

**A STUDY OF FACTORS AFFECTING ENGINEERS' JOB  
SATISFACTION: A CASE STUDY OF THE SMALL POWER  
PRODUCER IN THAILAND**



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**A THEMATIC PAPER SUBMITTED IN PARTIAL  
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entitled  
**A STUDY OF FACTORS AFFECTING ENGINEERS' JOB  
SATISFACTION : A CASE STUDY OF THE SMALL POWER  
PRODUCER IN THAILAND**

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**A STUDY OF FACTORS AFFECTING ENGINEERS' JOB SATISFACTION:  
A CASE STUDY OF THE SMALL POWER PRODUCER IN THAILAND**

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**ABSTRACT**

This research study attempts to examine the factors that affect the job satisfaction of engineers working in the Small Power Producer in Thailand. For this purpose, after the extensive literature review, the qualitative approach was used as a research method. The interview questions were developed and face to face interviews were conducted to determine the factors affecting the engineers' job satisfaction. The respondents for the research comprised 8 engineers who were selected by the purposive sampling method. The results of the study revealed that the job satisfaction of the engineers was influenced by many factors, including teamwork and co-workers, salary, career advancement, supervision, the work itself and the distance between home and workplace. On the other hand, it was found that the demographic variables (age and length of service) have no significant effect on job satisfaction. To improve engineers' job satisfaction in the organization studied and to lead the way for future studies, the findings about job satisfaction and recommendations are discussed.

**KEY WORDS:** Job Satisfaction, Engineer

34 pages

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# CHAPTER I

## INTRODUCTION

### 1.1 Introduction

In recent years, human resources have become increasingly important and are considered as the most valuable asset in most organizations. People are the key resource in bringing success to organizations (Abbasi & Hollman, 2000) and are the key to achieving a competitive advantage for any organization. Boudreau and Ramstad (2007) also state that "whether it is called 'people', 'labor', 'intellectual capital', 'human capital', 'human resources', 'talent', or some other terms, the resources that lie within employees and how they are organized is increasingly recognized as critical to strategic success and competitive advantage". However, in today's highly competitive business environment, many organizations face challenges and are under pressure to retain their employees. Especially, skilled employees like engineers who have specific knowledge and practical skills, tend to leave their current jobs if they are offered better opportunities by other organizations (Hashim, 2015). This causes negative effects to the organization as the loss of intellectual capital may lead not only to a drop in productivity, but also increases costs because of recruitment and training. Furthermore, it requires heavy investment in terms of time, money and other resources to train and develop new incumbents to bring them up to the desired level of performance (Mitchell et al., 2001). To avoid losing valuable employees, several studies have found that employee retention and turnover have a close correlation with job satisfaction. According to Moore (2002), people are willing to resign when they feel under a lot of pressure or they do not get the job satisfaction that they expect. On the contrary, employees who are satisfied with their jobs are more likely to be less frequently absent, to make positive dedications, and to be loyal to the organization (Griffin & Moorhead, 2012). To be specific, the most important tool to retain employees is to improve their job satisfaction.

Job satisfaction has been defined by researchers in many ways, but one of the most often cited is provided by Spector who states that job satisfaction has to do with how people feel about their jobs and their various aspects (Spector, 1997). Job satisfaction represents the emotional feelings and thinking regarding the jobs of the employees. There are many factors which affect job satisfaction such as compensation, growth and development, relationships with co-workers, supervisors, the work itself, working conditions, policies, age, and status.

## **1.2 About the Organization**

The organization in this study is considered to be a Small Power Producer (SPP). A Small Power Producer (SPP) is defined by the Electricity Generating Authority of Thailand (EGAT) as a private or state enterprise where electricity is generated (a) from non-conventional sources such as sun, wind, or fuels, or (b) from conventional sources (oil, natural gas, coal) and using cogeneration (units capable of producing both steam and power). The organization studied is under contract for a cogeneration system where 60 tons per hour of steam and 240 MW of electricity are generated. It is located in Bang Poo Industrial Estate with a present workforce of about 80 employees most of which are skilled workers who are technicians and engineers operating a 24/7 service plant.

## **1.3 Problem Statement**

Engineers are a major human resource and considered to be a valuable asset in this organization, however, the turnover rate is high. Therefore, it has become a primary concern for the organization to explore the options to retain their employees. It is for these reasons that job satisfaction has been selected for the topic of this study. Thus, this study aims to examine factors that affect job satisfaction and find the relationship between job satisfaction and demographic variables among engineers in the SPP.

## 1.4 Objectives of the Study

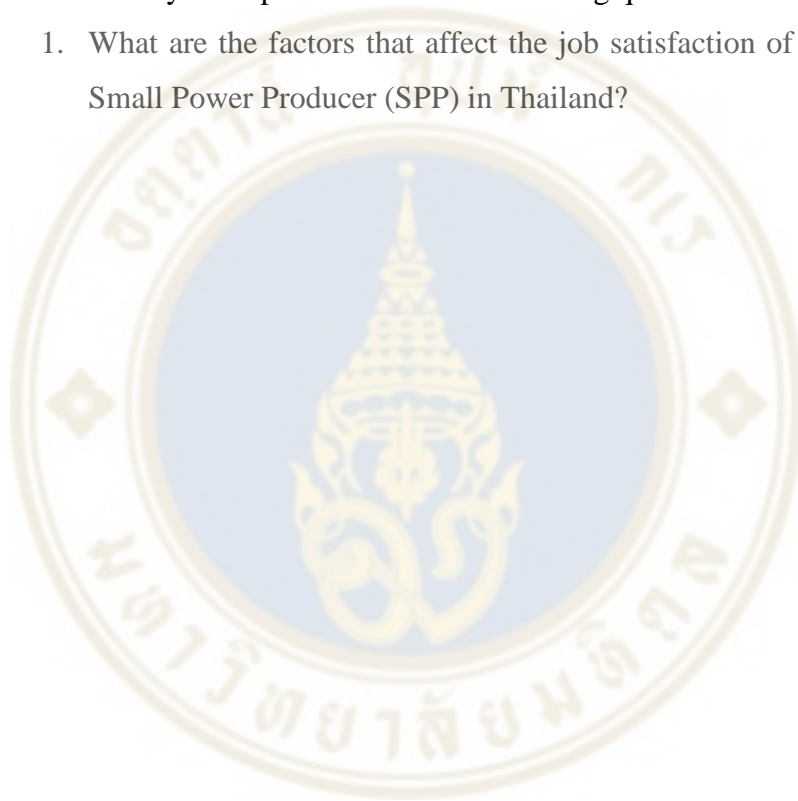
The purpose of this study is :

1. To determine the factors affecting the job satisfaction of engineers in the organization under study.

## 1.5 Research Question

This study attempts to answer the following questions:

1. What are the factors that affect the job satisfaction of engineers in the Small Power Producer (SPP) in Thailand?



## **CHAPTER II**

### **LITERATURE REVIEW**

The purpose of the research study is to identify the factors influencing job satisfaction among engineers in the Small Power Producer (SPP) in Thailand. In this chapter, a broad definition of employees' job satisfaction is provided. A review of the existing literature and research that pertains to theories and concepts related to job satisfaction are also discussed in order to identify the variables that significantly affect the job satisfaction of engineers in SPP in Thailand.

#### **2.1 Concept of Job Satisfaction**

In this section, the sub-topics relevant to job satisfaction are reviewed. The definitions of job satisfaction and the factors that affect job satisfaction are also provided.

##### **2.1.1 Definitions of Job Satisfaction**

There are several definitions of job satisfaction in the literature in various contexts. According to Locke (1976), job satisfaction is "the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values". It can be defined as the positive attitude of an employee towards his/her company, co-workers and the job itself (Sypniewska, 2013). Another definition of job satisfaction is provided by Spector (1997). He states that job satisfaction is "the extent to which people like/satisfied or dislike/dissatisfied with their job." In summary, job satisfaction can be described as a positive attitude or feeling that people have toward their work or other aspects of their work.

### 2.1.2 Factors Influencing Job Satisfaction

There are various factors which influence job satisfaction which are related to both internal and external aspects. The main factors that influence employees' job satisfaction are the work itself, pay, promotion opportunities, supervision, work-groups and demographics (age and length of service).

*The work-itself:* The work itself is a critical source of satisfaction (Luthans, 1992). Arunpraphun (2002) states that the work itself is one of the major job-related motivational factors which are related to the job itself and autonomy. Some of the key elements that lead to job satisfaction are work which is not boring but challenging and which provides workers with job status (Luthans, 1992).

*Pay:* According to Blue (2005) who refers to Luthans (1998), salary is an extrinsic reward and instrument that not only helps people to obtain their basic needs but also provides a higher level satisfaction of needs. Pay is perceived by employees as a reflection of their contribution to the organization as viewed by management (Arunpraphun, 2002). Pay can help satisfy and motivate employees to perform their best. The organization can also attract and retain highly qualified employees. However, if employees feel dissatisfied with their salary, it can lead to strikes, grievances, absenteeism, turnover, and sometimes lead to poor physical and mental health as well (Schemerhorn et al., 2000).

*Promotion Opportunities:* The opportunities for promotion are also likely to have various effects on job satisfaction since promotions provide different forms of reward (Luthans, 1992). Robbins (1998) states that personal growth and increasing responsibility as well as social status are provided by opportunities of promotion. Many people gain satisfaction when they see opportunities for advancement and growth existing in the organization. However, a decrease in job satisfaction will occur when employees perceive that they have limited opportunities for advancement in their careers (Drafke and Kossen, 2002) or they feel that the promotion policy is unfair. Therefore, it is essential to consider whether promotion policies are created to increase employee satisfaction (Luthans, 1992).

*Supervision:* According to Luthans, 1992, another moderately important source of job satisfaction is supervision. Supervisory style is divided into two dimensions. The first dimension is employee-centeredness, when a supervisor

provides support, assistance, and advice to the employee. Research indicates that if subordinates gain support and co-operation from their supervisors in completing their tasks, their job satisfaction is likely to be increased (Ting, 1997). Another dimension is participation or influence, when a supervisor allows a subordinate to participate in decision making. Chieffo (1991) indicates that allowing subordinates to have autonomy in making decisions in their jobs will lead to job satisfaction at a higher level.

*Work group:* Work groups are about the co-operation and understanding among co-workers or team members that affect job satisfaction or dissatisfaction. Good co-workers and an effective team usually make the job more enjoyable and lead to effectiveness within a group. Some research has indicated that the better the relationship, the greater the level of job satisfaction (Wharton and Baron, 1991). In contrast, if co-workers or colleagues are difficult to get along with, there will be a negative impact on job satisfaction. (Luthans, 1998).

*Demographics:* Demographic characteristics, including age and length of service, have been found to influence job satisfaction.

- Age: Most studies indicate a positive relationship between age and job satisfaction with older people being more likely satisfied with their jobs (Homchan, 2006). Okpara (2004) explains that older employees seem to have higher levels of satisfaction with their jobs than younger people due to the fact that prestige and confidence are likely to increase with age.
- Length of service: Length of service is the period of time that employees have been working in an organization. Homchan (2006) states that employees who have longer length of service at the same organization tend to be more satisfied with their jobs than those who have a shorter length of service as they are more likely to have adjusted to their working environment and they will be familiar with how to obtain more resources in the workplace. Gordon and Johnson (1982) as cited by Nyame-Mireku (2012) state that tenure and age have a positive correlation with job satisfaction. In some organizations, the rights and benefits of employment increase relative to the length of service.

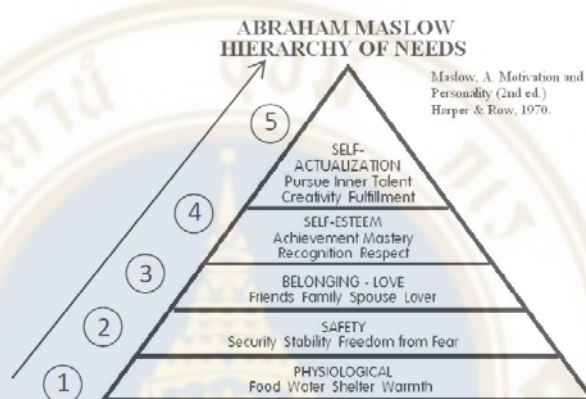
## **2.2 Theories Related to Job Satisfaction**

To further understand the basic concept of job satisfaction, the theory behind job satisfaction must also be understood. Over the years, researchers have studied a number of theories in an attempt to explain job satisfaction. Two particular theories that cover satisfaction are Maslow's Hierarchy of Needs and Herzberg's Two-Factor Theory. These theories are described and discussed below.

### **2.2.1 Maslow's Hierarchy of Needs**

The most well-known theory in the area of motivation and satisfaction is Maslow's Hierarchy of Needs. Maslow (1943) states that human needs can be developed in the form of a five-level hierarchy (Arunpraphan, 2002). According to Maslow's theory, in order for a higher level need to be satisfied, the lower-level needs must be fulfilled (Kea, 2008). The five-level hierarchy of needs is allocated in the pyramid as shown in Figure 2.1. It starts with the lowest level which is known as physiological needs. These needs are defined as the most basic physical requirements including food, shelter, medicine, and clothing. In other words, this level of needs can be fulfilled by wages, bonus, and welfare because employees usually set their wages as their priority need and consider the working environment and work-life balance as important factors as well when they consider if they are satisfied with their conditions or not. (Sadri and Bowen, 2011). Once the physiological needs have been fulfilled, the next level of need to be satisfied is safety. Examples of these needs include physical safety, financial stability, job security, and protection against danger and emotional harm (Arunpraphan, 2002). Employees need a workplace that provides them with a sense of safety both physical and mental. Their lives must be safe in the working environment as well. In addition, job security and retirement plans should be provided to create trust and loyalty in the employees (Sadri and Bowen, 2011). When the physiological and safety needs are satisfied, then social needs become activated. These needs are for social beings, affection, friendships as well as intimate connections. At this level, the main focus is the relationships among the employees in the organization. Therefore, the social program of a company is also important in order to create friendships (Chivatanaporn, 2014). After the three previous needs have been met, the next level in the hierarchy is self-esteem which is a higher level that includes self-

image, self-respect, autonomy, achievement, recognition, and status. However, this level of needs might not be found in every employee. Sadri and Bowen (2011) state that "it would be found mostly in older people who seek pride, praise, high responsibility, recognition, and respect. Self-actualization is the highest level of Maslow's Hierarchy of Needs. It's about human potential, self-fulfillment, personal growth and a desire "to become everything one is capable of becoming" (Maslow, 1987, p. 64).



**Figure 2.1** Maslow's Hierarchy of Needs (Kunc, 1992)

### 2.2.2 Herzberg's Two-Factor Theory

Herzberg's two-factor theory is known as the motivation-hygiene theory. Herzberg et al. (1959) suggest that motivation and job satisfaction are influenced by two distinct set of factors. The first set of factors is hygienic factors including company policy, supervision, relationships with peers, subordinates and supervisors, salary, working conditions, personal life, status, and security (Riley, 2005). These factors are related to the job context and more extrinsically focused which do not lead to satisfaction, but help to minimize and prevent what can cause dissatisfaction. When hygiene needs are fulfilled, employees will be satisfied and they will be dissatisfied when they are not fulfilled (Jones and George, 2007). The second set of factors is motivator factors including achievement, recognition, interesting work, responsibility, and advancement and growth (Herzberg et al. 1959). These factors are related to job content and more intrinsically focused which help to create and develop job



satisfaction (Robbins and Judge, 2013). According to the theory, the two sets of factors operate independently, which means hygiene factors affect the increase or decrease in job dissatisfaction while the motivation factors can only increase or decrease job satisfaction.



**Figure 2.2 Herzberg's 2-Factor Theory (Chivatanaporn, 2014)**

### 2.3 Previous Studies on Job Satisfaction

Several studies have been found that job satisfaction is influenced by a number of factors.

Ganiron (2017) studied the job satisfaction of structural engineers in the Association of Structural Engineers of the Philippines (ASEP). According to the results of the study, it was revealed that structural engineers were satisfied with many factors such as autonomy, achievement, career advancement, company policies, compensation, colleagues, supervision, and working conditions. It was found that gender and civil status had significant effects on overall job satisfaction as well, but age was not a predictor of overall satisfaction or its other dimensions.

According to Woods (2015), who studied the factors which affected engineers and non-engineers in a public sector Midwestern transportation agency. The findings suggest that engineers were impacted by extrinsic job characteristics and work environment more so than non-engineers, while non-engineers were more impacted by job design. The study also found that demographic variables had little impact on job satisfaction.

Buranasiri (2014) studied job satisfaction of Gen-Y at the Electricity Generating Authority of Thailand (EGAT). Data for the study were collected by in-depth interviews of 10 participants including 2 procurement officers, a business planner, an economist, a scientist, a lawyer, and 4 engineers. The study showed that there are 5 factors which affected job satisfaction at Gen-Y at EGAT which are 1) career path and advancement, 2) teamwork and colleagues, 3) Work-Life Balance (WLB), 4) work environment and conditions, and 5) feedback-support and individual respect.

Homchan (2006) examined job satisfaction levels among 40 warehouse employees at DHL Logistics (Thailand) Company and the relationship between their personal background and job satisfaction. A questionnaire was used to collect the data. The results indicate that warehouse employees who were most satisfied with supervisors and co-workers and had good relationships led to their job satisfaction. However, warehouse employees who were least satisfied were not satisfied with career advancement, working conditions, compensation, and company policy. In addition, personal background such as age, marital status, and length of working time, were significantly correlated with their job satisfaction. Young employees were most satisfied with supervisors and coworkers. On the other hand, employees over the age of thirty were most satisfied with work. Married employees were most satisfied with work and self-esteem, but least satisfied with compensation. Warehouse employees with over two-years' working experience in DHL were satisfied with work, working conditions, and fringe benefits.

Chiyachantana (1994) conducted a survey to compare job satisfaction of engineers working in government and private enterprises in Thailand. The data were collected by a questionnaire which was completed by 445 engineers; 212 engineers in government and 233 engineers in private enterprises. A demographic questionnaire was utilized to gather information about age, sex, and length of work experience and the Index of Organizational Reaction (IOR), developed by Smith (1962, 1976), was used to measure job satisfaction subscales including career future, co-workers, company identification, supervision, financial rewards, kind of work, and physical work conditions. The study indicated that engineers in private enterprises were significantly more satisfied with those job satisfaction subscales than engineers who

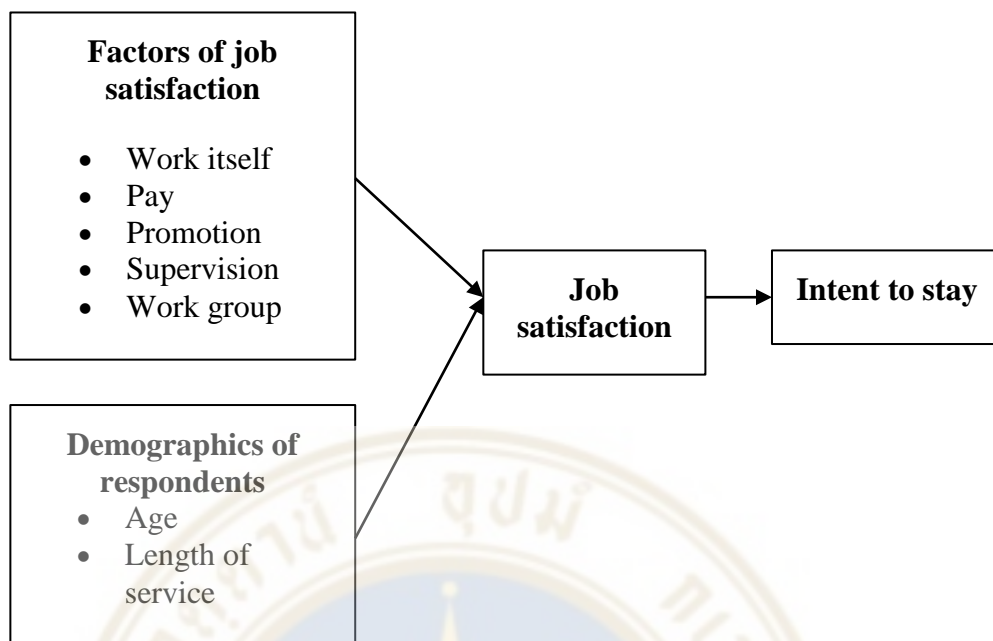
worked in government sectors. The study also revealed that older engineers were more satisfied with all job satisfaction dimensions than younger engineers in both types of organizations. In addition, recently employed engineers were less satisfied with all the dimensions of job satisfaction than longer employed engineers in both organizations.

According to the above studies, it has been shown that previous studies related to job satisfaction were conducted to explore the factors affecting employees' job satisfaction in different sectors and different countries. Also, there were several factors affecting employees' job satisfaction. Furthermore, many other studies had shown similar results. For example, career advancement, co-workers, and supervisors were found to have an effect on employees' job satisfaction (Ganiron, 2017; Buranasiri, 2014; Homchan, 2006; and Chiyachantana, 1994). In addition, pay, kind of work, and working conditions were the factors affecting job satisfaction as well (Ganiron, 2017; Chiyachantana, 1994). On the other hand, there were different results on the demographic variables. Woods (2015) found that demographic variables had little impact on job satisfaction compared to the study of Chiyachantana (1994) which found that older engineers were more satisfied with all job satisfaction dimensions than younger engineers. Chiyachantana also mentioned that longer employed engineers were more satisfied with all dimensions of job satisfaction than recently employed engineers. In contrast, Ganiron (2017) stated that age was not a predictor of overall satisfaction or its other dimensions.

This research study would like to focus on the factors affecting engineers' job satisfaction in the Small Power Producer in Thailand.

## **2.4 Conceptual Framework**

The study was guided by the conceptual framework as shown in Figure 2.3 that presents factors such as the work itself, pay, promotion opportunities, supervision, and work groups which could lead to engineers' job satisfaction.



**Figure 2.3** The Conceptual Framework

## **CHAPTER III**

### **RESEACRH METHODOLOGY**

This research is conducted in the organization being studied which was selected as a case study in order to identify the factors that affect the job satisfaction of engineers in the Small Powers Producer in Thailand. In this chapter, the research methods include the research design, sample and data collection and the interview questions which were used to conduct the study are described.

#### **3.1 Research Design**

In an effort to identify the factors that affect engineers' job satisfaction in the organization under study, a qualitative approach is used as the research method. Mack et al. (2005) state that "the strength of qualitative research is its ability to provide complex textual descriptions of how people experience a given research issue. It is especially effective in obtaining culturally specific information about the values, opinions, behaviors, and social contexts of particular populations". More specifically, the qualitative approach allows the researcher to explore, interpret, gain richness of data, and deeper understanding of a specific social context or phenomena of interest. Therefore, a qualitative approach will be used in this research.

There are many methods of data collection (e.g. interview, focus group, observation) used in qualitative research. These methods usually involve direct interaction with individuals on a one to one basis or in a group setting (Hancock, 2002). For this research, in-depth interviews will be adopted to identify the factors that affect engineers' job satisfaction. According to Mack et al. (2005), in-depth interviews are an optimal way for collecting data on individuals' personal background, perspectives, and experiences, particularly when sensitive topics are being explored. The in-depth interviews involve a series of open-ended questions which allows interviewees to contribute their perspectives and experiences and provides them the

opportunity to respond in their own words, more elaborately, and in greater detail than would be possible with a fixed answer format. The interviews were be semi-structured interviews where interviewees have to answer preset open-ended questions on the basis of a semi-structured interview guide. This allowed interviewees the freedom to express their views which may have encouraged them to answer more fully something interesting and meaningful to the current study (Watanapane, 2014). In addition, it provides the interviewer an opportunity to ask follow-up questions to probe and collect detailed information from what the interviewees say.

### 3.2 Sample and Data Collection

In this research, semi-structured interviews were used to collect data from 8 engineers to determine the factors affecting their job satisfaction. The 8 interviewees were selected by the purposive sampling method. According to Black (2010), purposive sampling occurs when "elements selected for the sample are chosen by the judgment of the researcher". Therefore, the researcher has chosen interviewees from different backgrounds whose age, work position, and working experiences vary in order to obtain various perspectives and information. The list of the interviewees is given below.

**Table 3.1 The Respondents' Profiles**

No.	Age	No. of years with the organization	Position
1.	32	2	Maintenance Engineer
2.	36	1	Mechanical Engineer
3.	33	1.10	Maintenance Manager
4.	28	2.8	Control Room Operator

**Table 3.1 The Respondents' Profiles (cont.)**

No.	Age	No. of years with the organization	Position
5.	32	2	Control Room Operator
6.	29	2	Electrical Engineer
7.	27	0.10	Field Operator
8.	26	0.7	Control & Instrumentation Engineer

All interviewees were asked the same set of key questions on topics that needed to be covered during the interview, but follow-up questions were asked based on the answers provided to ensure that the researcher covered all the necessary information. Each one-to-one interview was conducted in a private and quiet room and lasted approximately 30 minutes. In order to capture the interview data more effectively and to ensure that the research did not miss any key points, a voice recording and notes were taken during the interviews. After the interviews were transcribed and analyzed, the data was destroyed for confidentiality purposes.

### 3.3 Interview Questions

Before asking the interviewees questions, the research objectives were described to the interviewees in order to clarify the purpose and reason for conducting the research. Then, building a rapport with the interviewees was developed at the beginning of the conversations to help reduce the tension and made the interviewees feel more comfortable to share their opinions and thoughts freely. The open-ended interview questions as well as the probing questions used to elicit information from the 8 interviewees are listed below.

1. Please describe your demographic information.
  - a) What is your age?
  - b) What is your working position?
  - c) How many years have you worked in this current position?
2. What are your role and responsibility?
  - a) Take me through your typical routine at work.
  - b) Tell me about a responsibility of your current position that you really enjoy
3. Why did you decide to work for this organization? Can you explain?
4. How long have you been working in this organization?
5. How do you feel about working here?
  - a) What makes you feel like that?
  - b) Could you give me some examples of what makes you happy/satisfied working here?
6. What is the main factor/ reason that you continue working at this organization?
7. Are you satisfied with your current job?
  1. Why do you say that?
8. What is your view on your pay package and benefits that you have in your role?
9. Do you think that your compensation is adequate in comparison with others within the same company?
  - a) How does that impact on you and your work
  - b) Why do you say that?
10. What are your overall feelings regarding your salary?
11. What are your feelings regarding opportunities for promotion or advancement in this organization?
12. Does the organization offer you opportunities for promotion or career advancement?
  - a) What do you think about that?
  - b) Does it matter to you? Why?



13. Do you prefer to work with a team or individually?
  - a) Why do you say that?
14. Do you have a good relationship with your team?
  - a) Why do you say that? Please give me an example of why you think you have/don't have a good relationship.
  - b) Is it important for you to have a good relationship? Why?
15. What's the size of the team you work with or the organization as a whole?
16. How well do members of your team share responsibility for tasks?
17. How do you feel about your team?
18. Please describe the relationship with your supervisor in the time you've been here?
  - a) Could you say some more about that?
  - b) What do you mean by that?
19. Does your supervisor support you and allow you to share ideas?
  - a) Would you please give me an example?
  - b) How do you feel about that?
20. Overall, are you satisfied with your supervisor? Why?
  - a) What factors make you most satisfied at work? Why?

To increase the richness of the data that the researcher obtained, the following questions were used to encourage the interviewees to elaborate, to explain in detail, or to give examples of some issues.

- Would you please give me an example?
- Do you have further examples of this?
- Could you say some more about that?
- What do you mean by that?
- That's interesting, What makes you say that?
- Is there anything else you would like to say?
- I am not quite sure I understand what you are saying, can you please say it again?
- I heard...Did I understand you correctly?
- Can you please summarize what you just said?

## **CHAPTER IV**

### **FINDINGS AND DISCUSSION**

In this chapter, the findings from the interviews of 8 respondents who are working as engineers in this organization (SPP) about the factors that affect their job satisfaction are presented. The data were collected by semi-structured interviews developed for this research in July 2018 to determine the factors that affect engineers' job satisfaction. The results of the interviews are divided into two parts:

1. Demographic information of respondents
2. Factors affecting engineers' job satisfaction

#### **4.1 Demographic Information of Respondents**

There are 8 male respondents in this research who are working as engineers in this organization (SPP). The age of the interviewees is 26 – 36 years old with a length of service of less than a year to three years. The interviewees who participated in this interview are working in different engineering fields including Maintenance Engineering, Mechanical Engineering, Electrical Engineering, Control and Instrumentation Engineering, and Operation Engineering.

#### **4.2 The Factors Affecting Engineers' Job Satisfaction**

A discussion follows of the findings from the interviews of 8 respondents in accordance with the research question “What are the factors that affect the job satisfaction of the engineers in Small Power Producer (SPP) in Thailand?”

##### **Teamwork and co-workers**

According to the interview, teamwork and co-workers are considered to give the most job satisfaction to the participants. Seven out of eight of the participants mentioned that the relationships, communication and cooperation with co-workers and

with the team were very satisfactory.

*“I think I am lucky that I have good colleagues and a good supervisor whom I feel comfortable talking to at any time. I also have a good team where everybody is responsible for his work and helps each other to accomplish the task. These are the main reasons that I continue working here and want to come to work every day.”* **Resp#4 Shift Supervisor**

*“The main factors for staying in this company are the co-workers and the team. I get along with them very well. I enjoy working with my team and prefer to work as a team because we always share ideas, discuss, and help each other to cross-check in order to achieve the goals with the best results.”* **Resp#6 Electrical Engineer**

These comments show that the engineers have a good relationship with their co-workers. This may be because most of the engineers always spend their work and much of their lives together which can result in better relations between them. In addition, this also reflects that each of them knows the specific role they have to play in accomplishing tasks and that they are happy working as a team as it encourages them to share ideas and responsibility in achieving their goals. Most of the respondents feel that their co-workers are cooperative, supportive, and responsible in doing their jobs. This leads to a more enjoyable working environment and greater job satisfaction.

Therefore, it can be concluded that having a good relationship, communication and cooperation with co-workers and a team are considered as very important factors that affect engineers' job satisfaction. This result is similar to that of Homchan (2006) who studied the job satisfaction levels of warehouse employees at DHL Logistics (Thailand) Company where employees were most satisfied with their co-workers and these good relationships can lead to increasing levels of employees' job satisfaction.

### **Salary**

Similar to the first-mentioned factor, seven out of eight participants said that money is important to them and that they are satisfied with the salary that the organization pays them. The salaries at SPP are attractive. Salaries that match the responsibilities and positions also contribute to job satisfaction at SPP.

*“I decided to work here not only because of the career advancement but also because of the salary that this company gives me.”* **Resp#2 Mechanical Engineer**

*“I admit that the salary is the main factor that decided me to leave my previous job and work here. I am satisfied with my current salary as it matches my responsibilities and position. Also, compared with my previous company, this company gives me a higher rate of pay.”* **Resp#8 Control and Instrumentation Engineer**

The data from the interviews shows that most of the engineers are satisfied with the salaries, but some of them also mentioned that they want the company to establish a salary structure and to make salary increases clearer, up to standard and reasonable.

#### **Career advancement**

Six of the eight respondents said that they are satisfied with the advancement or promotion path provided by the company. They mentioned that working in this organization offers them the opportunity to develop their careers as everybody has a chance to be considered for a raise or promotion based on his abilities and performance not on length of service.

*“At my previous workplace, they often promoted a person who had worked with the organization for a long time. But in this company, they don’t promote people based on their length of service, but instead on their abilities and skills. This gives more satisfaction and encourages me to work harder. If the company didn’t give me the opportunity to prove myself but only focused on length of service year, I might not be in this position.”* **Resp#4 Shift Supervisor**

In addition, most of the engineers also mentioned that when the right time comes they expect to change their working status through promotion and opportunity for growth and advancement. They will be satisfied if they have that opportunity, but if not they may consider leaving the organization.

*“I think the promotion policy here can make me develop faster than in my previous workplace. Since I have just started working here I haven’t yet received any career advancement, but if I get promoted, it will make me happy.”* **Resp#7 Field Operator**

*“I feel good that I got the opportunity to be promoted to an Assistant Maintenance Manager. However, if I stay in this position without an opportunity for development and promotion for a long time, I will have to consider leaving the company to prove myself somewhere else”.* **Resp#1 Maintenance Engineer**

These results show that career advancement is important to motivate engineers to perform with their full potential, prove themselves as professionals, and make them to feel a sense of achievement in their careers. Seeing equal opportunities for a future career path in the organization, many of them believe that they will be considered for promotion at the right time and that they will also still have more opportunities for their professional growth and advancement. However, if the organization does not provide opportunities for career advancement, this may lead to a decrease in their job satisfaction and they may consider leaving the organization. This information clearly shows that career advancement is an important factor in contributing toward engineers’ job satisfaction. Thus, the results of this research are consistent with Herzberg’s Theory. According to Herzberg’s Two-Factor Theory (1966), advancement and growth are one of the motivator factors. When this factor is fulfilled, it can build strong levels of employee motivation and satisfaction.

### **Supervision**

According to the interviews, supportive supervisors are considered to be one of the factors affecting engineers’ job satisfaction in the same way as career advancement. Six out of the eight participants explained that their supervisors are always supportive and engage them in decision making as well as giving them the freedom to carry out their own responsibilities. Most of them get along well with and feel satisfied with their supervisors.

*“My supervisor is a good leader who always gives clear directions on what to do and is open to ideas and discussion. He is very supportive. He always gives me guidance and feedback. I get along well with him as we are the same age and started working in this company at the same time. I feel like he is my brother and I am very happy to work with him.”* **Resp#1 Maintenance Engineer**

*“My supervisor always gives me the opportunity to share ideas and make decisions. He gives me the freedom to do my work. He always gives me support and sometimes teaches me how to do the work when necessary.”* **Resp#5 Control Room**

## Operator

*“I have a very good relationship with my supervisor and we work together well. If there is a change in the position of manager and I can not get along with the new manager, I might consider leaving the company.”* **Resp#4 Shift Supervisor**

From the above comments, it is clear that style of supervision and the relationship between supervisor and employee are crucial. Most of the engineers need quality supervision from their supervisors and they want to work in the organization with supervisors who support them and can get along with them. Thus, supervision is one important factor that affects their job satisfaction.

### Work itself

Five of the participants described the nature of the work itself as interesting and challenging. They enjoy doing their work as they feel that they are utilizing their skills and abilities to the fullest potential. This also encourages them to acquire more advanced knowledge and skills to develop their specialization at the same time.

*“I studied engineering and I have no experience in a power plant. Working here is very different from what I used to do and I think that there are many things that I have to learn about my job. So, it’s interesting and quite challenging for me.”* **Resp#1 Maintenance Engineer**

*“I am responsible for a variety of tasks. I work both shifts and regular hours. These different kinds of work let me experience both working individually and participating in a team. My job is a long way from boring. I feel that my job is still challenging and I want to learn more about it.”* **Resp#5 Control Room Operator**

Apart from these five factors, this research reveals that there is one more factor that affects engineers’ job satisfaction which is the **distance between home and workplace** but it was barely mentioned. However, the study found that the demographic variables of age and length of service of the participants had no significant effect on the overall job satisfaction of the engineers. The findings of this research show that most of the participants’ answers are slightly different. Many participants of different ages and length of service answered in the same way saying that they are most satisfied with the co-workers, teamwork and salary. In addition, in

the interview, all of them said that overall they are satisfied with their current job and would like to continue working in this organization.

### **Distance between home and workplace**

From the interview data, the distance between home and workplace has an effect on the job satisfaction of three of the engineers who mentioned that one of the main reasons that they decided to work in this organization is because it is located near their home and families as well so they do not have to waste a lot of time and money traveling to work.

*“I decided to work here because my home is not far from here and I want to spend more time with my family. It is convenient to go back and forth from home to work. I feel that this place is the best choice for me”.* **Resp#3 Maintenance Manager**

*“I live on Rama 2 while other power plants are normally located upcountry in places like Ayutthaya or Rayong province, so this is the nearest power plant in the area which is very convenient for me to come to work without wasting quality time and high costs of transportation”.* **Resp#6 Electrical Engineer**

However, this factor was not mentioned in previous studies. It has been found that these results are consistent with the study of Lao-a-roon (2015) who investigated the determinants of the turnover in engineers in Thailand. According to his study, the distance to the workplace is one of the determinants that slightly effect the turnover of engineers. As employee retention and turnover have a correlation with job satisfaction, it can be assumed that the distance between home and workplace is a factor that can affect job satisfaction.

Among the 8 respondents, there were several factors that affect their job satisfaction. The results of the interview are presented in the table below.

**Table 4.1 The interview results showing the factors affecting the engineers' job satisfaction**

<b>Respondent No.</b>	<b>Age</b>	<b>Length of employment</b>	<b>Position</b>	<b>Factors affecting job satisfaction</b>
1	32	2	Maintenance Engineer	- Work itself - Teamwork and co-workers - Supervision - Career Advancement - Salary
2	36	1	Mechanical Engineer	- Career Advancement - Salary - Work itself
3	33	1.10	Maintenance Manager	- Close to home - Teamwork and co-workers - Salary - Career Advancement - Supervision
4	28	2.8	Control Room Operator	- Teamwork and co-workers - Work itself /challenge - Career Advancement - Supervision - Salary
5	32	2	Control Room Operator	- Teamwork and co-workers - Supervision - Work itself - Career Advancement - Salary



**Table 4.1 The interview results showing the factors affecting the engineers' job satisfaction (cont.)**

<b>Respondent No.</b>	<b>Age</b>	<b>Length of employment</b>	<b>Position</b>	<b>Factors affecting job satisfaction</b>
6	29	2	Electrical Engineer	<ul style="list-style-type: none"> <li>- Teamwork and co-workers</li> <li>- Close to home</li> <li>- Salary</li> <li>-Career Advancement</li> </ul>
7	27	0.10	Field Operator	<ul style="list-style-type: none"> <li>- Teamwork and co-workers</li> <li>- Supervision</li> <li>- Work itself</li> </ul>
8	26	0.7	Control & Instrumentation Engineer	<ul style="list-style-type: none"> <li>- Teamwork and co-workers</li> <li>- Close to home</li> <li>- Salary</li> <li>- Supervision</li> </ul>

## **CHAPTER V**

### **CONCLUSION AND RECOMMENDATIONS**

This chapter presents the conclusion and limitations of this research study. In addition, some recommendations for further research are also made.

#### **5.1 Conclusion**

The purpose of this research was to determine the factors that affect the job satisfaction of engineers working at the Small Power Producer in Thailand. After an extensive literature review focussed on the main factors for job satisfaction and related to job satisfaction theories which are ‘Maslow’s Hierarchy of Needs’ and ‘Herzberg’s Two-Factor Theory’, interviews were used for the data collection. This research was conducted in July 2018 with 8 selected engineers who are working at SPP and the data from all respondents were analyzed to determine the factors affecting the engineers’ job satisfaction and to answer the research question.

The findings of this research reveal that ‘teamwork and co-workers’ and ‘salary’ are the most influential factors affecting engineers' job satisfaction. The results also reveal that the engineers are quite satisfied with their supervision as they have a good relationship with their supervisors who provide them with support and allow them autonomy. Moreover, most engineers see their career advancement in this organization and they are looking for the opportunities for promotion provided by the organization. This accounts for the high level of satisfaction with regard to the career advancement factor. The work itself is also considered to have an effect on job satisfaction as many of the engineers continue working in this organization because they find their jobs interesting and challenging. Additionally, the research found that there is one more factor that affects the engineers’ job satisfaction which is the distance between their homes and the workplace. However, this demographic factor did not show any relation to the overall job satisfaction of the engineers in SPP.

The literature review shows that the results of this study are similar to those of previous research, except for the distance between home and workplace. The

results are also supported by Maslow's Hierarchy of Needs Theory (1943) proposes that people normally seek satisfaction and motivation through a hierarchy of needs. This research has shown that most engineers are most satisfied with their salary and relationship with co-workers followed by career advancement, which can be identified as physiological needs and psychological needs, respectively. These reflect that the engineers' satisfaction starts from the most basic needs and moves up to higher level needs. However, some interesting points regarding Herzberg's Two-Factor Theory were explored. Based on this theory, the findings of this research can be divided into hygiene factors: salary, relationship with supervision and co-workers, and motivator factors: career advancement and the work itself. It was explained previously that hygiene factors can decrease job dissatisfaction or give no satisfaction, but not cause satisfaction. However, when the engineers were asked about what give them job satisfaction, most of them mentioned that salary and relationships with team and co-workers are the factors that give them the most satisfaction. These factors are considered as hygiene factors. Therefore, it can be concluded that hygiene factors can motivate and lead to job satisfaction like the motivator factors for engineers who are working in SPP.

## **5.2 Recommendations**

To retain valuable employees especially engineers who are the major players in the workforce and play a particularly important role in this organization, the findings of this research indicate that management should play a leading role in helping the organization to create or develop policies to give the engineers' job satisfaction.

First, this can be achieved by not only providing highly competitive salary packages for the engineers but the organization should also make their reward systems transparent and reasonable in the organization, especially with respect to salary raises. This would make the employees feel that the company treats them with respect, compassion, and fairness. This can be done by creating an effective performance appraisal system in the organization and linking it to salary levels. This will make the employees feel more satisfied when working for this organization.

Second, the organization should maintain and enhance a good relationship in the workplace, especially the relationship between co-workers and subordinates to supervisors. Activities like team building are required to strengthen the relationship between employees. In addition, when the organization needs a new position or a replacement, management should consider selecting a person based on both their hard and soft skills. This will help the organization to recruit employees who are will not only be able to to perform their job well, but who will be able to get along well with others and the team. Moreover, the managers should enhance the support of supervisors by providing some degree of autonomy and broaden discussions so that subordinates can share their ideas freely, give their opinions and then make decisions. This will strengthen the relationship between co-workers and subordinates to supervisors which will lead to more job satisfaction and higher productivity.

Third, although the engineers feel satisfied with the current career advancement policy that gives a higher priority to performance and effort rather than length of service, it would also benefit the organization if it could provide a clear roadmap to career development and growth and help the engineers to understand what is required of them in order to change their roles or develop their career paths as well as offering equal opportunities to all. For example, each employee should be provided with an individual development plan or mentoring, coaching, and learning about the resources they need to be effective managers. This will help employees to be more satisfied and motivate them to work toward a sense of accomplishment in their work and professional career.

Lastly, the organization should provide their engineers with challenging jobs in order to prevent them feeling bored and stop developing themselves. For example, the supervisor should let them experience autonomy or initiate and participate in projects to motivate them to increase their knowledge and learn new skills. A challenging job will challenge their knowledge, skills, and abilities as well as create a challenging environment that will make the engineers learn more and perform their best to prove themselves as professionals. When they manage their responsibilities and complete their jobs it will make them more satisfied. So, in order to retain a good performance from the engineers, the work should be challenging and offer them opportunities to enhance their performance.

These recommendations regarding the main factors for the engineers' job satisfaction should be applied by the management in the organization in order to attract, retain, and motivate employees to continue working for the organization and to realize full potential.

### **5.3 Limitations of the Research and Recommendations for Further Research**

The findings and contributions of this research are limited by the following:

#### **5.3.1 The Number of Respondents for the Interview**

The number of respondents was only a small sample of engineers compared with the total target population. This research was limited in collecting data to determine the factors affecting engineer's job satisfaction to only 8 selected engineers which may not be fully representative of all the engineers in the organization. Therefore, the findings might not reflect the overall engineers' job satisfaction. Further research should be conducted with all the engineers in the organization. If this is not practicable, it could examine a larger number of respondents in order to gain more information and see the different perspectives of each respondent so that the results will more accurately determine the factors that affect the engineers' overall job satisfaction.

#### **5.3.2 The Research Method**

The data for this research was collected from the interviews. However, to identify the factors affecting the job satisfaction of engineers in SPP both a qualitative and quantitative approach are recommended for use together for further research in order to obtain detailed, clear, and a full range of findings from each engineer. This will help to provide more reliable results for any future research.

### 5.3.3 The Factors of Job Satisfaction

In this research, only five job satisfaction factors and a few theories were considered and used as a tool to determine the factors affecting engineers' job satisfaction. It would be useful for any future research to look at and study others factors which were not mentioned in this research.



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