

**THE DETERMINANTS OF ENGINEER'S  
TURNOVER INTENTION**



**A THEMATIC PAPER SUBMITTED IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR  
THE DEGREE OF MASTER OF MANAGEMENT  
COLLEGE OF MANAGEMENT  
MAHIDOL UNIVERSITY  
2015**

**COPYRIGHT OF MAHIDOL UNIVERSITY**

Thematic paper  
entitled  
**THE DETERMINANTS OF ENGINEER'S  
TURNOVER INTENTION**

was submitted to the College of Management, Mahidol University  
for the degree of Master of Management

on  
December 13, 2015



.....  
Mr. Theeranai Lao-aroon  
Candidate

.....  
Asst. Prof. Parisa Rungruang, Ph.D.  
Advisor

.....  
Asst. Prof. Pornkasem Kantamara, Ed.D.  
Chairperson

.....  
Assoc. Prof. Annop Tanlamai, Ph.D.  
Dean  
College of Management  
Mahidol University

.....  
Asst. Prof. Nareerat Taechapiroontong,  
Ph.D.  
Member



## ACKNOWLEDGEMENTS

Firstly, I would like to express my sincere gratitude to my advisor Asst. Prof. Parisa Rungruang for the continuous support of my master study and related research, for her patience, motivation, and immense knowledge. Her guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my master study.

Besides my advisor, I would like to thank the rest of my thesis committee: Asst. Prof. Pornkasem Kantamara, and Asst. Prof. Nareerat Taechapiroontong, for their insightful comments and encouragement, but also for the hard question which incited me to widen my research from various perspectives

Last but not the least, I would like to thank my family: my parents and to my brothers and sister for supporting me spiritually throughout writing this thesis and my life in general. Your prayer for me was what sustained me thus far. I would also like to thank all of my friends who supported me in writing, and incited me to strive towards my goal.

Theeranai Lao-aroon

**THE DETERMINANTS OF ENGINEER'S TURNOVER INTENTION**

THEERANAI LAO-AROON 5749077

M.M. (GENERAL MANAGEMENT)

THESIS ADVISORY COMMITTEE: ASST. PROF. PARISA RUNGRUANG, Ph.D.  
ASST. PROF. PORNKASEM KANTAMARA, Ed.D.,  
ASST. PROF. NAREERAT TAECHAPIROONTONG, Ph.D.

**ABSTRACT**

Engineers have the specific knowledge that can be applied the theory into the practical. Therefore, losing engineers is the bad situation that organization would like to deal with. This research investigated the determinants of engineer's turnover intention and generate the proper organizational policy to maintain engineer and retain the benefit of the organization. This research used the semi-structured interview method to let interviewer probe the interviewee freely to elaborate on the initial response or to follow an answer of the interviewee. The respondents are 15 engineers in Thailand. The finding of this research are job satisfaction, organizational culture, performance, salary, job security, challenging job, career path, colleague, organizational socialization, bias work evaluation, distance to workplace, and job offered.

**KEY WORDS:** ENGINEER/ TURNOVER INTENTION/ EMPLOYEE TURNOVER

29 pages

## CONTENTS

	<b>Page</b>
<b>ACKNOWLEDGEMENTS</b>	<b>ii</b>
<b>ABSTRACT</b>	<b>iii</b>
<b>LIST OF TABLES</b>	<b>v</b>
<b>LIST OF FIGURES</b>	<b>vi</b>
<b>LIST OF ABBREVIATIONS</b>	<b>ix</b>
<b>CHAPTER I INTRODUCTION</b>	<b>1</b>
<b>CHAPTER II LITERATURE REVIEW</b>	<b>2</b>
2.1 DETERMINANTS OF TURNOVER INTENTION	3
<b>CHAPTER III RESEARCH METHODOLOGY</b>	<b>7</b>
3.1 RESEARCH DESIGN.	7
3.2 POPULATION AND SAMPLING	8
3.3 DATA COLLECTION	8
3.4 DATA ANALYSIS	10
<b>CHAPTER IV FINDINGS AND DISCUSSION</b>	<b>11</b>
4.1 DEMOGRAPHIC DATA	11
4.2 THE DETERMINANTS OF ENGINEER'S TURNOVER INTENTION	11
<b>CHAPTER V RECOMMENDATIONS AND LIMITATIONS OF THE STUDY</b>	<b>22</b>
5.1 PRACTICAL IMPLICATION	22
5.2 LIMITATION OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH	23
<b>REFERENCES</b>	<b>24</b>

## LIST OF TABLES

Table	Page
3.1 List of questions to be used in the interview	9
4.1 The rank of determinants and frequency	21



## CHAPTER I INTRODUCTION

Engineer is one of the important positions in the organization because they have the specific knowledge both theoretical and practical ability and profession from the experiences. They applied the theory into the practical to improve the work process, analyze, design, plan, control, and solve the problems. They are very valuable to the organization because they have the ability to enhance the overall work as a big part of the gear.

Losing engineers is the bad situation that organization would like to avoid those situations because not only losing the engineers but also increasing the expense. The cost of recruitment will be used to find new engineers to perform the work. During this meantime, the company may face the troubles of lost productivity or the cost of opportunity (Nakwilai, 2010). One more thing that many employers concern is that engineer will work for competitors or operate his or her business then complete with the employer (Sherman, 1986). Moreover, engineers who work in the public sector are more likely to leave their job (Kittiruengcharn, 1997).

Engineer is an employee in the organization but has the special characteristic, therefore, some determinants are conformed to other occupations but some determinants are different. Engineers concern many determinants before they make a decision and many reasons that they focus on. Job satisfaction, job security, work qualification that fit with engineers' performance, challenging job, salary, organizational culture and socialization and career progress are concerned by engineers.

To decrease the turnover intention of engineers in the organization, the consequences of this research will make them understand the determinants then they can release the proper organizational policy to maintain engineer and retain the benefit of the organization.

Formatted: Indent: First line: 2 cm, Space After: 0 pt



## CHAPTER II

### LITERATURE REVIEW

Employees turnover intention has been widely studied for a long time in order to understand the reasons behind those decisions and plan to reduce the turnover rate because of the direct and indirect cost have risen when employee intent to resign. In Thailand, the engineers tend to resign and change the job more than the past that bring problems into the organization because of the organization has to recruit for new engineers (Banthaothuk & Khongsawatkiat, 2013). The professionals are more likely to leave the public sector than non-professionals especially engineers are more likely to leave Thai public sector jobs than others (Kittiruengcham, 1997).

Engineer is a dissimilar occupational group because they have characteristics of a profession, a common body of knowledge, a reasonable degree of autonomy in the application of that knowledge (Baugh & Roberts, 1994) due to the changing of economic, social and technological conditions, and the management level are increasingly facing problems in retaining engineers. This, coupled with engineers' orientations and expectations to be treated as professionals, has caused considerable tensions and strains in the engineer-management relationship. This calls for changes in engineering management styles to maintain motivation and productivity (Bigliardi, Petroni & Dormio, 2005). However, engineers have they own characteristic which measure by Myers-Briggs type indicator and the result from the study of student success in a Canadian first year engineering program has confirmed that engineering students are more Thinking and Judging (Rosati, 1993).

The impacts of the turnover are related to the cost of the firm in order to lose manpower to serve the customers, the recruitment costs to study the work qualifications and recruitment processes, the training costs to provide the knowledge to the new hire (Nakwilai, 2010). The costs include the cost of opportunities, time, lost productivity costs, and lost sales cost are counted (Bliss, 2015) The most important problem when engineers decide to leave the company is that they join a competitor or

**Commented [P1]:** รมกวนเอา full stop ตรงนี้ออกนะคะ ปกติเราใส่ท้ายประโยคคะ ซึ่งในกรณีนี้ต้องอยู่ท้ายวงเล็บปิดนะ คะ

อาจารย์แก้ไขให้แล้วบางส่วนคะ เข้าใจว่ายังมีเหลือที่ต้องแก้ไขใน กรณีนี้ อีกหลายจุดมากคะ รมกวนแก้ไขทั้งหมดให้เรียบร้อยนะ คะ ^^

leave to start his or her own firm which will compete with the former employee- (Sherman, 1986)

## 2.1 Determinants of turnover intention

Previous studies have identified the determinants of turnover intention as follows.

### 2.1.1 Job Security

Min (2007) claimed that the job security is the most important factor that influences employee turnover because of human need the security in life to fulfill the safety need as the Maslow's hierarchy of needs. When a job is no longer security, employees tend to find the new position to avoid the unsafe feeling that can turn the situation down. Among Thai engineers, job security does not have the effect on turnover intention but they think it is an opportunity to get the higher income (Kittiruengcharn, 1997).

### 2.1.2 Performance

The work qualification is applied to recruit the new employee that sometimes can link to the performance of the employee. The poor performers are more likely to quit even after controlling for job satisfaction and turnover intentions and good performers were slight to intend to quit after controlling for job ~~satisfaction~~satisfaction (Zimmerman & Darnold, 2009). The decreasing of accounting and market performance within a company, in an average period of three years, encouraged CEO turnovers in Indonesia (Hartono, 2012). Job performance has significant to reduce the engineer turnover (Baugh & Roberts, 1994).

### 2.1.3 Job satisfaction

Job satisfaction is one of the determinants of turnover to satisfy the employee that match with the job position this one may include many aspects of reasons. From the theory of Edwin A. Locke's Range of Affect Theory (1976) is that satisfaction is defined by a similarity between what employee wants in a job and what

employee has in a job. Therefore, some believe it is simply how content an individual is with his or her job, in other words, whether or not they like the job or individual aspects or facets of jobs, such as nature of work or supervision. Individual aspects of work that lack of recognition from superiors, the misunderstand feeling, unfavorable treatment have the effect of turnover intention (Minor, Dawson-Edwards, Wells, Griffith & Angel, 2009). One of the most important determinants of turnover intention among engineer is job satisfaction that can increase the degree of satisfaction (Paulsen, 2014).

#### **2.1.4 Salary**

The employees tend to continue to work not because of the job satisfaction only but sometimes also the pay itself this means when they get high pay rate they may continue working with the employers. This cause is studied and the results are turn out very different. Efficiency wage theory predicts that attractive or higher salaries will reduce voluntary turnover (Leonard, 1987). Hausknecht and Trevor (2011) argue the relationships between pay, often measured as the average pay level, and turnover that there is negative relationship between pay and turnover. Other studies found that three sets of practices, recruitment and selection, compensation, and training and development, associated with high performance work systems predicted new hire quit rates (Selden, Schimmoeller & Thompson, 2013).

Organizational socialization is a process of learning and adjustment of an individual role and needs to fit with organizational role and (Chao, O'leary-Kelly, Wolf, Klein, & Gardner, 1994). Engineers' perceived external career opportunities that provides by their organization is positively associated with the levels of organizational socialization. The organizational socialization is significantly correlated with and consistently stronger than predictors of turnover intentions (Bigliardi, Petroni & Dormio, 2005).

#### **2.1.7.1.6 Culture**

There are two types of organizational culture which are consensual culture

and rational culture. The consensual culture emphasizes on people including the values teamwork and participation where the workplace is nice to work with. Rational culture focuses on results and getting the job done. Both have significant, positive associations with the job satisfaction that related to turnover. (Park & Kim, 2009). From the study of the effect of organizational culture types on the job satisfaction and turnover intention, rational culture and consensual culture appear to have the greater effect on job satisfaction than other culture types. In addition, consensual culture had the highest impact on turnover intention than other culture types.

### 2.1.82.1.7 Careers progress

Engineers have the careers progress that they expect to be involved in management and less technically. (Baugh & Roberts, 1994). The professional ability development has a relationship with turnover intention. In contrast, career goal progress and promotion speed have no relationship with turnover intention. (Karavardar, 2014). Engineers want the career paths that matched with individuals' needs and organizational needs to retain and motivate them to continue to work. (Igbaria, Kassiech, and Silver, 1999).

From the review of the literature, previous studies described the determinants that have the effect on turnover intention. These aspects are job security (Min, 2007; Kittiruengcharn, 1997), performance (Zimmerman & Darnold, 2009; Hartono, 2012; Baugh & Roberts, 1994), job satisfaction (Minor, Dawson-Edwards, Wells, Griffith & Angel, 2009; Paulsen, 2014), salary (Leonard, 1987; Hausknecht & Trevor, 2011; Selden, Schimmoeller & Thompson, 2013), organizational socialization (Chao, O'leary-Kelly, Wolf, Klein, & Gardner, 1994; Bigliardi, Petroni & Dormio, 2005), culture (Park & Kim, 2009), and careers progress (Baugh & Roberts, 1994; Karavardar, 2014). However, the studies were conducted from outside Thailand and various business industries such as projects case study a Volvo car corporation in Sweden (Kryvenda, 2012), the turnover intentions for construction engineers in Taiwan (Sun, 2011), voluntary turnover of new hires in US state governments (Selden, Schimoler & Thompson 2013) and job satisfaction and turnover in the Chinese retail industry (Wei & Tian, 2009). Not many studies have

**Commented [P2]:** หมายความว่า study ไหนคะ ใช้ Park and Kim, 2009 หรือเปล่าคะ

ถ้าใช้ก็เขียนให้ทราบว่ามันเป็น study นี้คะ

ถ้าไม่ใช่ ก็ใส่ ref ที่ถูกต้องสำหรับส่วนนี้ด้วยคะ ^^

**Formatted:** Complex Script Font: Times New Roman, Not Highlight

**Formatted:** Complex Script Font: Times New Roman, Not Highlight

**Formatted:** Complex Script Font: Times New Roman, Not Highlight

**Formatted:** Complex Script Font: Times New Roman, Not Highlight

**Formatted:** Complex Script Font: Times New Roman, Not Highlight

**Formatted:** Complex Script Font: Times New Roman, Not Highlight

**Formatted:** Complex Script Font: Times New Roman, Not Highlight

**Commented [P3]:** ดงนี้ให้หนูเพิ่ม refs นะคะ ซึ่งเราสามารถเอามาจากที่หนูได้เขียนไว้แล้วสำหรับแต่ละตัว แบ่งข้างต้นคะ

เช่น งานวิจัยที่บอกว่า job security มีผลต่อ turnover intention นั้น มีงานวิจัยไหนบ้าง หนูก็เอา ref มาใส่ไว้ละคะ

ดังนั้น จะออกมาประมาณนี้นะคะ  
job security (Smith, 1997; Azson, 2002), performance (Dohonue, 2004), job satisfaction (.....) เป็นต้นคะ

ต้องเอาเฉพาะที่มีผลนะคะ งานวิจัยที่ไม่พบความสัมพันธ์ระหว่าง job security and turnover intention เราก็จะไม่เอามาใส่ตรงนี้นะคะ เพราะประโยคแรกหนูเขียนไว้ว่า determinants that have the effect on turnover intention อะคะ

been conducted to focus on engineers in Thailand. Engineers play an importance role in the organization due to the ability of engineers are varies to enhance the organizational performance. The impact of turnover is cost the company in both direct and indirect cost. This research aims to discover the determinants of turnover intention among Thai engineers and give suggestion to maintain engineer in the organization.



## CHAPTER III

### RESEARCH METHODOLOGY

This chapter describes the research design, population and sampling, data collection and data analysis.

#### 3.1 Research Design

Qualitative method is a type of scientific research when the researchers want to investigate the kind of specific information about the values, opinions, behaviors, and social contexts (Mack, Woodson, Macqueen, Guest & Namey, 2005) The advantages of qualitative research are that it can conduct in-depth studies in many aspects that researchers are interested in. Moreover, the qualitative research represents an attractive the method by a large number of students and scholars who conduct qualitative studies (Yin, 2011). The characteristics of the qualitative are defined as 1.) An in-depth and interpreted understanding of the participants are focused. 2.) the samples are small in scale and selected by remarkable criteria. 3.) Data data and information are very detailed. 4.) the analysis is opened to produce the detailed description and classification and 5.) the output is focusing on the interpretation of the social meaning (Moriarty, 2011) The data collection techniques are various to be used in the qualitative method (Hancock, Windridge & Ockleford, 2009). The primary interview data will be collected by the open-ended questions and also specific to the participant's comments rather than question by the theory (Hsieh & Shannon, 2005) The qualitative research methods are concerned with the in-depth understanding of a phenomenon that makes the sample size of this method smaller than quantitative method and are often start with how and why (Dworkin, 2012; Creswell, 2002). The number of participants in interview research should be 15 as

minimum to 20 participants when they are homogeneous, means a particular level in organization or a particular type of employee (Latham, 2015).

### 3.2 Population and Sampling

The population of this study is the engineers who work in Thailand. The population targets are mostly in Bangkok, Thailand but other areas are also considered. Convenience sampling is the method to be used in this research. Respondents of the population are selected based on the relative ease of access. It is easily accessible and depends on the willingness to participate in a study of population (Teddlie & Yu, 2006). The 15 respondents who work as the engineer are focused on this research.

### 3.3 Data Collection

In-depth interviews are the common qualitative method because they are very effective while interviewers and interviewees can share the experiences to each other (Mack, Woodsong, Macqueen, Guest & Namey, 2005). The key questions of the semi-structured base on the areas of the researcher want to cover but allow both of them to diverge. In the semi-structured interview, the interviewer is free to probe the interviewee to elaborate on the initial response or to follow an answer of the interviewee (Gill, Stewart, Treasure, & Chadwick, 2008; Hancock, Windridge & Ockleford, 2009).

**Table 3.1 List of questions to be used in the interview**

Construct	Question Number	Question
Demographic	1	Gender
Demographic	2	Age
Demographic	3	Position
Demographic	4	Place of work
Opening question	5	Have you ever considered changing your Why? Or Why not?

Opening question	6	Could you please share with me the reasons behind that thought?
------------------	---	---

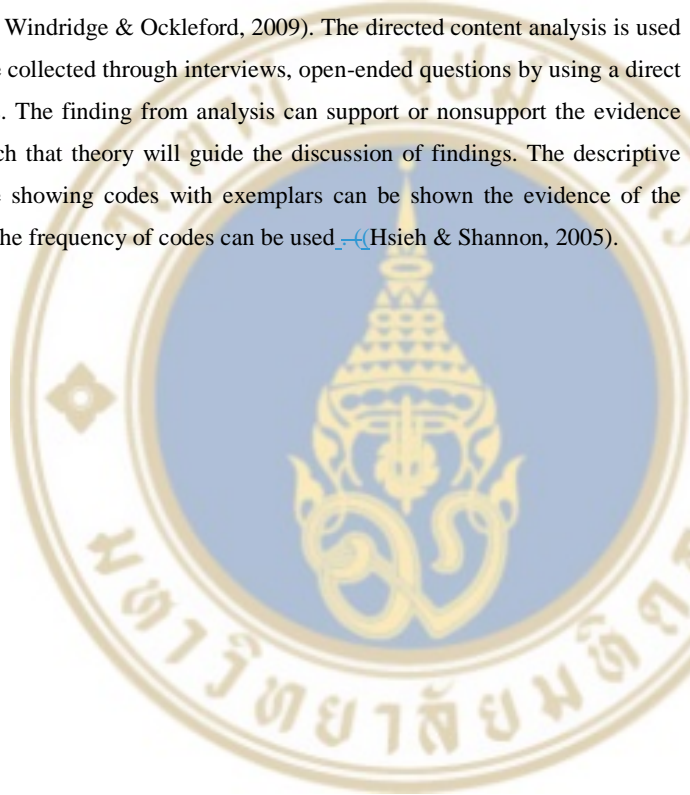
**Table 3.1 List of questions to be used in the interview (Cont.)**

Construct	Question Number	Question
Job security	7	Do you think that job security has the effect on intention to resign or not? Why or why not?
Performance	8	Do you think that work qualification has the effect on intention to resign or not? Why or why not?
Performance	9	If you know that your job qualification is not fit with you but the company provides the training to help you, will you be looking for a new job? Why or Why not?
Job satisfaction	10	Do you think that job satisfaction has the effect on intention to resign or not? Why or why not?
Salary	11	Do you think that salary has the effect on intention to resign or not? Why or why not?
Organizational socialization	12	Do you think that learning and adjusting yourself to be fitted with organizational role and need have the effect on intention to resign or not? Why or why not?
Culture	13	Do you think that consensual culture has the effect on intention to resign or not? Why or why not?
	14	Do you think that rational culture has the effect on intention to resign or not? Why or why not?
Careers progress	15	What do you think if you were promoted to management level rather than become a technical expert? Does this have the effect on intention to resign or not? Why or why not?



### 3.4 Data analysis

Analysis of the collected mass data from interview and present the result in a way of common communication is the most important of the research project. The big pictures are interesting to discover to describe the phenomenon of the interview data. (Hancock, Windridge & Ockleford, 2009). The directed content analysis is used when the data are collected through interviews, open-ended questions by using a direct approach process. The finding from analysis can support or nonsupport the evidence for a theory which that theory will guide the discussion of findings. The descriptive evidence and the showing codes with exemplars can be shown the evidence of the finding and also the frequency of codes can be used. (Hsieh & Shannon, 2005).



## **CHAPTER IV**

### **FINDING AND DISCUSSION**

The findings from the interviews of 15 respondents who are working as engineers in Thailand about their intention to find a new job are presented in this chapter. The data were gathered from semi-structured interviews to investigate the determinants of engineer's turnover intention.

#### **4.1 Demographic Data**

There are 15 respondents in this research both gender. There were 11 males and 4 females responded in this research. The age of the interviewees was 24 – 42 years old. There was variety of engineering fields; survey engineer, logistic engineer, civil engineer, industrial engineer, geomatics engineer, safety engineer, risk engineer, mining engineer, information technology engineer, electrical engineer, quality control engineer, and support and consult engineer; who participated in this interview. The respondents work in Bangkok, Rayong, Chanthaburi, Chonburi, and Phitchit.

#### **4.2 The determinants of engineer's turnover intention**

Among 15 respondents, there were several determinants of turnover intention. The consequences of this research are descending order below.

##### **4.2.1 Job satisfaction**

Of 15 respondents, 14 of them agreed that job satisfaction has the effect on them in order to continue to work or find a new job. Examples of responses are provided below.

*“If I still satisfy with my job, I continue to work but if the projects are frequently failed not because of me, I will resign because I do what I need to do, I tell everything that I need to tell but sometimes many people ignore my opinion then they fail. I don't like those situations.”* (Male, 28, logistic engineer)

*“If I am happy with my job I will stay for sure but if I compare with others factors and it is not worth enough to stay, I will go.”* (Female, 26, support and consult engineer)

*“I think I will find a new job. I want to work happily, if the work is not ok that means I feel uncomfortable. All the work you do is just you pour water on sand, no benefit to work in the situation like that”* (Male, 27, safety engineer)

Job satisfaction has the most effect on intention to resign even they have other factors to resign but if they happy with the company they tend to continue their work but if they unsatisfied with the job, they will find a new job because they don't like the uncomfortable feeling. This research determinant is consistent with the previous study that if the employees do not have what they want in a job which means they cannot fulfill their aspects in various defined so they tend to resign (Minor, Dawson-Edwards, Wells, Griffith & Angel, 2009).

#### **4.2.2 Organizational Culture**

Both consensual and rational culture have the effect on intention to resign depend on which culture do they prefer to work. 14 of respondents answered that either consensual culture or rational culture had the effect on them. Nine respondents preferred the rational culture which is the result oriented culture.

*“I prefer rational culture because the final result is the supporting reasons.”* (Female, 29, survey engineer)

*“I like rational culture because you can judge what is right what is wrong then you can improve for the future.”* (Female, 26, support and consult engineer)

*“It is cleared by itself from the beginning whether it right or wrong. You can eliminate the difficulty problem when execute the work.”* (Male, 24, IT engineer)

*“If we do not talk by the reason, we will fail to perform our work because you do not know how to solve the problem with the best solution. I cannot work with unreasonable people.”* (Male, 28, survey engineer)

While six respondents who preferred consensual culture as the following.

*“If you do not follow them you will work under pressure. You will lose your friend.”* (Male, 28, survey engineer)

*“You have to work with many people in the organization anyway, thus you should follow them.”* (Male, 28, logistic engineer)

*“I prefer consensual culture because in the end you have to work as a team.”* (Male, 42, Industrial engineer)

*“You have to work as a team. If you say something that others do not like it, you will face a problem with your team.”* (Female, 26, mining engineer)

Both consensual culture and rational culture were mixed in the interview result but more respondents preferred the rational culture to consensual culture. The consensual culture was preferred when they have to work with many people. For those who preferred the rational culture because they believed in the final result should have the proper reasons to support so they can improve thing in the future. Harmoniously, both cultures can influence the turnover intention. (Park & Kim, 2009).

#### **4.2.3 Salary**

12 of 15 of the respondents answered in the same direction that salary was important to them as the following example.

*“Of course, I work for money. I want money to survive but not that much just only reasonable wage when compare with market and my ability. If I get lower wage, why should I stay?”* (Male, 27, Safety engineer)

*“The salary wage must be reasonable with work load. If I work hard, the wage should be paid at some level. If I think that it is not reasonable, I will find a new job.”* (Female, 26, mining engineer)

*“The potential and the salary should be paralleled especially the specific applications.”* (Male, 24, IT engineer)

*“It should be at the acceptable rate; I do not need much money but somehow if I were offered the very higher rate, I will go.”* (Male, 28, electrical engineer)

The reasonable salary was concerned by 12 respondents. They work hard means they need the acceptable wage rate. The salary had the relationship with

turnover intention by accepting the reasonable rate (Hausknecht and Trevor, 2011). Otherwise, they will look for a new job which pays higher rate to them (Leonard, 1987).

#### 4.2.4 Performance

12 respondents answered that if they were the high flyer means their performance is higher than the work qualification, they will be looking for a new job that fit with their performance while if they were the poor performer means work qualification is higher than their performance, they will continue to work even the training is provide or not as the below example.

*“I prefer a challenge job that means if my performance is higher than work qualification, there is nothing challenge me. I want to learn something new even I have no experience about it.”* (Male, 42, Industrial engineer)

*“If the work qualification is higher than my performance, I will continue to work because it is a good opportunity to learn challenging job and I would appreciate if the company provides the proper training to me.”* (Male, 27, safety engineer)

*“I know that my performance is higher than work qualification I will look for new job that fits to me rather than work stay with this company except the company promote me with the fitted position.”* (Female, 27, risk engineer)

*“I want to be recognized that I have a good performance. If my performance is higher but I don't have a chance to show how good I am”* (Female, 29, survey engineer)

Only three interviewees disagreed from above. For instance, one of them will find new job if their performance was lower than work qualification but they will continue to work if the company provides the training to them as the below example.

*“Stressful, if I work in that situation but if the company tries to help me, I will try my best.”* (Male, 28, Survey engineer)

12 engineers who had high performance tend to find a new job if the work qualification was lower than their performance while if their performance was lower than work qualification they will continue to work because they think that it is a challenge that they have to complete. And they agreed that if the company provides

the training all of them will work with the company. This determinant opposes the previous study that the poor performers are more likely to quit even after controlling for job (Zimmerman & Darnold, 2009).

#### 4.2.5 Challenging Job

11 respondents mentioned at the very beginning of the interview that they tend to find new job because of there was no challenge anymore are below.

*“When I know everything, nothing challenges me, I want to find something new that challenge me.”* (Male, 28, survey engineer)

*“You earn most of the experience in the company then nothing that you can learn, you should go in order to keep yourself have the high value.”* (Male, 28, survey engineer)

*“I do not like routine job, I prefer something exciting.”* (Male, 27, safety engineer)

*“I want new experience, I want new motivation and I want challenging job because I want to improve myself all the time.”* (Female, 28, risk engineer)

*“It is boring job; you do it as same as yesterday. Nothing new, nothing challenges you. You cannot develop your potential.”* (Male, 24, IT engineer)

*“The work should be challenging because I will get boring if I have to do the duplicated work and it is not good for the future.”* (Male, 28, electrical engineer)

They preferred the challenging job. If they work as a routine or duplicated job, they tend to find the new challenging job because they do not like the boring job that their ability is not improved. The challenging jobs is one component of the characteristics that increase the productivity (Oldham & Cummings, 1996). This finding supports those of previous research that challenging job has the significant on intention turnover (Samuel & Chipunza, 2009).

#### 4.2.6 Job security

11 respondents agreed that job security was one of the important factors for them to make a decision because of the long term perspective and they wanted avoid the unsecure situation that may bring the problems to them. Some of respondents mentioned as below example.

*“I think secured job is the good back up of life, I do not want to change the job but I want to work with one company as long as I can”* (Male, 24, IT Engineer)

*“If the company get loss, I will find a new job for sure. The company is not reliable, so who wants to work for them.”* (Male, 27, Survey Engineer)

*“I do not like the feeling that I am going to lose my job. I have many expenses that money is needed to be paid. Therefore, if I know that I will looking for a new job for sure.”* (Male, 29, Geomatic engineer)

But four engineers thought that job security was less important to them as the following.

*“I believe in my potential that if I lose my job today, I can find another job very soon”* (Female, 29, survey engineer)

*“It does not matter to me. I am working as a yearly contractor that mean I do not care much about the job security but I prefer the knowledge that I can learn from here.”* (Male, 28, QC engineer)

Job security was one of the basic determinates that has the effect on intention because they concern the long term perspective and the problem that may come when they lose their job but some engineers like to take risk and believe in their potential rather than losing a job. This factor has the effect on turnover intention as it influence employee to resign. (Min, 2007).

#### **4.2.7 Career path**

There were two kinds of findings in this factor. First, 10 engineers wanted to be involved in the management.

*“I have to look around that how many specialists in the field if there are only few number I can be a specialist but if there are many specialists in the field, I prefer to be involved in management.”* (Male, 28, survey engineer)

*“I think if I have a chance I can continue manage the engineering work as I have experience in engineering, so I know the basis knowledge just need a chance to be involved in management level.”* (Male, 27, safety engineer)

*“I want to be involved in management because I look forward to seeing the future that one day I can operate my own business.”* (Female, 27, risk engineer)

*“I prefer to be involved in management because I can learn many things from that role. If I were promoted to be an expert, I will resign at some point.”*  
(Female, 29, survey engineer)

Second, five engineers preferred to be a technical expert in their field as following:

*“I do not like management because I do not want to work with many people.”* (Male, 28, survey engineer)

*“I do not care about the management position because I am happy with this position as a technical at this moment.”* (Male, 28, survey engineer)

*“I want to be a technical expert rather than to be involved in management because management position is unsecure due to the politic in the organization especially in Thailand.”* (Male, 29, geomatic engineer)

Career path among respondents was blended. 10 of them preferred to be involved in management while some of them wanted to work as a technical expert. The engineers who wanted to be involved in the management thought about the whole work that they could perform once they had enough technical knowledge while the engineers who wanted to be a technical expert mentioned that they did not like to work with many people and do not want to face many problems. This is not totally agreeing with the previous research that the engineers aim to be involved in management (Baugh & Roberts, 1994).

#### **4.2.8 Colleague**

Nine respondents mentioned that colleague is one of the determinants of intention turnover as below.

*“Good colleagues help me a lot in order to work in the stressful situation. Without good co-workers I cannot perform my duty. In the other hand, if my colleagues are scrambled I will no longer work with them.”* (Male, 28, survey engineer)

*“If colleagues are not ok, I will resign because it is hard to work with them because your performance will be dropped and your profile will look very bad.”*  
(Male, 28, logistic engineer)



*“In the company, there are many employees who come from the differences background. If we cannot work together, I should to resign because I will get headache every single day but if they kind to me and tend to help me I am very happy with that.”* (Male, 29, geomatic engineer)

*“I work with many departments so I need all the support from them but sometimes they just ignored it. It is hard to work with those kind of co-workers.”* (Male, 27, safety engineer)

The colleague has the effect on intention turnover because they were the one who engineers have to work with. If bad colleague is more than good colleague in the company, they tend to find a new job but if most of colleagues are good, they tended to stay even the other factors may be raised. This is consistent with the previous research that the employees who work with high quality colleagues are less likely to resign, and those who work with low quality colleagues are more likely to resign. (Cotton & Tuttle, 1986)

#### **4.2.9 Organizational socialization**

This determinant has the effect on engineer’s turnover intention by seven of respondents reflected in the interviews. There were two directions of this determinant. First, eight engineers thought that they were easy to adapt themselves to fit with the organization role and needs as mentioned below.

*“I have no problems with this factor because I have a good interpersonal skill that make me easy to assume an organizational role and needs.”* (Female, 29, survey engineer)

*“No affect at all, no problem on that because I can adapt myself to match with the role and needs of the organization”* (Male, 42, industrial engineer)

Second, six engineers thought that if they were not suitable with the organizational role and needs they intend to resign.

*“We have to thinking of ourselves, other selves that can correlate with each other or not. If we are not correlated, I select to go rather than be patient in the company.”* (Male, 28, survey engineer)

*“If I cannot adapt myself to fit with company it will bring the uncomfortable feeling to me then I will find a new company that suit with me. I prefer to be myself.”* (Male, 28, survey engineer)

*“It is possible to find a new job if I have tried enough to adapt myself to fit with company role and needs but it does not work. Find a new job is a way.”* (Male, 28, Electrical engineer)

The organizational socialization has the effect on intention to find a new job. Engineer who were unable to learn and adapt themselves to fit the organizational role and needs intent to resign. This finding is consistent with the previous research that pointed out that the organizational socialization has a significant on turnover intentions (Bigliardi, Petroni & Dormio, 2005).

#### **4.2.10 Bias work evaluation**

The bias evaluation makes three of respondents felt unhappy to work and intended to resign because of this issue as the below.

*“I think it is not fair when the evaluation result is released and it shown that those who work hard but the result is very low performance.”* (Male, 27, safety engineer)

*“The non-standard evaluation in the company makes me upset because I work very hard but the company does not have the tools to evaluate my performance. The result is based on what?”* (Male, 28, logistic engineer)

The standardize work evaluation should be applied because they accept the honestly evaluation. If they know that result of the evaluation is bias, they tend to find a new job. Employee who feels against the outcome may quit. This finding is consistent with that of research of Javed, Saif, Rehman, Qureshi, Imran and Khan (2013) that performance appraisal has the positive relation to turnover intention.

#### **4.2.11 Distance between work place and house**

Two engineers mentioned that they want to work closely with their house because they wanted times to stay with their family as the following.

*“I changed my job because I want to take care of my parents which mean I have to find a job where it close to my house.”* (Female, 27, risk engineer)

*“The traffic in Bangkok is terrible. I spend 2-3 hours for travelling to work and back home. If there are any workplace close to my house, I will work there because I want to spend time with my family”* (Male, 29, geomatic engineer)

Distance between work place and house has the effect on two engineers because they want more time to spend with their family. This cause is new for engineer turnover intention in Thailand.

#### **4.2.12 Job Offered**

Job offered is one of the intention to resign as the following 2 respondents mentioned.

*“My ex-superior asked me to follow him to new company and I did not hesitate to resign at that time.”* (Male, 42, industrial engineer)

*“If a new interest job was offered to me, I think I will go.”* (Male, 29, geomatic engineer)

When job is offered that match with their wants they will go for it right away such as the ex-superior asked them to work together again or they are interested in new job. This finding aligns with previous research of Zenger (1992) which found that the engineers will decide to leave when the external contract is greater reward than the internal contract.

According to the determinants of engineer intention turnover, some findings reconfirm but some are different from those of the previous research. However, more or less those determinants have the effect on intention turnover among 15 engineers in this research.

**Table 4.1 The rank of determinants and frequency**

<b>Number</b>	<b>Determinants</b>	<b>Frequency</b>
---------------	---------------------	------------------

1	Job satisfaction	14
2	Organizational Culture	14
3	Performance	12
4	Salary	12
5	Job security	11
6	Challenging Job	11
7	Career path	10
8	Colleague	9
9	Organizational socialization	7
10	Bias work evaluation	3
11	Distance to workplace	2
12	Job Offered	2

From the above determinants of intention turnover among 15 respondents who work as an engineer showed that the important determinants are job satisfaction, organizational culture, performance, salary, job security, and challenging job.

## CHAPTER V

## RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

### 5.1 Practical Implication

To retain the turnover rate is not easy especially the engineers who play the important role to the organization. To retain the engineers in the organization, the influence turnover intentions have to be reduced. The organization should create the proper policy according to the findings of this research.

First, to satisfy engineer in the organization, company has to understand the engineers' wants in a job to make sure that their aspects both individual and organization are fulfilled such as treat them with the reasonable action, ensure that proper recognition to employees is applied, try to understand what they want in a job then serve them with those aspects both individual and organization.

Second, salary rate should be reasonable with the average rate of the market and the individual potential. The organization should survey the proper salary among the industry because in this section, the wage is various and the engineers can find job easily.

Third, challenging jobs should be assigned to engineer in order to challenge their performance because they will bore when they do the routine job. Engineers want to prove that they want to learn more and they can do the better job. In order to maintain the high performers, the work should be able to enhance their performance.

Fourth, firms have to have the strong financial and reputation position to encourage the security feeling of engineers because they do not like the insecure situation.

Fifth, to fulfill the career path, the organization should be careful of promoting the engineers because they have their own way to grow. Not only involve in the management but they also concern the technical expert.

Sixth, the organizational culture has to be balanced between rational and consensual because both are concerned by engineers. Then create the manner and team of the colleague in the organization to enhance the good work environment.

Seventh, the engineers' roles and needs should be harmonious with organization roles and needs but it does not mean that all engineers are hard to adjust themselves to fit with the organization.

And eighth, work evaluation has to be justice; the organization should evaluate without any bias or politic because engineers prefer honestly evaluation.

The recommendations for the organization as mentioned above should be applied to maintain engineers to continue to work and retain the benefit to the organization. Therefore, the organization should apply the proper policies that suit with the engineers in the organization.

## **5.2 Limitations of the Study and Suggestions for Future Research**

There are three potential limitations of this research. First, the sample size is small in using an interview (15 interviewees). These 15 engineers cannot represent all of the engineers in Thailand. The future research should investigate more respondents because more respondents can lead to more satisfy with the circumstances. Second, there are many types of engineer and this research did not cover all kinds of the engineer. The future research should select one kind of engineer to investigate the turnover intention because each type of engineer has the different characteristic. Third, limited the age group between 24-42 years. Fourth, the range of age of respondents in this research did not represent all engineers' opinion. The future research should cover the wide range of age and divide the result into the range of age because the different generation may refer the different turnover intention.

## REFERENCES

Al-Refaei, Y., & Omran, K. (1992). Organizational and Psychological Determinants of Employee Turnover in Kuwait. *International Journal of Public Sector Management Intl Jnl Public Sec Management*.

Banthaothuk, C., Khongsawatkiat, K. (2013) The decision to change jobs Thai German Institute Engineers, Journal of Finance, Investment, Marketing And Business Management, 16-31

Baugh, S., & Roberts, R. (1994). Professional and organizational commitment among engineers: Conflicting or complementing? *IEEE Transactions on Engineering Management IEEE Trans. Eng. Manage.*, 108-114.

Bertinelli, L., Cardi, O., Pamukçu, T., Strobl, E., & Thornton, R. (2009). The determinants of excess worker turnover in Luxembourg. *Int J of Manpower International Journal of Manpower*, 253-268.

Biggam, J. (2008). *Succeeding with your master's dissertation a step-by-step handbook*. Maidenhead: McGraw Hill/Open University Press.

Bigliardi, B., Petroni, A., & Dormio, A. (2005). Organizational socialization, career aspirations and turnover intentions among design engineers. *Leadership & Organization Development Journal Leadership & Org Development J*, 424-441.

Bliss, W. (2015). Cost of Employee Turnover. Retrieved January 11, 2016, from <http://www.isquare.com/turnover.com>

Chambliss, D., & Schutt, R. (2003). *Making sense of the social world: Methods of investigation*. Thousand Oaks, Calif.: Pine Forge Press.

Chao, G., O'leary-Kelly, A., Wolf, S., Klein, H., & Gardner, P. (1994). Organizational socialization: Its content and consequences. *Journal of Applied Psychology*, 730-743.

Cotton, J., & Tuttle, J. (1986). Employee Turnover: A Meta-Analysis and Review with Implications for Research. *Academy of Management Review*, 55-70.

Creswell, J. (2003). *Research design: Qualitative, quantitative, and mixed method approaches* (2nd ed.). Thousand Oaks, Calif.: Sage Publications.

Dworkin, S. (2012). Sample Size Policy for Qualitative Studies Using In-Depth Interviews. *Arch Sex Behav Archives of Sexual Behavior*, 1319-1320.

Fetterman, D. (1998). *Ethnography step by step* (2nd ed.). Thousand Oaks, Calif.: SAGE.

Flint, D., Haley, L., & McNally, J. (2013). *Individual and organizational determinants of turnover intent*. *Personnel Review*, 552-572.

Gialuisi, O., & Coetzer, A. (2012). An exploratory investigation into voluntary employee turnover and retention in small businesses. *Small Enterprise Research*, 55-68.

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and focus groups. *BDJ Br Dent J*, 291-295.

Guba, E., & Lincoln, Y. (1981). *Effective evaluation*. San Francisco: Jossey-Bass.

Hancock, B., Windridge, K., & Ockleford, E. (2007) *An Introduction to Qualitative Research*. The NIHR RDS EM

Hartono, J. (2012). Antecedent and consequence factors of CEO turnover in Indonesia. *Management Research Review*, 206-224.

Hausknecht, J. P., & Trevor, C. O. (2011). Collective turnover at the group, unit, and organizational levels: Evidence, issues, and implications. *Journal of Management*, 37, 352–388.

Hsieh, H., & Shannon, S. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, 1277-1288.

Igbaria, M., Kassiech, S., & Silver, M. (1999). Career orientations and career success among research, and development and engineering professionals. *Journal of Engineering and Technology Management*, 29-54.

Karavardar, G. (2014). Organizational Career Growth and Turnover Intention: An Application in Audit Firms in Turkey. *IBR International Business Research*, 67-76



Kittiruengcharn, N. (1997) Impacts of job and organizational satisfaction, and organizational commitment on turnover intention in Thai public sector engineers, (Master's thesis). Retrieved from <http://spectrum.library.concordia.ca/451/>

Khatri, N., Fern, C., & Budhwar, P. (2011). Explaining employee turnover in an Asian context. *Human Res Manag J Human Resource Management Journal*, 54-74.

Kothari, C. (2004). *Research methodology: Methods and techniques (2nd ed.)*. New Delhi: New Age International (P).

Kryvenda, A. (2012) Reducing Adversity of Employee Turnover within Projects Case Study a Volvo Car Corporation, (Master's thesis). Retrieved from <http://publications.lib.chalmers.se/records/fulltext/164422.pdf>

Latham, J. (2015) Qualitative Sample Size – How Many Participants is Enough? Retrieved from <http://johnlatham.me/many-participants-enough/>

Lee, T., Chen, S., Wang, S., & Dadura, A. (2010). The relationship between spiritual management and determinants of turnover intention. *European Business Review*, 102-116.

Leonard, J., S. (1987). Carrots and Sticks: Pay, Supervision and Turnover. Retrieved from <http://www.nber.org/papers/w2176.pdf>

Mack, N., Woodsong, C., Macqueen, K., Guest, G., & Namey, E. (2005). *Qualitative research methods: A data collector's field guide*. North Carolina: Family Health International.

Min, H. (2007). Examining sources of warehouse employee turnover. *International Journal of Physical Distribution & Logistics Management Int Jnl Phys Dist & Log Manage*, 375-388.

Minor, K.I., Dawson-Edwards, C., Wells, J.B., Griffith, C., & Angel, E. (2009) Understanding Staff Perceptions of Turnover in Corrections. *Professional Issues in Criminal Justice*, 43

Moriarty, J. (2011) *Qualitative Methods Overview*, School for Social Care Research

Morrell, K., Loan-Clarke, J., & Wilkinson, A. (2004). Organisational change and employee turnover. *Personnel Review*, 161-173.

Morrow, P., Suzuki, Y., Crum, M., Ruben, R., & Pautsch, G. (2005). The role of leader-member exchange in high turnover work environments. *Journal of Managerial Psychology Journal of Managerial Psych*, 681-694.

Nakwilai, W., (2010). The study of determinants of intention turnover of GGG (Thailand) Company (Master's thesis) Retrieved from <http://eprints.utcc.ac.th/1887/15/1887fulltext.pdf>

Naoum, S. (2007). *Dissertation research and writing for construction students* (2nd ed.). Oxford: Butterworth-Heinemann.

Nolinske, T. (2013). Survey Research Yields Data on Employee Turnover. Retrieved from <https://www.nbrii.com/employee-survey-white-papers/survey-research-yields-data-on-employee-turnover/>

Oldham, G., & Cummings, A. (1996). *Employee Creativity: Personal And Contextual Factors At Work*. *Academy of Management Journal*, 607-634.

Omar, M., & Syed-Abdullah, S. (2010). Identifying effective software engineering (SE) team personality types composition using rough set approach. *2010 International Symposium on Information Technology*.

O'halloran, P. (2012). Performance pay and employee turnover. *Journal of Economic Studies*, 653-674.

Park, J., & Kim, T. (2009). Do types of organizational culture matter in nurse job satisfaction and turnover intention? *Leadership in Health Services*, 20-38.

Paulsen, M. (2014). Turnover Intention among Engineering Employees: A Question about Psychosocial Work Environment Factors and Age? A quantitative study conducted on a global oil and gas company. (Master's Thesis). Retrieved from [www.diva-portal.se/smash/get/diva2:750663/FULLTEXT01.pdf](http://www.diva-portal.se/smash/get/diva2:750663/FULLTEXT01.pdf)

Rajasekar, S., Philominathan, P., Chinnathambi, V. (2013). Research Methodology, Retrieved from <http://arxiv.org/abs/physics/0601009v3>

Ramlall, S. (2004). A review of employee motivation theories and their implications for employee retention within organizations. *The Journal of American Academy of Business*, 52-63.

Rosati, P. (1993). Student retention from first-year engineering related to personality type. *Proceedings of IEEE Frontiers in Education Conference - FIE '93*.

Samuel, M.O., & Chipunza, C. (2009) Employee retention and turnover: using motivational variables as a panacea. *African Journal of Business Management*, 410-415.

Selden, S., Schimmoeller, L., & Thompson, R. (2013). The influence of high performance work systems on voluntary turnover of new hires in US state governments. *Personnel Review*, 300-323.

Sherman, J.D. (1986) The Relationship between Factors in the Work Environment and Turnover Propensities among Engineering and Technical Support Personnel, *IEEE Transactions on Engineering Management*, 72-78

Sukchuay, K. (2011) Organizational commitment of engineer, (Master's thesis). Retrieved from <http://digi.library.tu.ac.th/thesis/sw/2972/title-biography.pdf>

Sun, K.S. (2011) The turnover intentions for construction engineers, *Journal of Marine Science and Technology*, 550-556

Teddle, C., & Yu, F. (2007). Mixed Methods Sampling: A Typology With Examples. *Journal of Mixed Methods Research*, 77-100.

Tian-Foreman, W. (2009). Job satisfaction and turnover in the Chinese retail industry. *Chinese Management Studies*, 356-378.

Yin, R. (2011). *Qualitative research from start to finish*. The Guilford Press.

Ying-Chang, C., Kuo, C., Cheng, W., Hsia, H., & Chien, C. (2010). Structural Investigation of the Relationship between Working Satisfaction and Employee Turnover. *The Journal of Human Resource and Adult Learning*, 6(1), 41-50.

Zenger, T. (1992). Why Do Employers Only Reward Extreme Performance? Examining the Relationships Among Performance, Pay, and Turnover. *Administrative Science Quarterly*, 198-198.

Zimmerman, R., & Darnold, T. (2009). The impact of job performance on employee turnover intentions and the voluntary turnover process. *Personnel Review*, 142-158.