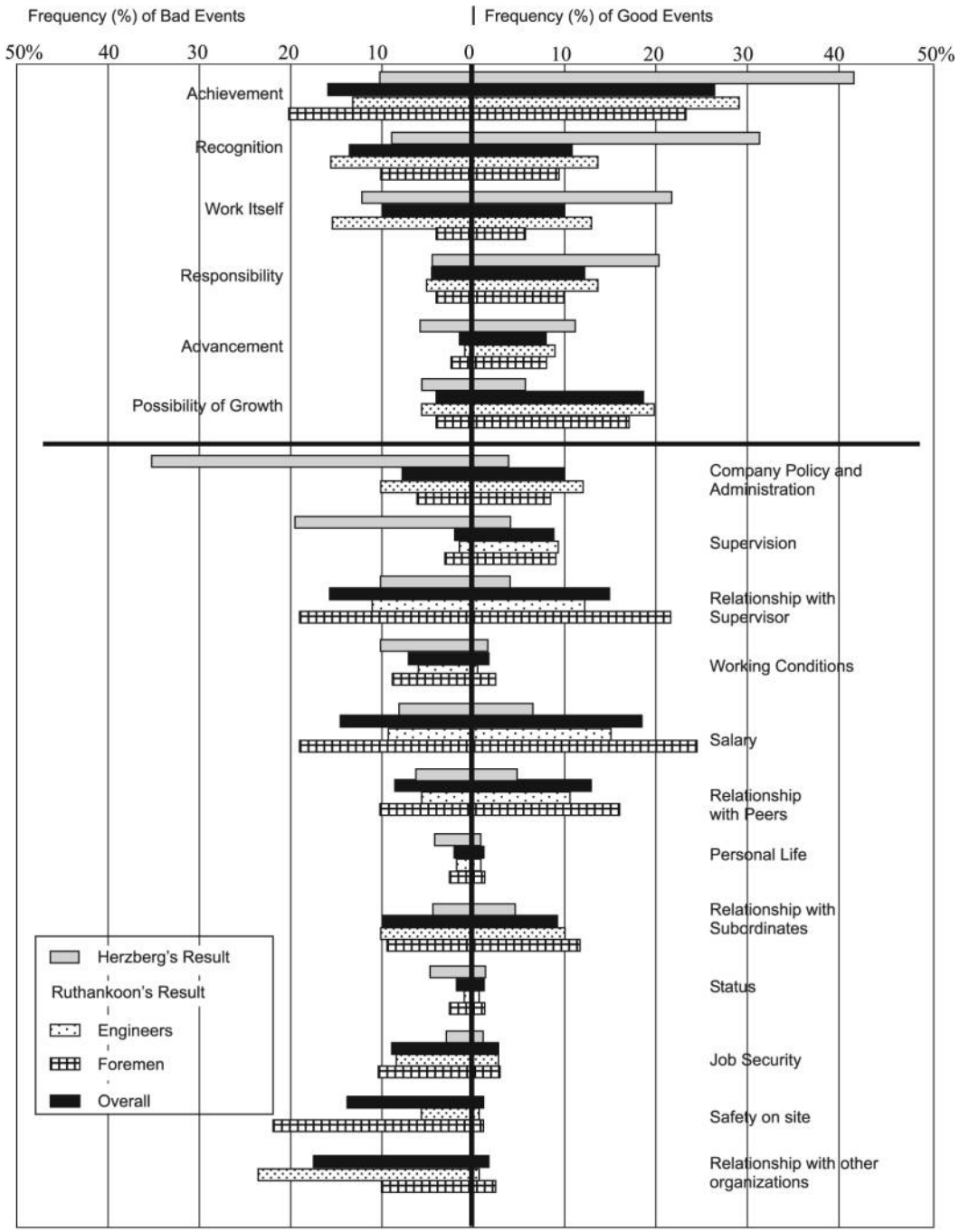
Possibility of growth appears heavily in good events for both samples (good 19 per cent; bad 4 per cent). Most of the good growth events are generated from "growth in skill" which means that the respondents are happy to learn new construction techniques and gain more experience. Growth, therefore, qualifies as an important motivator.

Noticeably, work itself appears with almost equal force in good feeling and bad feeling for both construction engineers and foremen. In Herzberg's study this kind of result was also found in the accountant sample (good 17 per cent; bad 15 per cent) but not in the mechanical engineer sample (good 33 per cent; bad 14 per cent) (Herzberg *et al.*, 1959; pp. 101). By way of explanation, Herzberg remarked that the day-to-day job of engineers is probably more fascinating than the day-to-day job of accountants (Herzberg *et al.*, 1959; p. 102). This would seem to be contradicted in the construction setting because, even though many challenging stories were reported as being sources of job satisfaction, yet many boring events were also mentioned as having negative effects (like supervising brick laying, masonry, and other routine jobs).

Recognition is another factor that contradicts the theory by appearing almost equally on both sides. The motivation power of recognition in this study is much lower than in Herzberg's study. The respondents seem to pay more attention to some other factors.

Responsibility and advancement incline to the motivation side, as in Herzberg's study. Thus, there is no disagreement for these two factors.

Figure 1 Comparison between Herzberg's (1968) and Ruthankoon's (2001) research results



Job context factors

Company policy and administration appears almost equally on both sides for the two samples. This contrasts with Herzberg's work that showed this factor as the most important job dissatisfier. Most of the good and bad events mentioned in this study are related to resources availability and company processes that obstruct construction progress.

Among the job context factors, salary is the first ranked source of job satisfaction (14 per cent for engineers and 24 per cent for foremen). Events concerning good pay were often mentioned as well as high annual bonus. This clearly implies that salary plays a significant role in motivating Thai construction people. On the negative side, it also has rather high influence leading to job dissatisfaction (9 per cent for engineers and 18 per cent for foremen). Judging from the percentages shown, salary has more effect on foremen than engineers.

The frequency of relationship with supervisors is rather high and almost appears equal for both good and bad feelings (good 16 per cent and bad 15 per cent). It is, therefore,

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a bi-polar factor. Relationships with peers and subordinates also inclines towards being a bi-polar factor. More than 50 per cent of the interviewees who commented about interpersonal relations touched on relationship with supervisors, peers and subordinates at the same time. Most of the answers are about good and bad personal relations affecting work coordination. This suggests that interpersonal relations are very important for construction professionals and social relations in workplaces have direct relationships with work coordination both on the positive and the negative side. This result agrees with Borcherding and Oglesby's works (1974, 1975) but contrasts sharply with Herzberg's theory that classified these factors on the hygiene side.

Relationship with other organizations (with project owners and consultants) is separated as a new group because it can not be classified into any of the existing groups. Many problems related to change orders, poor coordination and technical conflicts were mentioned. It is clear from the result that this is an important hygiene factor (17 per cent of bad feeling and 1 per cent of good feeling).

Working conditions and safety on site are considered separately in this study because Herzberg did not make any clear statement on accident events. Working conditions appear as a hygiene factor, it is the same as in Herzberg's theory but its influence is less here.

Site safety appears highly on the bad side, a lot of events related to accident on sites were reported from the foremen sample (22 per cent) but not much from the engineers (5 per cent). Site safety has direct effect on job dissatisfaction for foremen as they work at the construction frontline.

The result for supervision contradicts Herzberg's theory, it inclines towards being a motivation factor rather than hygiene factor (good 8 per cent and bad 2 per cent). This contradiction seems to have occurred because of many good events reported by respondents who were happy when their seniors (both at higher level and the same level) gave them technical advice.

The respondents did not comment much about job status and personal life. These two factors are grouped as bi-polar factors with small effects on satisfaction and dissatisfaction because of the very low percentages appearing nearly with equal force on both sides.

Summary

The two-factor theory has been tested in the Thai construction industry following Herzberg's procedure. The major findings are:

- In the original study, Herzberg grouped factors using their contribution to job satisfaction and job dissatisfaction. In this study, some factors do not appear as in Herzberg's study (see Table II and Figure 1 for comparison). In summary, the result of this test shows that Herzberg's theory is not entirely applicable to the Thai construction industry.
- The motivation pattern of Thai construction professionals has been uncovered. Motivation factors are found to be responsibility, advancement, possibility of growth, and supervision. Hygiene factors are working conditions, job security, site safety, and relationship with other organizations. Recognition, work itself, company's policy and administration, interpersonal relations, personal life and status contributed to both satisfaction and dissatisfaction. Achievement is a motivation factor for engineers but is a bi-polar factor for foremen.

Construction companies can apply these findings in their practical management. The major factors that should be considered are interpersonal relations and salary because they have strong contributions to satisfaction and dissatisfaction. Project managers should create strong relations among project members such as talking nicely to subordinates, solving conflicts among subordinates, and creating an atmosphere for teamwork. In addition, salary, the rate of salary increase, and annual bonus should be structured at appropriate levels based on industry conditions.

To increase job satisfaction, managers should support construction engineers and foremen to learn new techniques. Job rotation, job enrichment or training courses are recommended, as well as encouraging senior people to mentor younger professionals. Giving freedom for decision making and generous praises are also helpful.

Companies should avoid laying off employees (if possible) to prevent job dissatisfaction. Promotion of a site safety program is another way to do so. Relationship

with other organizations is also an important area needing attention. It is better if the contractors, consultants, and designers consider this factor as a cause of dissatisfaction that leads to decrease in project performance and try to avoid negative relationships among project organizations.

Depending on various contextual factors, the motivation pattern of employees may be different. It is hoped that more comparative testing of Herzberg's theory will be done in various work settings and with other testing methods. In addition, empirical relationships among job characteristics, motivation-hygiene factors, and employees' performance are future research topics that should be of interest.

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