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THESIS

INTENTION TO LEAVE OF MEDICAL INTERNS IN THAI COMMUNITY HOSPITALS

SURAPAT KANA-ANAN

A Thesis Submitted in Partial Fulfillment of
the Requirements for the Degree of
Master of Business Administration
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The objectives of this study were 1) to study the intention to leave of interns in community hospitals in Thailand, 2) to study intention to leave factors of interns in community hospitals in Thailand, and 3) to study factors predicting intention to leave of the interns in community hospitals. The data were gathered by using questionnaires which were distributed to 175 community hospitals in 15 provinces with a large number of populations per a physician. For data analysis, descriptive statistics were used. Stepwise multiple regressions were used to find out the predicting factors and test the hypotheses.

The research found that intention to leave of medical interns was low. The nine related factors were rated at a high and very high level. Only the Government Compulsory factor was rated at a neutral level. Only five out of ten factors significantly predicted the intention to leave, which were Family Responsibility, Government Compulsory, Job Variety, Job Fit, and Social Recognition.

Based on the findings, the community hospital director should manage extra workloads or extra tasks for interns on voluntary basis. Intern should be involved in community hospital administration or medical service activity for community. The community hospital director should arrange a basic medical service activity in order to provide free physical checkup and knowledge about general disease prevention. MoPH should reconsider the regulation of government compulsory contract. The fine to breach the contract should be increased in order to decrease the intern's intention to leave.

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Student's signature Thesis Advisor's signature

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July, 2014

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CHAPTER I

INTRODUCTION

Statement of Problem

Since 1972, the medical intern, or graduated medical student, has been obliged to 3-year contract for public service in Thailand. The contract requires all the interns to register in either a regional hospital or a general hospital for the first year and work in a community hospital for another 2 years to conclude the internship. A fine of 400,000 Thai Baht or US$ 15,000 must be paid to the government for any student who terminates the contract.

In Thailand, there are 94 regional/ general hospitals, and 734 community hospitals. Regional/ general hospitals serve the healthcare industry in a high level providing full medical instruments and all fields of specialized physicians. Community hospitals serve the healthcare industry at the primary level, serving patients amounting to approximately two-thirds of the population. Thus, medical interns are necessary and are highly demanded. As the compulsory contract is imposed, the interns are allocated to join these hospitals to experience the real medical practice and assist the existing physicians. The government tries to provide a sufficient intern supply as demanded by community hospitals nationwide. However, the amount of interns is still inadequate due to the high rate of resignation during their intern period. This problem leads to the shortage of physicians today (Ministry of Public Health, 2011).

After completing medical school, interns are allowed to choose their 'Hospital of Choice' to be their workplaces during the 3-year contract term. There is a certain quota for each hospital. If they choose the same place resulting in an excess of quota required by the hospital, drawing lots will be decide who works where. The study of Wongwatcharapaiboon and Pengpaiboon (1999) indicated that the physician turnover rate in 1997 was high, as 34.6% of 115 physicians interviewed by phone said that they

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were unable to choose their workplaces. In addition, a survey on the resignation of interns who resigned before the compulsory period ends by Pagaiya, *et al.* (2012c) supported the high turnover rate. The research team did the survey by collecting data from the interns graduated from medical school during the period of 2001-2007. The data showed that the number of the resigned interns was increasing every year. In 2007, 857 of a total 1,147 medical students decided to resign out of the government system. Among that number, 490 medical interns resigned from community hospitals accounting for 42.7 % of total interns as shown in Table 1.

Table 1 The Number of Interns Who Resigned Before Three Years Compulsory Service Ending during 2001- 2007

Starting Year	No. of Interns	Number of resignation before compulsory end			
		Community hospitals		Other hospitals	
		Number	%	Number	%
2001	600	64	10.70	22	3.67
2002	756	116	15.30	81	10.71
2003	924	223	24.10	194	21.00
2004	992	360	36.30	315	31.75
2005	1131	425	37.60	360	31.83
2006	1162	460	39.60	351	30.21
2007	1147	490	42.70	367	32.00

Source: Pagaiya *et al.* (2012a)

Apparently, the resignation of interns before the 3-year compulsory contract ended has become one of the most concerning problems. This greatly impacts the healthcare system as a whole, especially in rural districts. It shortens the number of medical interns expected to participate in the program. Data from a 2011 study by the human resource department of the Health Research and Development Office (HRDO) and Bureau of Policy and Strategy, showed the imbalance of the distribution of physicians per capita in Thailand. As shown in Table 2, Bangkok has the highest ratio of medical physicians per population (1: 628) while the Northeast has the lowest

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ratio (1: 4,685). This means that the physicians per capita in Bangkok are almost 8 times greater than that in Northeastern Thailand.

Table 2 Distribution of Physicians by Region in 2011

Region	Physician	
	Number	Per Population Ratio
Central	5,832	1 : 2,699
Northeast	4,591	1 : 4,685
North	3,848	1 : 3,059
South	2,809	1 : 3,138
Bangkok	9,082	1 : 628

Source: Bureau of Policy and Strategy (2012)

Comparing a community hospital and a regional/general hospital under the Ministry of Public Health (MoPH), an inequitable distribution of medical physicians has shown. There is a distinctive difference in the demand for physicians. Table 3 represented the need of the physicians, in 2011, by using a geographic information system (GIS). To meet the GIS requirements which allocate physician according to the number of population in the area, 506 and 2,305 Physicians are needed for regional/general hospitals and community hospitals, respectively. Accordingly, an inadequate of physician in community hospitals should be taken into consideration.

Table 3 The Situation and Requirement of Human Resources for Health by Regional/ General Hospitals Compared with Community Hospitals

	Regional/general hospital			Community hospital		
	GIS requirement	The current number	In-need number	GIS requirement	The current number	In-need number
Physician	6,727	6,221	506	7,010	4,705	2,305

Source: Pagaiya *et al.* (2011)

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The resignation of interns has become a serious problem since community hospitals are bound to serve two-thirds of the population in Thailand but the physicians serving in community hospitals were 1,516 people less than that of regional/general hospitals. Generally, graduated medical students prefer working in the cities which the majority of Thai people does not reside in.

The resignation of interns before the end of their contracts placed a massive workload onto medical physicians who work in community hospitals as they had to handle more patients. Moreover, in 2001 the government announced another healthcare policy called Universal Health Care aiming to support its people to have better access to public healthcare services. As a result, the number of Thais using the service increased from 69% in 1996 to 96.3 % in 2005.

Medical Hub is a hub for medical tourism and medical services for domestic and international visitors. It increased the demand for health workers. However, privately owned hospitals tend to offer high remuneration for physicians to work with them. It is one of the reasons that interns resign from government-owned hospitals and are willing to pay the fine to the government.

Based on data in Figure 1, it shows that in 2010 the turnover rate dropped down significantly. In 2009, physicians resign equal to 712 from 999 physicians (71%). In 2010, physicians resign equal to 602 from 1,303 (46%). In fact that there were only 110 (15%) fewer resigned physicians than the previous year. This was because of the growth of the new graduated medical students. Figure 1 shows the proportion of the resigned physician per the number of interns in the past 12 years. The entrance of the new interns can substitute some amount of the resigned interns, which results in the low turnover rate. Thammarangsi (2004) studied the factors that motivated medical physicians to terminate a 3-year compulsory contract and resign early from government-owned hospitals. The research showed that the main reason to resign was the specialty training. These resigned medical physicians claimed that they are unable to tolerate the hard work in the government sector and handle their duties in a faraway and unfamiliar place.

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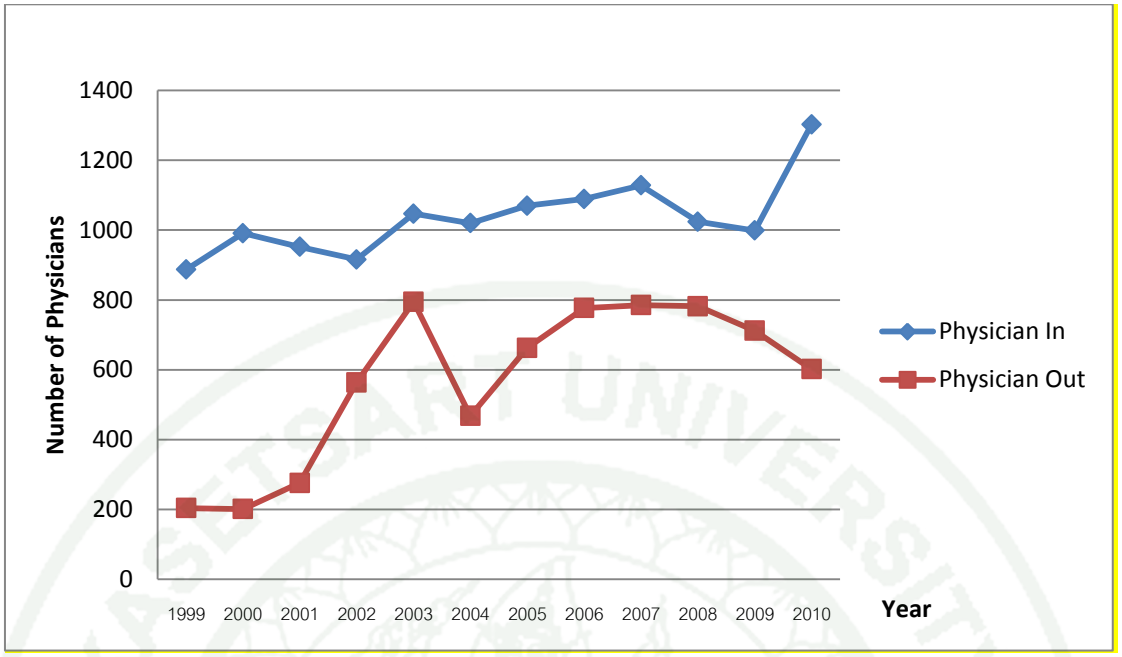

Figure 1 The Amount of Interns Compared to the Number of Resigned Physicians in MoPH

Source: MoPH (2011)

The increase in the number of physicians in government-owned hospitals reflects the shortage of physicians in community hospitals. The ratio of medical physicians per capita in metropolitan areas and in suburban areas shows the distinctive difference. Medical physicians working in community hospitals are responsible for vast workloads reflecting the capability of physicians in quality of care and treatment. Universal Healthcare and the concept of a Thai medical hub launched by the government increase the intensity of the resignation problem.

To tackle this national resignation problem, the government launched a project called Collaborative Project to Increase Production of Rural Physicians (CPIRD). It gives an opportunity to a physician whose hometown is originally in a rural district to return and work in their local area after they complete school.

The resignation of interns was the national problem, obviously in community hospitals that serve the majority of people in Thailand. The resignation of interns

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affect to the low number of physicians in rural area, physician per population in Bangkok is almost 8 times greater than in Northeastern Thailand. Universal Healthcare and the concept of a Thai medical hub launched by the government increase workload among physicians effected to the intensity of the resignation problem. To tackle this national resignation problem, the government launched a project called Collaborative Project to Increase Production of Rural Physicians (CPIRD). However, the resignation of intern still was high. Previous research was concerned about cause of resignation of physicians (Wongwatcharapaiboon and Pengpaiboon, 1999), the remain of medical physicians after completed 3 year compulsory contract (Virasombat, 2009), and the new medical interns' working decisions in rural areas (Pagaiya et al., 2012a). Nevertheless, the intention of the interns to breach a 3-year compulsory contract was not indicated. Consequently, studying the leaving intentional factors will assist the government to impose a proper healthcare workforce policy.

Objectives

1. To study the intention to leave of interns in community hospitals in Thailand

2. To study the intention to leave factors of interns in community hospitals in Thailand

3. To study factors predicting intention to leave of the interns in community hospitals in Thailand.

Expected Benefits

1. The research should benefit to directors of community hospitals, providing a practical guideline in order to reduce the resignation in a community hospital in each area, especially in the North and Northeast of Thailand.

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2. For the Ministry of Public Health, this research should propose a policy for a community hospital that corresponds with interns to decrease a resignation of medical interns across the country in remote areas.

Operational Definitions

Community hospitals The hospitals in Thailand controlled by Ministry of Public Health (MoPH) serving the healthcare service in primary and secondary levels. The size of the hospital is measured by the number of beds, which are 10, 30, 60, and 120 beds. There are 734 community hospitals in Thailand (MoPH, 2011).

Community-related Factors The factors caused by the environment and people in the community. These factors are included as follow.

1) Rural Life Style The traditional way of living in the countryside, perceived being the value of this community, and the appreciation of natural resources.

2) Social Recognition Being recognized as a part of the community and the faith of the villagers in the area due to working at a community hospital.

Domicile The place that a person treats as their permanent home, or lives in and has a substantial connection with**.**

General hospital A hospital under the Ministry of Health. Generally, it is located in a main district. There are 120-500 beds. A general hospital serves the health care service in the secondary level (MoPH, 2011).

General physicians The physicians who treat ordinary medical condition such as influenza virus, flu, and infections.

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Intention to leave Intention to leave is defined as an intern's plan of intention to quit the Government Compulsory service before the end of Government Compulsory contract.

Intern A graduated medical student obliged to a 3-year contract for public service in a community hospital in Thailand in the year 2011-2013.

Ministry of Public Health (MoPH) The Ministry of Public Health in Thailand is responsible for health promotion, disease prevention and control, medical care services and rehabilitation and other affairs, it is by law, prescribed as the authority of the Ministry of Public Health or agencies belonging to it (MoPH, 2011).

Personal Factors The factor that is caused by the family of the intern, specifically for this research is "Family Responsibility" in terms of financial support to the family.

Regional hospital The hospital that is monitored by MoPH and serves the healthcare service at the tertiary care level, providing full medical instruments, all fields of specialized physicians. There are more than 500 beds per hospital (MoPH, 2011).

Specialized physician A physician who treats a specific disease (such as heart disease and the blood). Specialist medical practitioners who were a graduate of the medical school that access to education in academic and technical as the disease specialization of study (MoPH, 2011).

Universal healthcare policy A healthcare policy is provided healthcare and financial protection to all Thai citizens. It provides a specified package of benefits to all members of the society (MoPH, 2011).

Work-related Factors The factors caused by the environment and people in their hospital. This is related to the policy of government, the challenges and varieties

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of task, or the relationship of interns with their colleagues in a hospital. These factors are included as follow.

1) **Government Compulsory** A Government Compulsory contract that would result in the intern oblige in a community hospital for a 3-year period. If the interns break the contact, the will be fined 400,000 Baht.

2) **Hospital facilities** The modernization and suitability of medical equipment of medical devices for operation, as well as a proficient team of nurses.

3) **Job Variety** A variety of tasks that the interns are involved in, such as Thai traditional, alternative medicine, traditional activity in hospitals, or participation in hospital management.

4) **Job Fit** The perception of being beneficial, and enjoying work in a community hospital more than a private hospital. Working in a community hospital is an ideal job.

5) **Work experience** The perception towards the work experience in community hospitals that being important to a physician's career path.

6) **Work Relationship** The relationship among physicians or with other staff in a community hospital.

7) **Workload Sharing** The shift rotation between physicians to serve patients in a hospital. The appropriate sharing of medical task in a community hospital.

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CHAPTER II

LITERATURE REVIEW

This chapter will summarize the published literature on the variables and constructs being examined in the research. The first section of the chapter discusses the theoretical literature for motivation, job satisfaction, organization commitment, and job embeddedness. The second section presents the information about Thai community healthcare system. The third section provides an overview of physician resignation and retention in Thai community. Related studies are in the fourth section. In the last section, selected factors were concluded in the research conceptual framework and hypotheses.

Theoretical Concept

Work Motivation Theories

Motivation is an important element to encourage employees' behavior. It can be defined as the power to pursue person to do their jobs well or the desire of person. The work motivation theories divide in 2 groups: Content theories, and Process Theories. Content theory emphasizes the inside factors that motivate persons, adjustment person's behavior depended on the objective, and retain that behavior. The theories in this group are Hierarchy of Needs (Maslow, 1943), Two Factor Theory (Herzberg, 1959), etc. Process theories emphasize the process of factors that affect to the job description on employee job satisfaction. The theories in this group are Equity Theory and Expectancy Theory (Vroom, 1964).

Latham and Ernst (2006) conclude motivation theories in 20th century to 3 periods as following;

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1. The first period of motivation theories: in 1911, the money was the important factor to motivate people. After that, they agree that there are many factors more than just money that motivate and make people satisfied with the job.

In the first period of motivation theories, Latham and Ernst (2006) concludes that the first three motivation theories; 1) the need of people from Hierarchy of Needs (Maslow, 1943) and Job Characteristics (Hackman and Oldham, 1976), 2) the creation of environment that makes self-motivation from Two Factor Theory (Herzberg, 1959) and Job Characteristics (Hackman and Oldham, 1976), 3) the method to increase or reduce people behavior by creation of environment from Contingency Theory (Skinner, 1954).

2. The second period of motivation theories: in 1960, the era of revolt in psychology that the Process theory was developed.

In the second period of motivation theories, Latham and Ernst (2006) conclude Expectancy Theory, Goal Setting Theory, and Equity Theory as the theories to increase motivation. The 3 addition points are added; 4) the goal setting of individual person leads to work effectiveness from Goal Setting Theory (Locke, 1968), 5) the well expected result relates with the employee behavior from Expectancy Theory (Vroom, 1964), 6) the comparison of employee in organization leads to the resignation.

3. The last period of motivation theories, the existing motivation theories were criticized, the Goal Setting Theory was examined enormously. Social Cognitive Theory and Organizational Justice were developed.

The last period of motivation theories in 20th century, Latham and Ernst (2006) concludes 4 additional point; 7) the changing in the expected result will affect to the behavior from Social Cognitive Theory (Bandura, 1977), 8) to increase the effectiveness in team, the creation of employee assurance is implemented by enactive mastery, the achievement modeling and persuasion from Social Cognitive Theory

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(Bandura, 1977), 9) creation the system that will distribute the fairness among employee in organization from Organizational Justice (Greenberg, 1986), 10) development the system that will make the fairness between leader and employee from Organizational Justice (Greenberg, 1986).

Job Satisfaction

Job satisfaction is the satisfied motion of person that received from result or experience of work (Locke, 1969). The motivation theory describes about people needs, the difference of satisfaction in individual, the difference of value, cognition, and effect in individual that lead to the factors affected job satisfaction and organization commitment, and effect to the organization performance and employee retention. (Locke, 1997)The comparison between job satisfaction and job embeddedness may conclude in two points 1) emphasizing on job satisfaction in on-the-job factors, 2) Various in measurement; job description index, Minnesota Satisfaction Questionnaire, job environment, co-worker, remuneration (Griffeth and Hom, 2000). The loss in organization occurs when employees decided to resign. Mobley and Horner (1978) found that the moderate relationship between resignation and job satisfaction from 203 employees in hospital. The job satisfaction, intention to leave, and job alternative are investigated, the result indicates that job satisfaction relates negatively with intention to leave and job alternative. Krogstad, Hofoss, and Veenstra (2006) studied the factors to predict job satisfaction among physicians and nurses in Norway and found that the positive evaluation of leader and career development are the prediction factor of job satisfaction.

Organizational Commitment

Organizational commitment may define as 3 dimension (Allen, 1990) affective, continuance, and normative as following

1. Affective and Fit: affective reflects personal desire in job and emotion for organizational commitment. The employee retention is a result of positive emotion

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toward organization. The fit will affect positively to the job but not reflect positively to the decision. People will intend to stay in organization from their individual reasons.

2. Normative and Link: people will stay in the organization, if they perceive that they are valuable to an organization. Although, the link may increase emotion to stay but evaluation of link is not the individual normative.

3. Continuance and Sacrifice: continuance is the individual investment, attempt, co-worker, and training. The measurement of continuance is similar to the measurement of sacrifice. If people decide to leave the job, they will lose something in organization such as the freedom, remuneration, position, welfare, and opportunity to promote. The measurement of sacrifice will be more specific than continuance and including the factors that out of the investment of continuance.

Voluntary Turnover

Voluntary turnover is a huge problem for many organizations. There are many reasons why people voluntarily leave organizations. Some are personal issues such as changes in family situation, a desire to learn a new skill or trade, or an unsolicited job offer. Other reasons are influenced by organization society such as unfair treatment from coworkers. Two major factors are job satisfaction and job alternatives. People who are satisfied with their jobs will stay, while those who are not will leave. People with more alternatives will be more likely to leave than those who have fewer alternatives. Other attitudes have been studied, such as organizational commitment, job involvement, and perceived organizational support. Mitchell, Holtom, and Lee (2001) commented on these factors that, first, in most cases, staying is seen as the simple of leaving. That is, people who are satisfied with their jobs and have few alternatives will remain on the job. Less turnover research has focused on how an employee decides to remain with an organization and what determines the attachment. This point is critical for study and Mitchell, Holtom, and Lee (2001) believe that staying and leaving involve different psychological and

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emotional processes. The second point is that Mitchell, Holtom, and Lee (2001) collective effort to predict turnover has not been very successful, even the more complex theories, with multiple attitudes and assessments of perceives alternatives. It was rather gloomy assessment that prompted the authors to study new ways to understand a voluntary turnover. (Mitchell, Holtom, and Lee, 2001)

Shocks and Unfolding Model

Mitchell, Holtom, and Lee (2001) said that people will leave their job, if their job are not satisfied, or get another alternative but there are many reasons for people to leave the jobs. Some particular event that effects their decisions called Shock to the system such as company merger; friend's leaving or having a baby. Whether expected or unexpected, shocks occur, the leaving will be considered. It could be internal or external to the job. The process of leaving was more complex, there are many ways or path. Some of these events, eventually or immediately, caused job dissatisfaction, but some did not. There are many reasons that people use to leave their jobs. The unfolding model describes four paths people consider when they leave a job as following;

Path 1: Following a Plan

Following a plan is characterized by a shock to the system and a plan for leaving. The employee whose receive a hiring bonus, the standard three month's training, bonus for finishing the training and quit their job suddenly. This reaction is precipitated by shock. The shock can be expected or unexpected. It can be positive, neutral, or negative. The key point is that a plan is in place. The event happens and the person thinks about leaving, calls up the plan, and then leaves. Dissatisfaction is not the initiating cause, and there is no search for alternatives.

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Path 2: Leaving without Plan

Is happened by a shock impact, but there is no plan in place. Again, the person leaves their jobs without searching for alternatives. For example, a nurse was denied her request for six months' leave; an employee whose father became ill needed to move closer to his home; a transfer request was denied; a friend was laid off; an individual was passed over for a promised promotion. In all these cases, the people left without considering alternative jobs. The shocking event is often negative and involves such a violation which affects the emotions to be distrust and decide to leave the organization.

Path 3: Leaving for Something Better

Person considers alternatives and eventually leaves, usually with another job in hand. A considerable number reports the shock as being an unsolicited job offer. Many of these people are not dissatisfied with their jobs. Dissatisfaction is often relative; the people like where they are, but the alternative is better. The key is that the shock triggers the relative dissatisfaction, which leads to consideration of alternatives, which results in quitting. This process tends to be very thoughtful and quite complex.

Path 4: Leaving an Unsatisfying Job

There are two different reasons in which job dissatisfaction leads to quitting. People become dissatisfied and leave without searching for another alternatives. Many people will quit because they got bored, failed to make friends, or changed in such ways that their current job was clearly not where they wanted to be.

This also involves accumulated job dissatisfaction, but here the person does look for alternatives. They leave upon finding a more attractive option. Dissatisfaction leads to search, which leads to leaving. Cost cutting, increased

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workloads, or continuing problems with work schedules or work assignments that over time led to dissatisfaction, search, and leaving.

In summary, Mitchell, Holtom, and Lee (2001) have added to the accepted principles that dissatisfied people who have options quit. This research shows that many people leave as a result of shocks. Many of the shocks are external and don't involve money. Many people are relatively satisfied when they leave. The paths are taken and occur with different speeds, suggesting that a rich diversity characterizes voluntary turnover.

Job Embeddedness

Many off-the-job variables can influence employees' retention in organization such as family pressures and community commitments. Many people stay because of attachments (e. g., coworker, employee network groups). Leaving the job often requires people to sacrifice. Job embeddedness is the factor that influence the retention of employees, including the traditionally concept, the job satisfaction and job search. There are three factors in this concept: links fit and sacrifice.

1. Links is official or unofficial form of connection between person, place, or organization included in on-the-job and off-the-job. The job embeddedness indicated the relationship between employee and their family in term of sociality, psychology, and remuneration. The amount of the connections is the important factors to retain in the organization. Although, there are different significance in each connection, but the connections including in or off-the-job environment, friend, co-worker, and community which related together as being like a web. The more degree of connections, the more retention in organization is likely to be.

2. Fit is the individual perception of fit with the on or off-the job factors, employee attitude, goal, and future plan, must fit with the organization culture, employee knowledge, and skills. Employee will consider the fit between themselves

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and organization or community. If they are fit with organization or community, they are likely to reduce the resignation and increasing in the retention.

3. Sacrifice is the something that person will loss, if resign from organization The acceptation of loss, in term of tangible and intangible, in current and future; coworker, work project, current position, or remuneration, they will take in to the account of the decisions making to stay or leave. The more benefit, tangible and intangible, will increase the employee retention. (Mitchell, Holtom, and Lee, 2001)

Thailand Health System

Governance

Health facilities to provide health services are distributed throughout the country. Although both public sector and private sector services are made available throughout the country, public health facilities dominate.

Public health facilities in Bangkok, there are 5 medical school hospitals, 26 general hospitals, 13 specialized hospitals, and 68 public health centers. In addition to 6 medical school hospitals at the regional level, there are 25 regional hospitals and 48 specialized hospitals. In 77 provinces- in urban areas, there are 132 general hospitals in which 69 hospitals are under MoPH, 59 hospitals under the Ministry of Defense, 1 hospital under the Ministry of Education (MoE) and 3 hospitals under the Local Administration Organizations. There are 214 urban health centers providing primary care services to the urban population (Vibulpolprasert, and Sirikanokwilai, 1999).

In rural areas, all community hospitals and health centers are under MoPH. Overall, there are 734 community hospitals and 9,768 sub-district health centers providing care in rural areas. The number of community hospitals comparing to number of districts, the number of community hospital could cover all districts at

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83.60%. Also the community primary health care centers could cover only 68.45% of all villages.

There is a close link among health facilities under MoPH in terms of the referral and supervision systems. Sub-district health centers serve as the frontline health facilities whereas community hospitals serve as referral hospitals as well as an essential link between the lower level of health facilities and the upper tier such as general or regional hospitals.

However, private health facilities also play an important role in the Thai health system, particularly in urban areas. In 2010, there were 17,187 drug stores where 4,590 stores (26.7%) were located in Bangkok. There were 17,671 medical clinics available in 2010, where 3,878 clinics (21.9%) were located in Bangkok. For private hospitals, only 96 out of 322 hospitals (29.8%) were in Bangkok.

The health system has been affected by the transitions of macroeconomic and government policies and other factors. The state of the expansion of private health facilities, resulting from Thailand's economic growth and government policy to promote Thailand as the medical hub of the region have put pressure on the Thai health system. Moreover, the universal coverage scheme implemented in 2001 resulted in increasing service utilizations. Coincidently, the public sector reform implemented in 2001 with the zero growth of civil servant positions made it difficult to attract and retain health workforce in public sectors. The Decentralization Act implemented in 1999 prompted the MoPH to prepare the delegation of some health facilities to local authorities, though not much progress has been shown so far. Furthermore, the increase of the elderly accompanied by the increase in chronic illness indicates an increasing of demand for health services. These transitions have indicated an increase of health demand both from the public and private sectors, and that more health workforce is required.

Level of Community Healthcare Services

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The Thai health system has provided comprehensive care to the population ranging from community health care to specialty care as follows.

Community healthcare services: The services provided at the family level as well as at communities or villages where the people live. These services include: health promotion and prevention for healthy people to protect and prevent them from sickness, long-term care for elderly and chronic patients living in communities or villages. These types of care are delivered at homes and communities by the non-formal health workforce: trained village health volunteers, elderly groups, trained care givers, as well as the mainstream health workforce: primary care workers, public health physicians, nurses, etc.

Primary healthcare services: Health centers located close to the communities function as the bridge between community health care services and main stream health services. The services provided include curative, health promotion, disease prevention, and rehabilitation services. The services are provided at health centers as well as at communities. The key health workforce working at health centers are nurses, public health officers, and dental nurses (posted in some health centers). Physicians are made available at urban health centers and they also provide mobile clinics and technical support to rural health centers once or twice a month. Private clinics have provided mainly curative services to population in urban areas.

Secondary healthcare services: Community hospitals function as secondary health services in rural areas and general hospitals and private hospitals provide such services in urban areas. The type of services mainly target curative and rehabilitative care at individual level. Physicians and health teams are responsible for providing care at this level. The facilities also serve as referral hospitals for primary care facilities.

Tertiary healthcare services: These types of facilities are located in cities, and function as referral hospitals. These facilities include general hospitals, regional hospitals, medical school hospitals, specialized hospitals, and large private hospitals.

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The services provided at these facilities are mainly in curative care, particularly in medical specialized services. A range of health workforce, particularly physicians with specialty and sub-specialty trained are made available.

Recruitment

Before 2001, all health workforces were hired as civil servant positions where recruitment was made centrally, by the Civil Service Commission (CSC). The employment rule and regulations were applied at all public health facilities. Health workforce were hired with the civil servant benefit packages, i.e., permanent contract, civil servant medical benefit package, career advancement, opportunity for continuing education, and other fringe benefits. However, the downsizing policy, implemented in 2001, put a limitation on recruitment of new staffs as civil servants at all health facilities.

Since 2001 onward, the health workforce is recruited locally by each health facility and employed as temporary employees. The salary scale has been developed by the central MoPH, however, it has provided some room for local discretion. Temporary staff is hired by each facility, and there is no such benefit packages such as those of civil servants. Therefore, without attractive incentives like those of civil servants, the turnover rate for temporary staff is very high.

Staff Turnover

Though some mechanisms have been implemented to facilitate the health workforce distribution, i.e., financial regulation to hire staff, staffing standard setting for each health facilities; minor changes of the health workforce distribution have been observed. In general, though some health facilities are able to hire more staff with their own revenue, lack of attractive benefit packages to hire temporary employees have resulted in high turnover rate of temporary employees from the public sector both in urban and rural areas. This has left many large health facilities struggling with staff shortages.

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Rural health facilities were affected most, particularly from physician turnover. Although new graduated physicians were posted at rural hospitals each year, the physicians turning over from community hospitals have added to the existing shortage problem. The turnover rate trend increased sharply from 2000 to 2003. However, the trend was quite stable after 2004. Interestingly, the turnover rate slightly declined from 11% in 2008 to 9.2% in 2009. One possible explanation was that the MoPH increased financial incentives for physicians and other health workforce working at rural health facilities in 2008-9. However, the trend bounced back in 2010, as the financial increase was not stable due to the shortages of facility revenue.

Table 4 Turnover from Community Hospitals of Physicians in Relation to Physicians Working at Community Hospitals, During 2000-2009

Year	Number of physicians	Turnover	
		Number	%
2000	2,291	114	4.9
2002	2,732	305	11.1
2003	2,885	602	20.9
2004	3,050	242	7.6
2005	3,229	391	12.1
2006	3,523	393	11.1
2007	3,583	376	10.5
2008	3,977	436	11.0
2009	4,439	412	9.2
2010	4,263	544	11.8

Source: MoPH (2011)

Health Workers in the Private Sector

In general, private sector is more flexible in employment system. The recruitment system and the benefit packages offered to the health workforce could be

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designed at each health facility. Compared to public health facility employment, private health facility employment is more attractive in terms of being located in urban areas, offer higher salary, provide better working conditions. Therefore, the expansion of private facilities unavoidably would drain health workforce from public, particularly rural areas. Before the implementation of downsizing policy, in 2001, the civil servant positions offered to health workforce were attractive and would be able to prevent the brain drain from public to private sector to some certain degree, particular for nurses. Hiring as temporary employees is at risk to push the health workforce out to the private sector.

The Distribution of Health Workers

World Health Organization (WHO) gives the definition as all people engaged in action whose primary intent is to enhance health, may divide in two group as, 1) health provider; physician, dentist, or nurse, etc, 2) health management and support workers; accountant, administrative professional in hospital.

WHO estimated the human resource for health as 59 million persons, 67% was a health provider. Normally, health provider is two third of human resource for health. More than 70% of physicians are male and more than 70% of nurses are female. Two third of human resource for health worked for government (WHO, 2006)

An unequally distribution of human resource for health (HRH) as shown in figure 2, the HRH clusters more in countries that the demand for health is low, on the other hand, the problem of HRH in the countries that face the epidemic; aids, or tuberculosis, the demand for HRH is high. The global burden of disease was 10% in USA, but the HRH was 37% of the world. On the other hand, the global burden of disease in Africa was 24%, but the HRH was 3% of the world (WHO, 2006)

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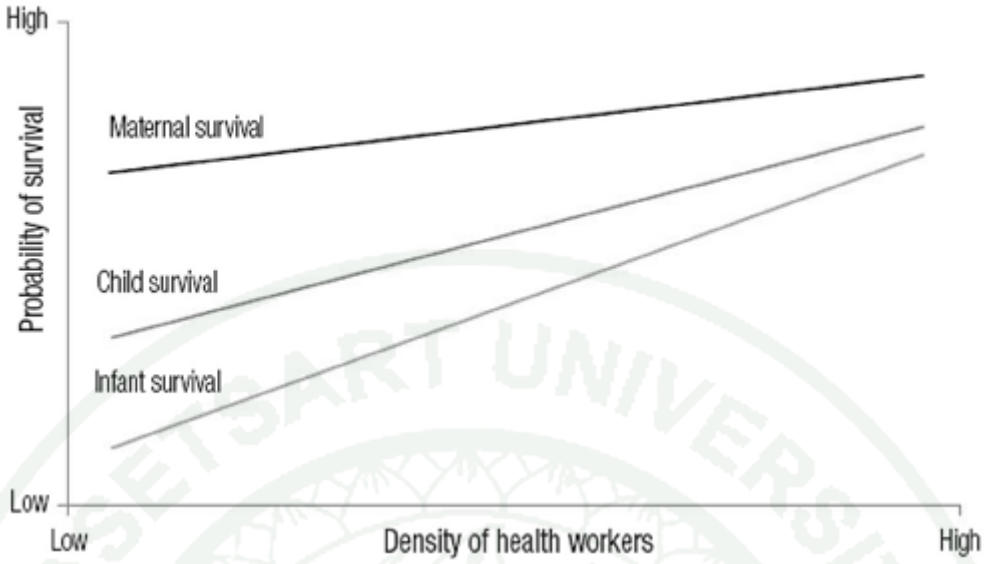

Figure 3 The Relationship of HRH Density and the Possibility of Infant, Maternal, and Child Survivor.

Source: World Health Organization (2006)

WHO indicated countries depended on the density of HRH in 5 groups; 1) low density and death rate, there were 45 countries especially countries in Africa, 2) low density, there were 30 countries; countries in Asia including Thailand, and countries in South America, 3) moderate density, there were 42 countries; countries in South America, East-Mediterranean, and Central America, 4) high density; there were 35 countries, East-Europe, Russia, Cuba, North Korea, and Philippines, 5) high density and low death rate; there were 34 countries; the developed countries. (WHO, 2006)

The Distribution of Physician in Thailand Comparing with Other Countries

The physician density is very low in Thailand compared to countries in South-East Asia. In 1999, there were 18,140 physicians, physician density was 29.4 per 100,000 people, lower than Japan (196.9), Singapore (136.8), Philippines (124.0), Brunei (93.4), Malaysia (68.3), and Vietnam (47.8), but higher only than Indonesia (12.5). (WHO, 2006)

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The Distribution of Physician in City and Rural Area in Thailand

The physician in private sector has increased continuously from 274 persons (6.7%) in 1968 to 3,364 persons in 1995; the economics was in the good condition. The physician in public sector was reduced from 93.3% in 1968 to 76.3% in 1995. The economic crisis in 1997 affected negatively to the number of physicians in private sector to 19.6% and increasing to 21.0% when the economic was in recovery time. (Vibulpolprasert and Sirikanokwilai, 1999**)**

The analysis of the physician number from the population census of Thailand in 2000, was categorized; gender, age, position, domicile, and the distribution in each region and province: 1) 62.65% was male and 37.35% was female, the majority of age was in 30-39 years old (35.44%), 2) the number of physicians living in urban were 5.36 times more than rural area, 3) 70.56% was in public sector, 17.35 was in private sector, and 7.36 was in self-employed. 4) the highest density of physicians was in Bangkok, 668.68 per 10,000 people, 42.4%, in the area that was 10.43% of the country population, and the lowest density was Kalasin in North East region. (Thammarangsi, 2004)

Office of Permanent Secretary of MoPH divided ratios of physician per population into four levels. 1: 6,572 was set to be an appropriate ratio. There were 15 provinces which large number of population per a physician. Almost of 15-province was from North East of Thailand. (see Table 5)

Table 5 The Physician per Population

	Physician per population	**Number of Provinces**
1.	1: 763-1: 2,778	15
2.	1: 2779-1: 6,572	47
3.	1: 6,573-1: 10,365	14
4.	1: 10,366-1: 14,159	1
	Total	**77**

Source: Office of Permanent Secretary (2013)

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The Production of Physician

The production of physician is in control of the Office of the Higher Education Commission (OHEC). The development of physician production was divided in 4 periods as following; (Vibulpolprasert and Sirikanokwilai, 1999)

1. After the external brain drain (1966-1977): the medical school was the important to plant knowledge about Rural Life Style to the physician. MoPH launch the Medical Education for Student in Rural Area Project (MESRAP) in 1975 that chose the students from Central and North region to study in medical school and return to work in their hometown. This project was finished in 1992, affected the increase of the proportion of rural physician per all physicians had increased from 5.26% to 17.55 during 1974-1978.

2. The development in rural health care (1978-1988): the MESRAP had continued to other regions in Thailand in charted of the medical school in that area. Two third of physicians in this project continue to work in the rural area, after finished the 3-year compulsory. The proportion of rural physician per all physicians had increased continuously from 17.55% to 46.61% during 1978-1983, but reduced to 23.09% in 1994 because of the problem of the management in the university. (Vibulpolprasert and Pengpaipoon, 2003)

3. During the internal brain drain (1989-1996): the 2 additional projects to increase number of physician with 3 universities were implemented; 1) Rangsit University, the first private medical school in Thailand, 2) Thammasart University, the student that graduated in health care science can study in medical school for 5 years, In 1994, the parliament indicated to the university for receive additional physician student 340 more each year. The proportion of rural physician student was 26.98-23.37 in1993, before the Collaborative Project to Increase Production of Rural Physicians-CRIRD).

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4. The Collaborative Project to Increase Production of Rural Physicians (CPIRD) and One District One Physician (ODOD) (1997-present): in 1994, the parliament approved the MoPH in collaboration with the OHEC to launch the CPIRD project in 1995, the objectives of this project are to increase physician production the opportunity of the rural student, and equal physician distribution. The students are chosen from rural area, after graduate then go back to be physician in their hometown area for 3 years at least. The 1-3 years of study are in the regional medical school, 4-6 years are in the region hospital.

The One District One Physician (ODOD) project was established in 2005 that provides the scholarship the physician shortage area from GIS to reduce the shortage of physician in rural area. With the exertion of CRIRD and ODOD, the 1,982 additional students had gained during 2001-2008. The proportion of the rural physician had increased from 23.09% in 2537 to 29.64 in 2545. (Vibulpolprasert and Pengpaipoon, 2003)

The Retention of Physician in Thai Community Hospital

The retention of physician in community hospital is physician who still working in community hospital. From the situation in the past, resigned physician who still working in the Government Compulsory contract that affect to the health care system in the province, the other community hospitals have to send their physician to help the community hospital. The reasons for retain in community hospital were not opposite with the resignation reason, but there are few studied in retention factors than the resignation factors.

1. The number of physician who retain in community hospital: the analysis of retain physician number in community hospital was calculated from the number of physicians after three year Government Compulsory in community hospital in each year. In each period of economic situation, found that in recession time (1982-1987), the retention rate was increased from 27.87% to 44.96% during 1982-1987, in bubble economic (1996), the retention of physician decreased to 39.99%, in

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economic crisis (1997), the retention was 50.50%, in recovery of economic (2001-2002), the retention rate was decreased to 40.77-44.44%, after the universal health care policy (2004), the study of 2,700 physicians in community hospital found that 52% was the physician during the three years government contract, 25% was the physician who worked more than 10 years. Especially in 3 provinces in South Region that there was only 16.67% of physician that worked more than 10 years. (Wongwatcharapaiboon and Pengpaiboon, 1999)

2. The retention reasons of physician in community hospital: The opinion survey of 184 physicians who worked in community more than five years (old group) compared to 193 physicians who worked in community less than five years (new group) during 2007-2008, found that the average working year of the first group was 11 year (5-30 years), male (94%), married (86.4), general physician (76.1%), and director of hospital (76.6%), and the average working year of second group was 2 year, male (60%), and single (87.4%). The survey of physician satisfaction found that the job satisfaction of the old group was higher than new group in every point. Although, the old group perceive that they handle more patients than the new group, but the perception of value to the hospital was high, job was diversify, and the development of their skills were improved. The result of this research concluded that physician who has worked in the community hospital for a long time was screened automatically, the job satisfaction was higher than new physicians, and the job satisfaction of a director of hospital group was highest comparing to other groups. (Wongwatcharapaiboon and Pengpaiboon, 1999)

The retention reason of physician found the factors that retained the physician in community after Government Compulsory was the perception making benefit more than the others, working in community hospital that fit with the physician, good work atmosphere, enjoy working, good co-worker and director, the adaptation of family, income, easy for transportation, domicile. The comparison between male physicians (173 persons) and female physicians (11 persons), found that female emphasized on the atmosphere of co-worker or director, working atmosphere, enjoy working more than male physician. In the other hand, male emphasized on the sense that they are

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useful, the fit of job, and family more than female. The result might be influenced from the high majority of hospital director was male and family leader than female. The ranking of retention reasons of director would be same as male physician. When comparing the director and permanent physician found that permanent physician emphasized on income, family, and easy of transportation than co-worker or director atmosphere, and the sense that they are useful more than the other places. The new group of physician that resigned from community hospital proposed the five factors that would retain physician in community hospital: 1) good team worker 2) effective hospital management 3) enough permanent physician 4) working near domicile 5) appropriate income. (Wongwatcharapaiboon and Pengpaiboon., 1999)

This study surveyed the intention of new physician to retain in community hospital, found that 98% had plan to move out of hospital after two years Government Compulsory, almost want to study in specialist (86.8%), move to region/general hospital (5.5%), private hospital (2.2%), continue working in community hospital (2.25%). The main reasons for leaving out were study in specialist, and boring routine job, especially in permanent physician. When survey the physicians who were studying in specialist and had experience working in community hospital, they comment about community hospital such as lack of good team work, lack of using the knowledge that had studied, hard to get the new knowledge, and lack of career development. They felt lower honor than be specialist in city, lack of freedom to use power. The interesting that workload was not the main factor that affected to the resignation. The five important factors that this physician group proposed was: 1) effective in hospital management 2) good teamwork 3) higher income 4) convenient in telecommunicate and transportation 5) good school for child, and almost did not want to work in dangerous area. (Wongwatcharapaiboon and Pengpaiboon., 1999)

The retention of physician in community hospital could concluded that the retention rate of each year, found that the retention rate increased in regression economic, but decrease to 39.99% in bubble economic, after the economic crisis, the

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retention rate was increase to 50.50%, and decreased again in recovery of economic. 52% of physicians in community hospital were physicians who were working during three year compulsory. The retention reasons of physicians who worked more than 5 years was: the sense that they are useful than other place, the fit with job, good teamwork, the fit with family, income, transportation, convenience to communicate, and near domicile.

Related Studies

The retention problem of physician in community hospital has been expanded in high majority of countries around the world; many researchers have studied the factors that affect the retention of physician in many countries. Crandall, Dwyer, and Duncan (1990) developed the retention model of HRH by proposing four programs that encourage the recruitment and retention of rural physician as following;

1. Affinity model: the recruitment system support the physicians to work in their domicle and encourage a familiarity and interest to work in rural area since start studying in medical school. The assumption of this model is that the more of job satisfaction, the higher of physician retained in rural area. The medical school in rural area would be one of the strategies in this model.

2. Economic Incentive Model: development of remuneration system for physicians will motivate them to work in rural area.

3. Practice Characteristics Models: Develop the working structure in rural area with supporting the medical equipment from government, the knowledge from medical school, and the mobility of patients would reduce the isolation, and workload among the physicians in rural area.

4. Indenture models: the agreement or contract of working in rural area after graduation. The researchers found that the tendency of the physician who come from the rural area deciding to work in their domicilde is reduced. This research proposed

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that the working adaptation in rural area is an important factor in physician retention in rural area.

Cutchin (1997) proposed the conceptual framwork of physician retention by collecting the data from deep interview with fourteen physicians in Kentucky, USA. This conseptual framwork was called experiential place integration combined from security, freedom, and indentity. The experiential place integration is the connection interaction among physicain and community, it is the important factor for physician retention in rural area. This concept consist of 1) Security 2) Freedom, and 3) Identity.

1. Security: the level of security, and confidence in the achivement of working: 1) anofidence of medical service, 2) personal work goal, 3) family, 4) supporting of medical community and hospital, 5) workload 6) the connection with culture and socity, and acceptance from community.

2. Freedom: the degree of willingness that adapt along with environment: 1) the challenging and diversify of services for physician in rural area, 2) adequalte time for patient,3) the coperation among medical community and people, 4) the power in management, 5) the ability to develop the medical system, 6) the paticipation in community activity, 7) the time for hobby or family, and 8) the development of attitude.

3. Identity: the connection between the others, social community, environment , and physicain. The strong point of Indentity bases on the Security and Freedom: 1) Like-Minded Practice Group,2) the responsibility in hospital and community, 3) the reputation in medical community or people in community, 4) job commitment, 5) future plan in rural area.

These three dimensions encourage the acknowlegement of themselves to community and hospital throught the work experience and activiy in rural area for a long time.

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Schoo, Stagnitti, Mercer, and Dunbar (2005) commented to the recruiting and retention model (Crandall, Dwyer, and Duncan, 1990) that emphasize only each dimension but lack of the connection between each dimension. To complete the model, theese three dimensions must be balanced: 1) Individual needs (family, friend, job, and income), 2) Organization needs (government, law), 3) Communities needs (people that use medical service). When theese factors of have the good connection, the retention will increase. This research informed that there are 45% of physicains who receive the support in work, will retain in organization more than two years.

The main factors that affect the retention of physician in community hospital were collected from other countries and Thailand since 1999 to present, are concluded in three dimensions as following:

Personal Factor

Family Responsibility – The Thai Ministry of Public Health announced that the salary rate depended on the degree of remote area and number of working years. This policy does not concern with the workload. Therefore, this leads to the argument between physicians in public system. The place of hospital does not reflex to the number of patients. In Vietnam, the salary was first rank to encourage physicians to work and stay in rural areas following by working conditions and training opportunities respectively (Witte, Ha, Shengalia, and Vujicic, 2011). However, in Canada (Mathews, Seguin, Chowdhury, and Card, 2012) said that the economic factors were not mentioned first but it was the grounded factor affecting the physician turnover.

Work-related Factors

Government Compulsory – In Thailand, physicians who graduated from government medical school have to work for 3 years until the grant is used up. Otherwise, they must pay 400,000 Baht (US$15,000). However, this fine could be replaced by working in private hospital for only six months long. In Japan, the

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retention rate of the physician in rural area for physician from JMU (Jichi Medical University) is 10.7% which is higher than other medical schools. JMU selects two or three medical students per area, after graduated, they have to work in their area for six years, and otherwise, they have to pay nine million Baht (Pagaiya *et al.*, 2011).

Hospital Facility – the importance of adequate equipment and facilities make their work possible. From the literature review, this is one of the factors to choose the work place of young physicians. The majority of physician students were in favor of working in rural Nepal after graduation. They wanted facilities in rural areas and health centers to be improved. (Shankar and Thapa, 2012)

Job Fit – Chunharach, Sriwanichakorn, and Walyaseri (1999) explored the cause of the retention of physicians who work in community hospitals. The physicians felt that they are worthy more than hospital in city. Accordance with the appropriate dimensions of a physician on the context of the job and off the job (Fit) in the structure of Job Embeddedness. (Mitchell, Holton, and Lee, 2001)

Job Variety – Challenge and diversity of practice in a community hospital allow intern practices that match their abilities. This factor is consistent with the needs of general physicians more than specialized physician. Tinnitus Depth interviews with physicians in Nakhonratchasima province found that this group will not go study and work like the width rather than the depth. In community hospital, the system is conducive to challenging work and a variety of operations corresponding to a physician practice that meets their needs, it will remain physician in the community hospital. The variety of operations needs the efficient and effective management system. (Virasombat, 2009)

Workload Sharing – Enhancing nurse in the absence of a physician, good medical practice management would link to the performance of the job. Including the development of professional, this is a factor for the individual needs of physicians. The clinical care of patients and a variety of operations, these factors affect the workload and reasonable compensation. (Virasombat, 2009)

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Work Relationship – The working environment and organization culture are the cited reason for leaving of general physicians. The work environment includes the collaborative nature of the practice, the relationship with administrators, and access to resources. Having sufficient staffs to handle is very important to reduce the physician turnover (Virasombat, 2009). Quinn, (2009) conducted a research by interviewing the physicians in rural area in USA and found that the mentor was one of the factors to retain in rural area. Snow et al., (2011) interviewed Ghana, physicians, and found that mentor can increase the retention of physicians.

Work experience – Satisfaction of physicians refers to the emotional satisfaction of a person as a result of experience gained from working (Locke, 1969). The resignation of dentists in the dental hospital showed that the dentists plan to work in a community hospital after graduated, to develop skills and enhance the experiences only. (Duangjai and Komson, 2000). Intern is the main force in the performance of the community hospital. The age range of 25-30 years is the development of the profession to find a continual experience. Even though, an intern has no expertise in the treatment of many diseases. This group of intern is looking for expertise and revenue from operations outside duty hours (Virasombat, 2009).

Community-related Factors

Rural Life Style - physicians with a good attitude toward rural area, love to live in the countryside; will stay in the rural hospital for a long time. Some of physicians remain, though not rural domicile, because they feel that they are more useful than being in main city. Point of view about workload, many physicians may be bored to talk to the patients, however, this group of physician sees as relaxation talking to the locals (Virasombat, 2009).

Social Recognition – Physicians, who remain in rural area for a long time, were accepted as a part of the community. They were valuable to community (Virasombat, 2009). In Thailand, physician is a respectable career, especially, a

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physician who works in government hospital. They would be respected from people in the area. This phenomenon is the same in Vietnam, physician is a high-ranking profession and this factor was cited as the reason to be a physician (Witte, Ha, Shengalia, and Vujicic, 2011).

Conceptual Framework

The retention of physician in community hospital started with the review of factors that affect employee resignation. Motivation, job commitment, and job satisfaction were studied as mediators to affect employees' decision. Afterwards, Mitchell, Holtom, and Lee, (2001) explaining the resignation of employee by on-the-job and off-the-job factors. Job embeddedness was proposed to predict the resignation and retention of employees. There are three factors; 1) Link, 2) Fit, and 3) Sacrifice. The study of physician retention, the retention model was used to explain the retention factors of physician in community hospital, the concept consist of 3 dimensions: 1) security, 2) freedom, and 3) indentity (Cutchin,1997). After that, Schoo, et al., (2005) proposed model that divided the factors in three dimensions: 1) individual needs, 2)organization needs, and 3) community needs. The factors that affecting the retention of physician were collected from researches in Thailand and other countries. Ten related factors were studied in this research; 1) Family Responsibility (Witte, Ha, Shengalia, and Vujicic, 2011), 2) Government Compulsory (Pagaiya *et al.*, 2011), 3)Hospital Facility (Shankar and Thapa, (2012), 4) Job Variety (Virasombat, 2009), 5) Job Fit (Chunharach, Sriwanichakorn, and Walyaseri 1999), 6)Work Experience (Virasombat, 2009),7) Work Relationship (Virasombat, 2009), (Quinn, 2009),8) Workload Sharing (Virasombat, 2009), 9) Rural Life Style (Virasombat, 2009), 10) Social Recognition (Virasombat, 2009), (Witte, Ha, Shengalia, and Vujicic, 2011). (see Table 6)

Table 6 The Source of Independent Factors

Factors	**Authors**
1. Family Responsibility	Witte, Ha, Shengalia, and Vujicic, 2011

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Table 6 (Continued)

Factors	Authors
2. Government Compulsory	Pagaiya *et al.*, 2011
3. Hospital Facility	Shankar and Thapa, 2012
6. Work Exprience	Virasombat, 2009
7. Work Relationship	Virasombat, 2009, Quinn, 2009,
8. Workload Sharing	Virasombat, 2009,
9. Rural Life Style	Virasombat, 2009
10. Social Recognition	Virasombat, 2009, Witte, Ha, Shengalia, and Vujicic, 2011

Conceptual framework of this research was developed from retention model of Schoo, et al., (2005) by put ten related factors in three dimensions; Personal Factors, work-related, and Community-related Factors as following;

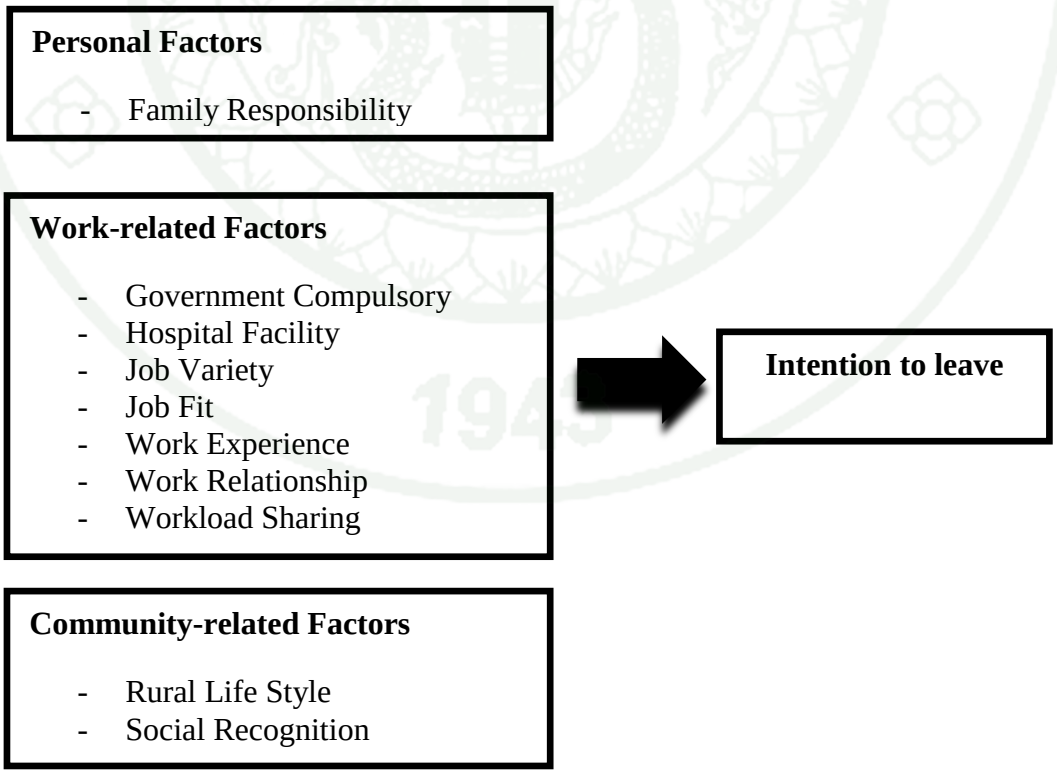

Figure 4 Conceptual Framework

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Hypotheses

Based on the conceptual framework shown in Figure 4, can be drawn hypotheses as follows:

H1 Family Responsibility is a significant predictor of intention to leave

H2 Government Compulsory is a significant predictor of intention to leave

H3 Hospital Facility is a significant predictor of intention to leave

H4 Job Variety is a significant predictor of intention to leave

H5 Job Fit is a significant predictor of intention to leave

H6 Work Experience is a significant predictor of intention to leave

H7 Work Relationship is a significant predictor of intention to leave

H8 Workload Sharing is a significant predictor of intention to leave

H9 Rural Life Style is a significant predictor of intention to leave

H10 Social Recognition is a significant predictor of intention to leave

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CHAPTER III

METHODOLOGY

This chapter presents the methodology used in this research. It is divided into four sections. Section one describes the population of interest. Section two explains the instrumentation including the measurement scaled used for the dependent and independent variables. Section three illustrates the data collection process. The last section demonstrates the method overviews method of data analysis.

Population

The population of interest for this research was 637 medical interns who were allocated to 175 community hospitals in 15 provinces during 2011-13. (Office of Permanent Secretary, 2013). These 15 provinces have a large number of populations per a physician which are higher than an appropriate ratio of 1:6,572 set by Office of Permanent Secretary of MoPH (see Table 7).

Table 7 Ratio of Physician per Population in 15 Provinces

Province	Physician per population	Region
National average	1 : 2,778	
1. Loei	1 : 14,158	Northeast
2. Nakhonphanom	1 : 9,537	Northeast
3. Kamphaengphet	1 : 8,760	North
4. Sisaket	1 : 8,756	Northeast
5. Roiet	1 : 8,032	Northeast
6. Sakonnakhon	1 : 7,769	Northeast
7. Phetchabun	1 : 7,633	North
8. Kalasin	1 : 7,570	Northeast
9. Nongbualamphu	1 : 7,532	Northeast

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Table 7 (Continued)

Province	Physician per population	Region
10. Chaiyaphum	1 : 7,413	Northeast
11. Yasothon	1 : 7,202	Northeast
12. Buriram	1 : 7,015	Northeast
13. Surin	1 : 6,869	Northeast
14. Amnatcharoen	1 : 6,831	Northeast
15. Narathiwat	1 : 6,820	South

Source: Office of Permanent Secretary (2013)

According to the data from Personnel Administration Division of MoPH in 2011-2013, 637 medical interns were allocated to community hospitals in the 15 provinces. Referring to the sample size in the table of Krejcie and Daryle (1970), at confidential level at 95%, the sample size would be 242. (see Table 8)

Table 8 Table for Determining Sample Size from a Given Population

Population size	Sample size
550	226
600	234
650	242
700	248
800	254

Source: Krejcie and Daryle (1970)

Research Instrument

The survey instrument is a questionnaire which include questions corresponding to the research model: dependent variable (intention to leave), and independent variables (Family Responsibility, Job Variety, Work Relationship, Hospital Facility, Workload Sharing, Job Fit, Work Experience, Government

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Compulsory, Rural Life Style and Social Recognition), along with personal background. The questionnaire was mainly developed from Virasombat, (2009). It consists of 2 parts, in total of 42 questions. (see Appendix C)

Part 1: Personal Background

This part was designed to ask about general personal backgrounds and backgrounds (question 1-9) by using both the close-ended and open-ended questions. It includes gender, age, marital status, domicile, medical school admission system, medical school, tenure, workload, and salary.

Part 2: Perception towards the Related factors, and the Intention to Leave

The questions asked the intern about their perception towards 3 major related factors: personal (question 10-12), work-related (question 13-33), and Community-related Factors (question 34-39) of interns in community hospital. Also, they were asked about intention to leave (question 40-42). Likert's five point scale was applied in this part. (see Appendix C)

The Likert's Scale used for measuring the level of agreement is as follows.

5 = Very Highs
4 = High
3 = Neutral
2 = Low
1 = Very low

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Questionnaire Testing

Accuracy

The questionnaire was developed under supervision and recommendation of the advisor and physicians in community hospitals. This process aimed to check the language and scale used, and overall format of the questionnaire.

Reliability

The 30 questionnaires were tested as a pilot study with medical interns in ten community hospitals in Nonthaburi and Pathumthani provinces. By using A Cronbach's alpha coefficient, the result was analyzed in each part to determine the reliability. A Cronbach's alpha coefficient should be at least 0.70 or higher (Siljaru, 2012). Consequently, all part of tested questionnaires had Cronbach's alpha coefficients more than 0.70 which suggested acceptable levels of internal reliability. (see Appendix A)

Data Collection

Primary data was collected from 637 questionnaires that were distributed to 637 interns in 175 community hospitals in the 15 provinces. The number of questionnaires which sent to each community hospital refers to the number of interns. Only 260 questionnaires, 40% out of total were returned from 120 community hospitals (68.57%) in 10 provinces (See Table 9). 235 questionnaires were usable. There were five provinces with no returned questionnaire: Loei, Kalasin, Nongbualamphu, Amnatcharoen, and Narathiwat. The reason is that data collection from medical interns was very difficult. Contacting them directly was almost impossible. Population of this research worked for state hospitals which normally have many patients. It was quite impossible due to time constraints to track the questionnaires back. Even though, the sample size did not reach the requirement of at least 242 responses from 15 provinces, the 235 usable questionnaires were only the

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accessible of completed data, accounting for 97% of the minimum required number of samples. It could be considered acceptable with a remark.

Table 9 Response Rate of Questionnaires in the 15 Provinces

Province	Sent	Return	%
1. Loei	33	0	0.00%
2. Nakhonphanom	27	12	44.44%
3. Kamphaengphet	36	21	58.33%
4. Sisaket	48	27	56.25%
5. Roiet	76	45	59.21%
6. Sakonnakhon	78	35	44.87%
7. Phetchabun	45	27	60.00%
8. Kalasin	18	0	0.00%
9. Nongbualamphu	21	0	0.00%
10. Chaiyaphum	66	33	50.00%
11. Yasothon	36	12	33.33%
12. Buriram	45	23	51.11%
13. Surin	45	25	55.56%
14. Amnatcharoen	24	0	0.00%
15. Narathiwat	39	0	0.00%
Total	637	260	40.00%

Data Analysis

All data in each questionnaire were rechecked, encoded and ready to be processed and analyzed using statistical packaged software program.

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Analysis of Primary Data

Part 1: Personal backgrounds

This part was designed to ask about general personal backgrounds and backgrounds. Descriptive statistics including frequency and percentage were utilized to draw conclusions about demographic of respondents.

Part 2: Perception towards the Related factors, and the Intention to Leave

Likert's five point scale was applied in this part. In this study, descriptive statistics has been used in analyzing data including mean ($\overline{X}$) and standard deviation (S.D.)

To interpret the perception towards the related factors and intention to leave, the score was divided into 5 levels with an equal range that was calculated as follows.

$$\text{Range} = \frac{\text{High Score} - \text{Low Score}}{\text{Number of Layers}}$$

$$= \frac{5 - 1}{5}$$

$$= 0.80$$

Based on the calculated range, the ranges of mean score were assigned and interpreted as follows.

Mean score	Level of agreement
4.23-5.00	Very high
3.42-4.22	High
2.62-3.41	Neutral
1.81-2.61	Low
1.00-1.80	Very Low

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Part 3: Hypothesis testing

Stepwise multiple regression analysis was conducted to evaluate whether the Personal Factor, Work-related Factors, and Community-related Factors were significant to predict intention to leave. The statistical significant level was set at 0.05.

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CHAPTER IV

RESULTS AND DISCUSSION

The research was conducted to study factors affecting the intention to leave of interns in community hospital. The results of this study were analyzed into eight parts.

Part 1: The respondents' Personal Backgrounds
Part 2: Perception towards Intention to Leave of the Respondents
Part 3: Perception towards Personal Factors of the Respondents
Part 4: Perception towards Work related Factors of the Respondents
Part 5: Perception towards Community-related Factors of the Respondents
Part 6: Stepwise Multiple Regression
Part 7: Hypothesis Testing
Part 8: Discussion

Part 1: The Respondents' Personal Backgrounds

Table 10 displays the frequency counts of selected respondents. The demographic data shows that the respondents fell into several categories such as gender, marriage, domicile, enrollment, medical school, and tenure. The data from Table 10 indicates that most of the interns who are still in community hospital born in other provinces (83.4%). Physicians who are from special projects such as CPIRD stay in the hospital community longer than physicians who are from normal program (69.40%). Moreover, most of the interns are graduated from medical school outside Bangkok (72.80%).

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Table 10 Frequency and Percent of the Respondents' Characteristics

(n = 235)

Variables	Category	Frequency	Percent
Gender	Male	104	44.30
	Female	131	55.70
Age	23-26 years old	181	77.02
	27-29 years old	54	22.98
Marital Status	Single	219	93.20
	Married	16	6.80
Domicile	Bangkok	39	16.60
	Other provinces	196	83.40
Medical school	Ordinary admission (entrance exam)	72	30.60
admission	CPIRD or others	163	69.40
Medical School	Medical School in Bangkok	64	27.20
	- Chulalongkorn University	-20	-31.25
	- Mahidol University	-25	-39.06
	- Thammasat University	-15	-23.44
	- Srinakharinwirot University	-4	-6.25
	Medical School in other provinces	171	72.80
	- Chiang Mai University	-72	-42.11
	- Khon Kaen University	-85	-49.70
	- Price of Songkla University	-14	-8.19
Tenure	3-12 Months	133	56.60
	13-24 Months	72	30.64
	25-36 Months	30	12.77
Salary	17,000-21,000 Baht/month	159	64.90
	21,001-26,000 Baht/month	86	35.10
Workload	30-65 patients/day	155	65.96
	66-100 patients/day	80	34.04

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Part 2: Perception towards Intention to Leave of the Respondents

Referring to Table 11, the mean of overall intention to leave of the respondents was 1.94 which was considered to be low level. It means most interns are not willing to leave the community hospitals within the Government Compulsory contract.

Table 11 Mean, Standard Deviation, and Interpretation of the Intention to Leave

(n = 235)

	$\overline{X}$	S.D.	Interpret
Intention to leave	1.94	.89	Low
40) Do you intend to resign before the end of the Contract?	1.94	.89	Low
41) You want to resign before the end of the Contract.	1.95	.90	Low
42) You are more likely to resign before the end of the Contract	1.94	.93	Low

Part 3: Perception towards Personal Factors of the Respondents

Table 12 indicates that Family Responsibility fell into the high level at 3.61. It was from the mean of questions 10-12 (see Appendix C). It indicated that interns are responsible for their family in term of money in high level.

Table 12 Mean, Standard Deviation, and Interpretation of the Family Responsibility

(n = 235)

	$\overline{X}$	S.D.	Interpret
Family Responsibility	3.61	.85	High
10) You are responsible for the financial factors in your family.	3.73	.89	High
11) You are responsible for your own family.	3.60	.92	High
12) You need extra income for your family	3.51	.91	High

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Part 4: Perception towards Work related Factors of the Respondents

According to Table 13, the respondents put high attention to work related factors at mean equal to 3.98. It was from the mean of questions 14-34 (see Appendix C). The highest score is work experience, and the lowest is Government Compulsory. The result was in line with the majority of respondents' age. Work experience seems to be a significant factor for their career path while Government Compulsory contract is unlikely to affect their decisions to leave.

Table 13 Mean, Standard Deviation and Interpretation of the Work-related Factors

(n = 235)

	$\overline{X}$	S.D.	Interpret
Job Variety	4.31	.649	Very high
Work Relationship	4.15	.630	High
Hospital Facility	3.99	.584	High
Workload Sharing	3.69	.580	High
Job Fit	4.31	.588	Very high
Work Experience	4.55	.580	Very high
Government Compulsory	2.88	1.06	Neutral
Total	**3.98**	**.667**	**High**

Part 5: Perception towards Community-related Factors of the Respondents

This part shows the result of the data analysis from community factors using mean and standard deviation. Refer to Table 14; the interns consider Community-related Factors as an important factor for their decision at 4.37. Rural Lifestyle and Social Recognition were rated in very high level at 4.36 and 4.38, respectively. It was from the mean of questions 35-40. The result showed that interns are still working in community hospitals because they have good attitude towards community area. Most of the respondents satisfy with their rural lifestyle and earn respect from the local people.

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Table 14 Mean, Standard Deviation and Interpret of the Community-related Factors (n = 235)

	$\overline{X}$	S.D.	Interpret
Rural Life Style	4.36	.731	Very high
Social Recognition	4.38	.679	Very high
Total	**4.37**	**.705**	**Very high**

Part 6: Stepwise Multiple Regression

As mentioned in Chapter II, there are ten independent factors which are Personal Factor (Family Responsibility), Work related factor (Job Variety, Work Relationship, Hospital Facility, Workload Sharing, Job Fit, Work Experience, Government Compulsory), Community-related Factor (Rural Life Style, and Social Recognition), and dependent variable (Intention to leave). According to the research objective to predict intention to leave of interns in community hospitals, stepwise multiple regression was used to remove the weakest correlated variable and left with the appropriate variables (Siljaru, 2012). As the result, equation will be set for predicting intention to leave of interns in community hospitals.

From Table 15: five factors (Work Relationship, Hospital Facility, Workload Sharing, Work Experience, and Rural Life Style) were excluded from equation. The model was found statistically significant five independent variables (Government Compulsory, Family Responsibility, Job Variety, Job Fit, and Social Recognition) could significantly predict intention to leave at 0.05.

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Table 15 The Accuracy of the Model: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	P-Value
1	Regression	50.032	5	10.006	16.336	.000**
	Residual	136.596	223	.613		
	Total	**176.284**	**244**			

Predictors: (Constant), Government Compulsory, Family Responsibility, Job Variety, Job Fit, Social Recognition

Dependent Variable: intention to leave

From the Table 16, in the fifth equation, the most appropriate to predict intention to leave at accuracy of prediction was 26.8 percent. Five independent variables include Government Compulsory, Family Responsibility, Job Fit, Job Variety, and Social Recognition.

Table 16 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.322[a]	.104	.100	.8583
2	.408[b]	.166	.159	.8296
3	.447[c]	.199	.189	.8148
4	.495[d]	.245	.232	.7929
5	.518[e]	.268	.252	.7826

Predictors: (Constant), Job Fit, Government Compulsory , Family Responsibility, Social Recognition, Job Variety

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Table 17 Coefficients of Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
5	(Constant)	3.741	.471		7.950	.000**
	Job Fit	-.355	.101	-.229	-3.528	.001**
	Government Compulsory	.293	.051	.347	5.759	.000**
	Family Responsibility	.317	.067	.300	4.709	.000**
	Social Recognition	-.260	.096	-.196	-2.710	.007**
	Job Variety	-.258	.098	-.185	-2.636	.009**

Dependent Variable: Intention to Leave

The result showed that 5 out of 10 factors (Family Responsibility, Job Variety, Job Fit, Government Compulsory, and Social Recognition) could be used to predict the intention to leave of interns statistically significant at 0.5 levels. Therefore, the regression equation for predicting intention to leave of interns was:

Intention to leave = 3.5741 + 0.317 Family Responsibility - 0.258 Job Variety – 0.355Job Fit + 0.293Government Compulsory - 0.260 Social Recognition

$R^2 = 0.268$, $p = 0.000$, $R^2_{adj} = 0.252$

Part 7: Hypothesis Testing

According to Chapter II, there were ten hypotheses to test the predicting factors of intention to leave. The result of the hypothesis testing based on the equation drawn from stepwise multiple regressions.

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H1 Family Responsibility is a significant predictor of intention to leave

Family Responsibility, the standardized (Beta) is equal to 0.300. Family Responsibility is a statistically significant predictor of intention to leave as proposed in hypotheses.

H2 Government Compulsory is a significant predictor of intention to leave

Government Compulsory, the standardized (Beta) is equal to 0.347. Government Compulsory is a statistically significant predictor of intention to leave as proposed in hypotheses.

H3 Hospital Facility is a significant predictor of intention to leave

Hospital Facility was excluded from the equation. Family Responsibility is not a statistically significant predictor of intention to leave as proposed in hypotheses.

H4 Job Variety is a significant predictor of intention to leave

Job Variety, the standardized (Beta) is equal to -0.185. Job Variety is a statistically significant predictor of intention to leave as proposed in hypotheses.

H5 Job Fit is a significant predictor ofintention to leave

Job Fit, the standardized (Beta) is equal to -0.229. Job Fit is a statistically significant predictor of intention to leave as proposed in hypotheses.

H6 Work Experience is a significant predictor ofintention to leave

Work Experience was excluded from the equation. Work Experience is not a statistically significant predictor of intention to leave as proposed in hypotheses.

H7 Work Relationship is a significant predictor ofintention to leave

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Work Relationship was excluded from the equation. Work Relationship is not a statistically significant predictor of intention to leave as proposed in hypotheses.

H8 Workload Sharing is a significant predictor ofintention to leave

Workload Sharing was excluded from the equation. Workload Sharing is not a statistically significant predictor of intention to leave as proposed in hypotheses.

H9 Rural Life Style is a significant predictor of intention to leave

Rural Life Style was excluded from the equation. Rural Life Style is not a statistically significant predictor of intention to leave as proposed in hypotheses.

H10 Social Recognition is a significant predictor ofintention to leave

Social Recognition, the standardized (Beta) is equal to -0.196. Job Fit is a statistically significant predictor of intention to leave as proposed in hypotheses.

Hypothesis Summary

The result of hypothesis testing found that there are 10 hypotheses based on the hypotheses in chapter II. It can be summarized in Table 18.

Table 18 Summary of Hypothesis Testing

Independent factors	**Hypothesis Test**	
	Accept	**Reject**
Family Responsibility	✓	
Job Variety	✓	
Work Relationship		✓
Hospital Facility		✓
Workload Sharing		✓

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Table 18 (Continued)

Independent factors	Hypothesis Test	
	Accept	**Reject**
Job Fit	✓	
Work Experience		✓
Government Compulsory	✓	
Rural Life Style		✓
Social Recognition	✓	

Part 8: Discussion

According to the research results, the issues to be discussed are as follows;

1. Intention to leave

Respondents' intention to leave was at low level. This result is different from the statement of the problem in chapter one that indicated the high resignation of interns. The reason for this might be that most of the respondents (69.80%) were from the special quota project. After graduating, medical interns in this project will work for three years under a compulsory government contract in their hometown. Therefore, interns would be familiar with the people and environment of the community. In addition, these interns would be close to their families, which may lower their intention to leave.

2. Significant predicting factors

The results revealed that five out of ten factors are predicting factors in relation to Intention to Leave (Family Responsibility, Job Fit, Job Variety, Government Compulsory, and Social Recognition). The results were compared with the research of Virasombat in 2009, which studied the factors of physician retention. The results found that Job Fit, Workload Sharing, Work Relationship, and Rural Life

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Style were significantly related to the retention of physicians. However, Family Responsibility was not significantly related to the retention of physicians. Only Job Fit was related to both retention and intention to leave. This might indicate that the factors of retention and intention to leave might be different.

Under the condition that other independent factors are constant, each factor could be discussed as follows.

2.1 Factors with positive effect on intention to leave

2.1.1 Family Responsibility

Family Responsibility was reported at a high level. Most of the interns reported that the responsibility to take care of their families was important at a high level. The results showed that the medical interns who needed money to support their families would be more willing to leave. This result was consistent with the research hypothesis. This could be that the salary from government-owned hospitals was quite low compared to the salary at a private hospital. Interns would like to work in private hospitals to earn more money for the family. Cutchin (1997) proposed that this concept consisted of 1) security, 2) freedom, and 3) identity. The time for family was mentioned in 2) freedom. Virasombat (2009) found that staying close to home and family would make resignations decline.

2.1.2 Government Compulsory

The effect of the compulsory government program on intention to leave was positive. The results here conflicted with the content in the literature review. This behavior could be explained by the two-factor theory of Herzberg. Government Compulsory arrangements would be categorized in the hygiene factor, and it will lead to job dissatisfaction. The results conflicted with the intentions of the Ministry of Health, which was expecting to reduce the resignation of interns. The low

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degree of correlation could come from the low cost in breaching the contract (400,000 baht, or US$15,000), which could be earned back quickly by working in a private hospital.

2.2 Factors with negative effect to intention to leave

2.2.1 Job Variety

The research hypothesis was accepted, as the variety of job negatively affected intention to leave. The variety of job was shown to be an important factor for medical and administrative tasks; this affected their decision to leave. The results were consistent with the research of Virasombat, (2009), which showed that the involvement of physicians in administrative operations may influence physicians to work longer in community hospitals.

2.2.2 Job Fit

Job Fit was at a very high level. This factor was measured by the perception of interns that they were beneficial and a good fit for the community hospital. The relationship between Job Fit and intention to leave was negative. This result was consistent with the research of Virasombat (2009). Physicians, who felt that they were beneficial to a community hospital, have higher job satisfaction levels and retention in a community hospital.

2.2.3 Social Recognition

Social Recognition was at a very high level. Most of the interns were accepted by the people in the community. Social Recognition was cited in Maslow's motivation theory as well as the Two Factor Theory (Herzberg, 1959). It was an important factor to motivate employees. The result was also consistent with the idea of sacrifice in job embeddedness (Mitchell, Holtom, and Lee, 2001); if an

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employee leaves an organization, he or she will have to sacrifice their reputation in that organization.

3. Insignificant predicting factors

There were five factors that were found to be insignificant in predicting the intention to leave, and these were Hospital Facility, work experience, Work Relationship, Workload Sharing, and rural lifestyle**.**

3.1 Hospital Facility

The results indicated that interns were satisfied with the facilities and team of nurses in community hospitals. However, the Hospital Facility factor was excluded from the equation. Thus, the research hypothesis was rejected. The result was not consistent with Rourke (1993) and Shankar and Thapa (2012), whose researchshowed that adequate equipment and facilities are important factors to work in rural areas.

3.2 Work Experience

The results showed that work experience in community hospital was important for interns. However, the work experience factor was excluded from the equation. This result was not consistent with the literature review, as work experience was not shown to affect interns' intention to leave. This result also conflicted with the research of Crandall, Dwyer, and Duncan (1990), whose research showed thatdeveloping the work structure in rural areas with support knowledge from medical schools would reduce the resignation of physicians in rural areas.

3.3 Work Relationship

Work Relationship was excluded from the equation. This result conflicted with the literature review, since the Work Relationship factor did not affect interns'

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intention to leave. However, Mitchell, Holtom, and Lee (2001) found that the amount of work connections was an important factor to reduce resignation in the organization. Although there were different levels of significance in each connection, the connections with people (friends, co-workers, and community) on and off the job were interrelated like a web. The more connections one had, the less chance of resignation in organization existed.

3.4 Workload Sharing

Workload Sharing was excluded from the equation. This result might be explained by the age of the intern. Regarding age, interns would be pleased to work more to gain more work experience, even if the Workload Sharing is not fair. This result was not consistent with research in Canada (Rourke, 1993) and India (Biswakarma, 2012) which found that the management of hospitals to reduce workload could be one of the factors to reduce the intention to leave of interns in rural areas.

3.5 Rural Life Style

Rural lifestyle was excluded from the equation. This result was not surprising because most of the respondents were from rural areas (69.40% of respondents were from the special quota program). Most of the interns were quite familiar with the rural lifestyle. Therefore, rural lifestyle does not affect interns' intention to leave. The results were quite different from the findings in Vietnam, where the living condition was ranked number 6 to encourage physicians to work in rural areas (Witte, Ha, Shengalia, and, Vujicic, 2011). Most of the physicians who still worked in community hospitals were in a small or medium sized community and enjoyed working in that community (Virasombat, 2009).

In summary, the outcome of this survey showed that the intention to leave among respondents was low. The nine related factors were rated at a high or very high level. Only the Government Compulsory factor was rated at a neutral level. Only five

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out of ten factors significantly predicted the intention to leave, which were Family Responsibility, Government Compulsory, Job Variety, Job Fit, and Social Recognition).

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CHAPTER V

CONCLUSION AND RECOMMENDATIONS

This chapter is composed of two major sections, which are the conclusion and recommendations. The first section aims to summarize the results of the research according to the research objectives. The second section comprises the recommendations and suggestions for further research in related fields.

Conclusion

The information of this study was derived from the primary data. The questionnaires were distributed to interns in community hospitals who were obliged in a 3-year compulsory contract in 15 provinces in Thailand. These provinces had physician-to-population ratios higher than 1:6,572. All of the questionnaires were sent by mail. The secondary data came from various sources, including theses, journals, and related research studies. Descriptive statistics such as frequency distributions, mean, and standard deviation were used for the data analysis. Stepwise multiple regression analysis was used to find predicting factors of intention to leave of medical interns.

Most of the interns who were still in community hospitals were not from Bangkok. Interns in special projects such as CPIRD program were more than interns from ordinary admission (entrance exam). Moreover, most of the interns graduated from medical schools outside Bangkok.

The intention to leave of respondents was at low level. This result was different from the statement of problem describing the high resignation levels of interns. The reason might be that most of the respondents worked for Government Compulsory programs in their hometowns according to CPIRD program regulation. Therefore, interns would be familiar with the people and environment in the community.

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Family Responsibility and Government Compulsory factors positively affected the intention to leave of medical interns. Most of the interns had the responsibility to take care of their family, reported in a high level. The results showed that the medical interns who needed money to support their families would be willing to leave more. However, the effect of the Government Compulsory arrangement conflicted with the literature review. The result also conflicted against the intention of the Ministry of Health, which was expecting to reduce the resignation of interns with this policy.

There were three factors that negatively affected the intention to leave (Job Variety, Job Fit, and Social Recognition). The variety of job was an important factor for medical and administrative tasks, and this affected their decision to leave. It may influence physicians to work longer in community hospitals.The Job Fitfactor was measured by the perception of interns that they were beneficial and a good fit for the community hospital.The results were consistent with the literature - being beneficial to the community hospitalleads to longer work in the community hospitals. Social Recognition was at a very high level. Most of the interns were accepted by the people in the community. It was consistent with the literature review that Social Recognition would reduce interns' intention to leave.

Five factors are insignificant in predicting the intention to leave, which were Hospital Facility, work experience, Work Relationship, Workload Sharing, and rural lifestyle. The results were not consistent with the literature review.

Recommendations

Recommendations from the research results

1. Recommendation for the director of a community hospital

1.1 Based on research findings, most of the interns have a high responsibility to take care of their family in term of money. The variety of job and

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social recognition also help to decrease the interns' intention to leave. Therefore, the community director should manage extra workloads or extra tasks for interns on voluntary basis. Interns should be involved in community hospital administration or medical service activity for community. The community hospital director should arrange a basic medical service in order to provide free physical checkup and knowledge about general disease prevention, such as the danger of parasites in raw food should be maintained. Mobile medical service should also be presented. It would make interns feel like a part of the hospital and be recognized by people in community.

1.2 Although interns were taught in similar medical courses, the fit in the job of each intern is different. Receiving a comment from intern to help resolve a problem would increase an intern's Job Fit. The director should make the interns feel that they are more valuable to the community hospital than any other hospital. Rewarding interns based on their merit such as excellence awards should be initiated so that they are proud and feel valuable to the organization.

2. Recommendations for the Ministry of Public Health

2.1 The Family Responsibility is positively related to an intern's intention to leave. MoPH might set the committee to consider the compensation of interns. The welfare should be attractive to interns so that they can afford their family responsibility. This would help to decrease interns' intention to leave.

2.2 In order to increase Job Fit in a community hospital, developing a medical course that encourage good attitude towards a community hospital should be maintained. The story of physician who develops the community hospital successfully should be presented to motivate an intern. Interns would feel like a part of community hospital if they could be involved in creating the success to the community hospital.

2.3 Apparently, the Government Compulsory contract is related positively with an intern's intention to leave. The result was different from the literature review

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which revealed that Government Compulsory contract should reduce an intern's intention to leave. Accordingly, MoPH should reconsider the regulation of government compulsory contract. The fine to breach the contract should be increased in order to decrease the intern's intention to leave.

2.4 The relationship between an intern and people in community is also important. MoPH should promote projects or activities that strengthen relationship between community and hospital.

Recommendation for future research

Since the resignation problem among interns who still work in community hospitals is low, future research should emphasize other issues including the improvement of intern performance and quality of life. In addition, future research should expand to medical interns in other provinces to better explain the situation in Thailand as a whole.

Limitations of the Study

There were limitations in this research, detailed as follows:

1. There was no database of the number of interns who still work in community hospitals. There was only the number of interns who were distributed to the community hospitals. The interns who resigned were also included in the list. Therefore, the actual number of interns might be different from the recorded number.

2. The collection of data from interns in community hospitals was quite difficult. The response rate was low at 40%. Contacting interns directly proved to be almost impossible. The population of this research worked for state hospitals, where interns typically have a heavy workload. This makes it difficult to follow up and trace back to the interns.

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APPENDICES

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Appendix A

Reliability Test of Questionnaire

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1. Intention to leave

Reliability Statistics

Cronbach's Alpha	N of Items
1.000	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Intention to Leave1	4.60	2.800	1.000	1.000
Intention to Leave2	4.60	2.800	1.000	1.000
Intention to Leave3	4.60	2.800	1.000	1.000

2. Family Responsibility

Reliability Statistics

Cronbach's Alpha	N of Items
.779	3

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Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Family Responsibility 1	5.50	4.121	.743	.553
Family Responsibility 2	5.33	4.506	.753	.562
Family Responsibility 3	6.10	5.334	.401	.934

3. Job Variety

Reliability Statistics

Cronbach's Alpha	N of Items
.706	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Job Variety1	6.77	.737	.527	.612
Job Variety2	6.87	.533	.672	.405
Job Variety3	7.17	.902	.408	.744

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4. Work Relationship

Reliability Statistics

Cronbach's Alpha	N of Items
.864	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Work Relationship1	5.33	1.402	.855	.725
Work Relationship2	5.33	1.402	.855	.725
Work Relationship3	4.73	1.237	.597	1.000

5. Hospital Facility

Reliability Statistics

Cronbach's Alpha	N of Items
.805	3

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Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Hospital Facility1	7.13	.878	.537	.843
Hospital Facility2	6.87	.671	.774	.596
Hospital Facility3	6.87	.740	.657	.727

6. Workload Sharing

Reliability Statistics

Cronbach's Alpha	N of Items
.914	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Workload Sharing1	6.27	.547	.820	.882
Workload Sharing2	6.33	.506	.843	.864
Workload Sharing3	6.27	.547	.820	.882

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7. Job Fit

Reliability Statistics

Cronbach's Alpha	N of Items
.882	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Job Fit1	5.77	2.185	.659	.926
Job Fit2	6.03	1.620	.827	.784
Job Fit3	5.93	1.720	.848	.762

8. Work experience

Reliability Statistics

Cronbach's Alpha	N of Items
.826	3

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Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Work Exprience1	7.87	.878	.803	.628
Work Exprience2	7.93	1.030	.786	.670
Work Exprience3	7.80	1.131	.497	.943

9. Government Compulsory

Reliability Statistics

Cronbach's Alpha	N of Items
.874	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Government Compulsory1	8.33	1.540	.824	.758
Government Compulsory2	8.40	1.559	.887	.702
Government Compulsory2	8.20	1.959	.584	.967

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10. Rural Life Style

Reliability Statistics

Cronbach's Alpha	N of Items
.945	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Rural Life Style1	6.67	1.264	.854	.945
Rural Life Style2	6.53	1.223	.908	.902
Rural Life Style3	6.53	1.361	.901	.912

11. Social Recognition

Reliability Statistics

Cronbach's Alpha	N of Items
.786	3

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Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Social Recognition1	5.83	1.040	.648	.690
Social Recognition2	6.03	1.275	.714	.649
Social Recognition3	6.47	1.154	.552	.797

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Appendix B

Stepwise Multiple Regression Analysis

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Stepwise Multiple Regression analysis

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Job Fit	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Family Responsibility	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	Government Compulsory	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
4	Social Recognition	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
5	Job Variety	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Intention to Leave

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.322[a]	.104	.100	.85830
2	.408[b]	.166	.159	.82964
3	.447[c]	.199	.189	.81488
4	.495[d]	.245	.232	.79297
5	.518[e]	.268	.252	.78265

a. Predictors: (Constant), Job Fit

b. Predictors: (Constant), Job Fit, Family Responsibility

c. Predictors: (Constant), Job Fit, Family Responsibility, Government Compulsory

d. Predictors: (Constant), Job Fit, Family Responsibility, Government Compulsory, Social Recognition

e. Predictors: (Constant), Job Fit, Family Responsibility, Government Compulsory, Social Recognition, Job Variety

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ANOVA[f]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.401	1	19.401	26.335	.000[a]
	Residual	167.227	227	.737		
	Total	186.628	228			
2	Regression	31.221	2	15.535	22.570	.000[b]
	Residual	149.407	226	.688		
	Total	186.628	228			
3	Regression	37.221	3	12.407	18.684	.000[c]
	Residual	149.407	225	.664		
	Total	186.628	228			
4	Regression	45.776	4	11.444	18.200	.000[d]
	Residual	140.852	224	.629		
	Total	186.628	228			
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
5	Regression	50.032	5	10.006	16.336	.000[e]
	Residual	136.596	223	.613		
	Total	186.628	228			

a. Predictors: (Constant), Job Fit

b. Predictors: (Constant), Job Fit, Government Compulsory

c. Predictors: (Constant), Job Fit, Government Compulsory , Family Responsibility

d. Predictors: (Constant), Job Fit, Government Compulsory , Family Responsibility, Social Recognition

e. Predictors: (Constant), Job Fit, Government Compulsory , Family Responsibility, Social Recognition, Job Variety

f. Dependent Variable: Intention to Leave

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Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.099	.423		9.695	.000
	Job Fit	-.499	.097	-.322	-5.132	.000
2	(Constant)	3.503	.434		8.078	.000
	Job Fit	-.501	.094	-.324	-5.330	.000
	Government Compulsory	.211	.051	.250	4.117	.000
3	(Constant)	2.992	.458		6.537	.000
	Job Fit	-.555	.094	-.358	-5.901	.000
	Government Compulsory	.223	.051	.264	4.408	.000
	Family Responsibility	.196	.064	.185	3.043	.003
4	(Constant)	3.413	.460		7.782	.000
	Job Fit	-.402	.100	-.260	-4.587	.000
	Government Compulsory	.273	.051	.323	5.164	.000
	Family Responsibility	.269	.066	.254	4.879	.000
	Social Recognition	-.340	.092	-.257	-3.668	.000
5	(Constant)	3.741	.471		7.950	.000
	Job Fit	-.355	.101	-.229	-3.528	.001
	Government Compulsory	.293	.051	.347	5.759	.000
	Family Responsibility	.317	.067	.300	4.709	.000
	Social Recognition	-.260	.096	-.196	-2.710	.007
	Job Variety	-.258	.098	-.185	-2.636	.009

a. Dependent Variable: Intention to Leave

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Appendix C

Questionnaire in English

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Please mark (✓ □) on the blank box that suits with you the most.

Part 1: Personal Background

1. Gender ☐ Male ☐ Female

2. Age ..... Year ..... Month

3. Marital status ☐ Single ☐ Married ☐ Other……

4. Domicile ☐ Bangkok or Perimeter. ☐ Other……

5. You studied medical school through
   ☐ Entrance exams in the same system ☐ CPIRD or others ……

6. You graduated from (Please specify)……

7. How long you have been working in community hospital? .....year.....month

8. Salary (approximately).....Baht

9. Workloads (Average patient per day) ..... persons

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Part: 2 Please mark (✓) in the space corresponding to the sentiment of most people is divided into five levels.

1 = Strongly disagree 2 = Disagree3 = Neutral 4= Agree 5 = Strongly agree

Questions	Level				
	1	2	3	4	5
1) Family Responsibility					
10) You are responsible for the financial factors in your family.					
11) You are responsible for your own family.					
12) You need extra income for your family					
2) Job Variety					
13) Hospital in the community you are working with, provides a variety of treatments, such as formatting Thailand Traditional Medicine / Alternative Medicine or clinic					
14) Physician in your community have additional tasks apart from treating patients such as medical examination (audit) of the patients or the hospitals' quality.					
15) Physicians are involved in management issue.					
3) Work Relationship					
16) You have a conversation and exchange ideas with the director regularly.					
17) You have a conversations with physicians and exchange ideas with others regularly.					
18) In case of conflict, you have received great corporation from management team, medical staff and nurses to resolve such conflicts					
4) Hospital Facility					
19) Medical equipment is standardized					
20) Team of nurses and supported services are suitable for operation .					
21) Physician's examination room is appropriate for the operation.					
5) Workload Sharing					
22) There is a good rotation system of physician (GP and specialized physician)					
23) Physicians are assigned to teach student and do appropriate administrative tasks.					

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Questions	Level				
	1	2	3	4	5
24) There are external medical staff to the hospital community when there is a shortage of physicians working in the hospital.					
6) Job Fit					
25) You are more valuable to this community hospital than any other private hospitals.					
26) Working in a community hospital is ideal for you					
27) You enjoy working in a community hospital.					
7) Work experience					
28) Experience in working at community hospital is important to you and your profession.					
29) Experience in working at community hospital is important to the study of specialist physician.					
30) Experience in working at community hospital is important to future career path.					
8) Government Compulsory					
31) You decided not to resign before the end of the contract because of high fines.					
32) Regulations in some areas that need further study medicine through the use of government funds to complete affected you to work until the end of contract.					
33) If the fine is less than 400,000baht, you might decide to resign.					
9) Rural Life Style					
34) You like to live in countryside.					
35) You see yourself important to the community.					
36) You are nature lover.					
10) Social Recognition					
37) You received very warm welcome from local people in the area.					
38) You received help from local people in various ways.					
39) You are appreciated by the local people.					
11) Intention to leave					
40) Do you intend to resign before the end of the Contract?					
41) You want to resign before the end of the Contract.					
42) You are more likely to resign before the end of the Contract					

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Appendix D

Questionnaire in Thai

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ตอนที่ 1 ลักษณะส่วนบุคคล โปรดทำเครื่องหมาย (✓ □) ลงในช่องว่างที่ตรงกับข้อมูลที่เป็นจริงของท่านมากที่สุด เพียงข้อเดียว

1. **เพศ**□ ( ) ชาย □ ( ) หญิง
2. **อายุ** .....ปี.....เดือน
3. **สถานภาพสมรสของท่าน** ( )โสด ( ) สมรส ( ) อื่นๆ.....
4. **ภูมิลำเนาเกิดของท่าน** ( )กรุงเทพมหานคร ( ) อื่นๆ(ระบุ).....
5. **ท่านเข้ารับการศึกษาแพทยศาสตร์บัณฑิต โดยการสอบผ่านระบบ**
   ( ) การสอบ Entrance ในระบบเดิม
   ( ) โครงการผลิตแพทย์เพื่อชาวชนบท (CPIRD) ( ) อื่นๆ(ระบุ).....
6. **ท่านสำเร็จการศึกษาแพทยศาสตร์บัณฑิต (พ.บ.) จากมหาวิทยาลัยใน**
   ( ) กรุงเทพฯ ( ) อื่นๆ.....
7. **ระยะเวลาในการปฏิบัติงานจริงในโรงพยาบาลชุมชนของท่านจนถึงปัจจุบันเป็นเวลา**
   .....ปี.....เดือน
8. **ปัจจุบันท่านมีรายได้ทั้งหมด โดยประมาณเดือนละ.....บาท**
9. **ท่านตรวจผู้ป่วยวันละประมาณ.....คน**

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ตอนที่ 2 โปรดทำเครื่องหมาย (✓) ลงในช่องว่างที่ตรงกับความรู้สึกนึกคิดของท่านมากที่สุด แบ่งออกเป็น 5 ระดับ ดังนี้

1 = ไม่เห็นด้วยอย่างยิ่ง 2 = ไม่เห็นด้วย 3 = เฉยๆ 4 = เห็นด้วย

5 = เห็นด้วยอย่างยิ่ง

ข้อความ	ระดับ				
	1	2	3	4	5
1) ความจำเป็นทางครอบครัว					
10) ท่านต้องรับผิดชอบภาระทางการเงินภายในครอบครัวของท่าน					
11) ท่านต้องดูแลรับผิดชอบครอบครัวด้วยตัวเอง					
12) ท่านต้องหารายได้เสริม เพื่อนำมาเป็นค่าใช้จ่ายในการดูแลครอบครัว ครอบครัว					
2) ความหลากหลายในภาระงาน					
13) ใน รพ. ชุมชนที่ท่านทำงานอยู่มีความหลากหลายในการจัดรูปแบบการรักษาอื่นๆ เช่น แพทย์แผนไทย/แพทย์ทางเลือก หรือคลินิกพิเศษ					
14) แพทย์ใน รพ. ชุมชนของท่านมีภาระดูแลงานอื่นๆ นอกเหนือจากการรักษาผู้ป่วยเพียงอย่างเดียว เช่น ตรวจสอบเวชทะเบียน (audit) ของผู้ป่วย หรือกิจกรรมงานส่งเสริมคุณภาพโรงพยาบาล					
15) แพทย์ใน รพ. ชุมชนที่ของท่านมีส่วนร่วมในงานฝ่ายบริหาร					
3) ความสัมพันธ์ระหว่างผู้บริหารและทีมงาน					
16) ท่านมีการสนทนาแลกเปลี่ยนความคิดเห็นกับ**ผู้อำนวยการ**อย่างสม่ำเสมอ					
17) ท่านมีการสนทนาแลกเปลี่ยนความคิดเห็นกับกับ**แพทย์ท่านอื่นๆ** อย่างสม่ำเสมอ					
18) กรณีที่เกิด**ความขัดแย้งขึ้น** ท่านได้รับความร่วมมือเป็นอย่างดีจากผู้บังคับบัญชา ทีมงานบริหารและทีมงานแพทย์พยาบาล เพื่อแก้ไขข้อขัดแย้งนั้นๆ					
4) สภาพแวดล้อมเชิงกายภาพ					
19) อุปกรณ์ เครื่องมือแพทย์ นั้น มีมาตรฐานเป็นที่ยอมรับจากแพทย์ทั่วไปในด้านความทันสมัยครบถ้วน					

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ข้อความ	ระดับ				
	1	2	3	4	5
20) ทีมงานพยาบาล และผู้ช่วยเหลือในการให้บริการ มีความเหมาะสมในการปฏิบัติงานร่วมกับแพทย์					
21) ห้องตรวจของแพทย์ มีความเหมาะสมต่อการปฏิบัติงาน					
5) การแบ่งงานปฏิบัติงาน					
22) แพทย์ประจำ (GP และแพทย์เฉพาะทาง) มีระบบผลัดเวรกันตรวจผู้ป่วย GP ทุกวัน					
23) แพทย์ทุกท่านได้รับมอบหมายงานที่มีคุณภาพ เช่น สอนนักศึกษา และ ช่วยงานบริหารที่เหมาะสม					
24) มีการจัดกำลังเสริมภายนอก รพ. ชุมชน เมื่อมีการขาดแคลนแพทย์ปฏิบัติงาน ใน รพ. ของท่าน					
6) ความเหมาะสมกับงาน					
25) ท่านรู้สึกว่าตนสามารถทำประโยชน์ต่อ รพ. ชุมชนแห่งนี้มากกว่าที่อื่น					
26) ท่านรู้สึกว่าการทำงานใน รพ. ชุมชนนั้นเหมาะกับตัวเอง					
27) ท่านชื่นชอบการทำงานใน รพ. ชุมชน					
7) ประสบการณ์ในการทำงานใน รพ. ชุมชน					
28) ประสบการณ์ในการทำงานใน รพ. ชุมชน นั้นมีความสำคัญต่อวิชาชีพของท่าน					
29) ประสบการณ์ในการทำงานใน รพ. ชุมชน นั้นมีความสำคัญในการศึกษาต่อเป็นแพทย์เฉพาะทาง					
30) ประสบการในการทำงานใน รพ ชุมชน นั้นสำคัญต่อการปฏิบัติงานในประเทศไทย					
8) การใช้ทุนรัฐบาล					
31) ค่าปรับการใช้ทุนจำนวน 400,000 บาท เป็นเหตุให้ท่านตัดสินใจไม่ลาออกก่อนใช้ทุนจนครบ					
32) ข้อบังคับในการศึกษาต่อแพทย์เฉพาะทางบางสาขาที่ต้องผ่านการใช้ทุนรัฐบาลให้ครบ ทำให้ท่านไม่ลาออกก่อนการใช้ทุนครบ					

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ข้อความ	ระดับ				
	1	2	3	4	5
33) หากค่าปรับในการใช้ทุนน้อยกว่า 400,000 บาทท่านจะตัดสินใจลาออก					
9) วิถีการดำเนินชีวิตในชนบท					
34) ท่านชื่นชอบวิถีการชีวิตดำเนินชีวิตในชนบท					
35) ท่านเห็นคุณค่าของตัวเองที่มีต่อชุมชมแห่งนี้					
36) ท่านชื่นชมธรรมชาติหรือแหล่งท่องเที่ยวตามธรรมชาติ					
10) การได้รับความเคารพยกย่องจากสังคม					
37) ท่านได้รับการทักทายด้วยไมตรีจิตอันดีจากชาวบ้านในอำเภอ					
38) ท่านได้รับการช่วยเหลือจากคนในอำเภอในด้านต่างๆ					
39) ท่านได้รับการยกย่องชมเชย และของขวัญจากชาวบ้าน					
12) ความตั้งใจในการลาออก					
40) ท่านตั้งใจจะลาออกก่อนการใช้ทุนครบ					
41) ท่านรู้สึกอยากลาออกก่อนการใช้ทุนครบ					
42) ท่านมีแนวโน้มจะลาออกก่อนการใช้ทุนครบ					

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