

FACTORS INFLUENCING INTENTION TO LEAVE NURSING PROFESSION
AMONG REGISTERED NURSES, GOVERNMENTAL HOSPITALS

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บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
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ภัทรา เผือกพันธ์ : ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ (FACTORS INFLUENCING INTENTION TO LEAVE NURSING PROFESSION AMONG REGISTERED NURSES, GOVERNMENTAL HOSPITALS) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. รตอ.หญิง ดร. ยูพิน อังสุโรจน์, อ.ที่ปรึกษาวิทยานิพนธ์ร่วม: รศ. ดร. จินตนา ยูนิพันธุ์, 318 หน้า.

การศึกษาเชิงสำรวจนี้มีวัตถุประสงค์เพื่อทดสอบโมเดลที่อธิบายอิทธิพลทางตรงและทางอ้อมของปัจจัยทำนายความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ โดยใช้การทบทวนวรรณกรรมและแนวคิดที่เกี่ยวข้องกับปัจจัยผลักดันและปัจจัยดึงดูดเป็นกรอบแนวคิดในการคัดสรรตัวแปร กลุ่มตัวอย่างคือพยาบาลวิชาชีพที่ทำงานให้บริการพยาบาลแก่ผู้ป่วยโดยตรงในหอผู้ป่วยหลักและมีประสบการณ์ทำงานไม่น้อยกว่า 3 เดือนในโรงพยาบาลศูนย์ 9 แห่ง ทั่วทุกภาคในประเทศไทย จำนวน 405 คน คัดเลือกโดยการสุ่มแบบแบ่งชั้นภูมิ 2 ชั้น เก็บรวบรวมข้อมูลโดยใช้แบบสอบถามจำนวน 8 ชุด ซึ่งได้ผ่านการตรวจสอบความตรงตามเนื้อหา ความตรงเชิงโครงสร้าง และความเที่ยง ได้ค่าที่อยู่ในเกณฑ์ยอมรับได้ วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนาและทดสอบเส้นทางอิทธิพลความสัมพันธ์ระหว่างตัวแปรโดยใช้โปรแกรมลิสมัล 8.53

ผลการศึกษาพบว่า โมเดลที่สร้างขึ้นมีความสอดคล้องกับข้อมูลเชิงประจักษ์ และสามารถอธิบายความผันแปรของความตั้งใจในการลาออกจากวิชาชีพได้ 45 เปอร์เซ็นต์ ($\chi^2 = 152.67$, $df = 127$, $p = 0.06$, $\chi^2/df = 1.20$, $GFI = 0.96$, $CFI = 1.00$, $RMSEA = 0.022$, $SRMR = 0.038$, $AGFI = 0.94$) โดยความเหนื่อยล้ามีอิทธิพลทางตรงด้านบวกต่อความตั้งใจในการลาออกจากวิชาชีพมากที่สุด (.37, $p < .001$) และมีอิทธิพลทางอ้อมด้านบวกผ่านความพึงพอใจในงานและความผูกพันในวิชาชีพ (.07, $p < .01$) ความผูกพันในวิชาชีพมีอิทธิพลทางตรงด้านลบต่อความตั้งใจในการลาออกจากวิชาชีพรองลงมา (-.25, $p < .001$) ความขัดแย้งระหว่างงานกับครอบครัวมีอิทธิพลทางตรงด้านบวกต่อความตั้งใจในการลาออกจากวิชาชีพ (.17, $p < .001$) และอิทธิพลทางตรงด้านบวกต่อความเหนื่อยล้า (.47, $p < .001$) และมีอิทธิพลทางอ้อมด้านบวกผ่านความพึงพอใจในงาน และความผูกพันในวิชาชีพ (.22, $p < .001$) โอกาสการจ้างงานมีอิทธิพลทางตรงด้านบวกต่อความตั้งใจในการลาออกจากวิชาชีพ (.08, $p < .05$) เป็นที่น่าสนใจว่าความพึงพอใจในงานมีอิทธิพลทางตรงต่อความตั้งใจในการลาออกจากวิชาชีพ อย่างไม่มีนัยสำคัญ และมีอิทธิพลทางอ้อมด้านลบผ่านความผูกพันในวิชาชีพ (-.07, $p < .01$) และสภาพแวดล้อมการปฏิบัติงานพยาบาลมีอิทธิพลทางตรงด้านลบต่อความตั้งใจในการลาออกจากวิชาชีพ อย่างไม่มีนัยสำคัญ และมีอิทธิพลทางอ้อมด้านลบผ่านความพึงพอใจในงานและความผูกพันในวิชาชีพ (-.20, $p < .001$)

ผลการศึกษาพบว่า ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพมากที่สุดคือความเหนื่อยล้า รองลงมาคือความผูกพันในวิชาชีพและ ความขัดแย้งระหว่างงานกับครอบครัวตามลำดับ ดังนั้นแผนการพัฒนาบุคลากรทางการพยาบาล ควรคำนึงถึงปัจจัยดังกล่าวเพื่อสร้างเสริมให้พยาบาลคงอยู่ในงานและป้องกันไม่ให้เกิดการออกจากวิชาชีพก่อนเวลาอันควร

สาขาวิชา พยาบาลศาสตร์

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PATRA PHUEKPHAN: FACTORS INFLUENCING INTENTION TO LEAVE NURSING PROFESSION AMONG REGISTERED NURSES, GOVERNMENTAL HOSPITALS.
 ADVISOR: ASSOC. PROF. POL.CAPT. YUPIN AUNGSUROCH, Ph.D., RN, CO-ADVISOR: ASSOC. PROF. JINTANA YUNIBHAND, Ph.D., APN, 318 pp.

This study was a survey study aiming to test a model explaining the direct and indirect relationships of the influencing factors of intention to leave nursing profession. The conceptual framework was developed based on research literature review and push-and pull-factors. Stratified two stages sampling was used to recruit the sample. They were 405 registered nurses providing direct nursing care in main unit and work experience greater than three months, from nine regional hospitals in all regions of Thailand. Subjects completed eight self-administered questionnaires. All questionnaires demonstrated an acceptable content and construct validity, and reliability. Data were analyzed using descriptive statistic and a linear structural relationship (LISREL) 8.53.

The findings revealed that the hypothesized model fit the empirical data and explained 45% of the variance of intention to leave nursing profession ($\chi^2 = 152.67$, $df = 127$, $p = 0.06$, $\chi^2/df = 1.20$, $GFI = 0.96$, $CFI = 1.00$, $RMSEA = 0.022$, $SRMR = 0.038$, $AGFI = 0.94$). Burnout was the most influential factor on intention to leave nursing profession which it had positive direct effect (.37, $p < .05$) and had positive indirect effect on intention to leave nursing profession through job satisfaction and professional commitment (.07, $p < .05$). Professional commitment had negative direct effect on intention to leave nursing profession (-.25, $p < .05$). Work-family conflict had positive direct effect on intention to leave nursing profession (.47, $p < .05$) and had positive direct effect on burnout (.17, $p < .05$), additionally, it had positive indirect effect through job satisfaction and professional commitment (.22, $p < .05$). Employment opportunity had positive direct effect on intention to leave nursing profession (.08, $p < .05$). Job satisfaction had no significant direct effect on intention to leave nursing profession, on the other hand had negative indirect effect through professional commitment (-.07, $p < .05$). Nurse practice environment had no significant negative direct effect on intention to leave nursing profession, on the other hand had negative indirect effect through professional commitment (-.22, $p < .05$).

These findings demonstrated that the highest impact factors influencing intention to leave nursing profession was burnout followed by professional commitment and work-family conflict, respectively. Therefore, identifying these factors is crucial in order to develop workforce planning and creating fit strategies to retain and prevent early leaving nursing workforce.

Field of Study: Nursing Science

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Student's Signature

Advisor's Signature

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CHAPTER I

INTRODUCTION

Background and significance of the study

Globally, the nursing profession is encountering a critical and growing nursing shortage due to altering population structure, increasing advanced healthcare technologies, and increasing of complexity of the illness. Nurses are the largest group of health care professions providing patient care in the health care system. Loss professional nurses have been recognized as an important issue because it provides a detrimental effect on care quality (Sochalski, 2001). To date, the light of current concerns over nursing shortages is nurses' intent to leave the profession. This concern great importance because nurses' intention to leave their profession are the most significant predictor of whether they actually leave the profession (Alexander, Lichtenstein, Oh, & Ullman, 1998; Griffeth, Hom, & Gaertner, 2000; Price & Mueller, 1981; Shields & Ward, 2001; Somers, 1995).

Nurses' intention to leave could will as a withdraw process that starts with an intention to leave their ward/clinical units, then their hospitals/workplaces, and finally quitting the profession altogether (Krausz, Koslowsky, Shalom, & Elyakim, 1995). Takase (2010) describes intention to leave as a progressive determination to conduct certain acts, ranging from mere desire, to serious thoughts, decision making, and actual planning. Intention to leave nursing profession refers to individual nurses' perception toward the consideration of leaving rather than their actual behavior of leaving (Price & Mueller, 1981). The Nurses' Early Exit study (NEXTS) has demonstrated that 80% of nurses who had left nursing profession began seriously considering leaving (intention to leave) 12 months before they actually quit

(Hasselhorn, Müller, Tackenberg, University of Wuppertal, & NEXT-Study Coordination, 2005). Studies have also found that the initial strength of the intention to leave can predict actual leaving at six months (Huffman, Adler, Dolan, & Castro, 2005), 12 months (Allen, Weeks, & Moffitt, 2005), and 18 months after the baseline measurements (Alexander et al., 1998). Thus, intention to leave nursing profession is referred to nurses' perception toward the intensity of thought about intent to terminate nursing career to work in other occupation outside nursing or not working nursing completely.

Nurses leave the profession will make a big impact, it's resulting in the escalating cost of healthcare and impact on nurses and patients (Hayes et al., 2006; Ma, Lee, Yang, & Chang, 2009; Strachota, Normandin, O'Brien, Clary, & Krukow, 2003). Where the shortfalls present, it contribute to burdensome workloads for nurses who still work in the hospital (Wagner, 2010), and resulting in workload which can be a major cause of intention to leave, absenteeism, and turnover (Hayes et al., 2006). Nurses leave the career could impact on cost of nursing organization in recruiting nurse to replace a vacancy position, organizing orientation and training program for new nurse, and reducing of organizational productivity (Contino, 2002). More seriously, it's contributing adverse outcomes in hospital care (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002) by effecting to patient outcomes such as mortality, failure to rescue falls, medication error, and other adverse events (Aiken, Clarke, Sloane, Lake, & Cheney, 2008; Aiken, Sloane, & Sochalski, 1998; Estabrooks, Midodzi, Cummings, Ricker, & Giovannetti, 2005; Tourangeau et al., 2007).

In Thailand also share the same crisis, nurses is a crucial component of health care system, a nursing shortage could contribute inefficient care and destructive effect

on health care outcomes. The nursing workforce had currently estimated 138,710 registered nurses in all parts of Thailand (Boonjeam, Intaraprasong, Pataraachachai, & Summawart, 2010). The evidence showed that nursing workforce faces the problematic nursing shortage by estimated 43,250 of nurses. The most severe problem on nursing shortage occurs in Ministry of Public Health by estimated 31,250, whereas in other governmental hospitals and private sectors are 12,000 (Srisuphan & Sawaengdee, 2012). In addition, the result of the study among nurses at regional hospital and general hospital during 2005-2010 showed 40.84% of temporary employment nurses are resign from their job, rate of resign are 48.68% in the first year of working and 25.57 % in second year of working if they do not occupy in government officer position (Srisuphan & Sawaengdee, 2012). Furthermore, annual loss rate was found increasing to 4.44% (Sawaengdee, 2009). Increasingly premature leaving from nursing career is resulting in declining of working life expectancy of Thai nurses that declined to 22.55 years (Sawaengdee, 2009). Interestingly, nursing shortage does not exist only in public sector but in private sector also. The empirical study demonstrated that 21.7 % of registered nurses working in private sectors had intention to leave nursing profession within the next 2 years, while nurses working as civil servant showed 15.4% had intended to leave nursing profession (Sawaengdee, Tangcharoensathien, Teerawit, & Thinkhamrop, 2012). The significance of the report indicated that approximately 30.4% of nurses resigned from nursing careers for working in other occupations (National Statistical Office, 2005), 17.3% transfer to work in supportive unit, and 12.1% early retirement (Sawaengdee, 2009). In addition, registered nurses aged between 35-39 years old were found to participate in nursing profession merely 46.52% (Sawaengdee, 2009).

Interestingly, nowadays nursing profession is an attracting career for new generation looking to transition into the nursing workforce. Reported of admission reveals that nursing program is strongly interest among high school graduates with presenting in top five ranking in choice of admission. This can cause by career opportunities expanding and the demand for nursing services on the rise now is a brilliant time to pursuit future generation to occupy the nursing profession (Raines & Taglaireni, 2008). Although the increasing number of new entry in the profession, the strategies to retain and reduce leaving from nursing profession of experienced nurses are still essential.

Intention to leave nursing profession is recognized as a warning sign for nursing administrators. When many employees have intended to leave, it is very significant for nurse administrative and policy maker to be aware. The factor influencing intention to leave nursing profession can be an indicator of nursing workforce because it can present the sense of mismatch of the demands of health care systems and the demands of the individual (Hasselhorn et al., 2005). Therefore, they can be predicted and remedied through an understanding of the factors behind nurses' intention to leave nursing profession. The causes of nurses' intention to leave profession are multifaceted, there are numerous causes underlying "push" and "pull" factors that recognized as internal and external organizational factors making employer away from the career (Ali Shah, Fakhr, Ahmad, & Zaman, 2010; Beehr, Glazer, Nielson, & Farmer, 2000; Sangpow, 1999). Literatures reveal there are many factors associated with intention to leave profession, for instance, being younger (Salminen, 2012); being male (Heinen et al., 2013); higher level of education (Nogueras, 2006); low income and short tenure (Tai, Bame, & Robinson, 1998);

professional commitment (Flinkman, Laine, Leino-Kilpi, Hasselhorn, & Salantera, 2008; Jourdain & Chenevert, 2010); job satisfaction (Dotson, Dave, Cazier, & Spaulding, 2014; Flinkman et al., 2008; Gurkova et al., 2013); burnout (Flinkman et al., 2008; Heinen et al., 2013; Simon, Muller, & Hasselhorn, 2010); job stress (Spence Laschinger & Leiter, 2006); and work-family conflict (Simon, Küemmerling, Hasselhorn, & the NEXT-Study Group, 2004). Furthermore, one interesting factor highlighted the impact of plentiful alternative employment opportunities in labor market on the intention to leave the profession (Li et al., 2013).

In Thailand, the study in intention to leave has been subjected to widespread attention for long time, but the areas of studies were focus on intention to leave their current position and the organizations. For instance, at Chulalongkorn hospital, empirical study showed the factor affecting anticipated turnover among professional nurses were job satisfaction, number of children, internal labor market, and autonomy. Additionally, factors affecting high intent to leave were extra income, travelling to work, job satisfaction, autonomy, workload, and job stress (Prasomsuk, 1991). Another were studied in Governmental Hospitals, Bangkok Metropolis, results revealed job security, organizational commitment, tenure, job satisfaction, factor in personal life, salary, and company policy and administration were predictors intention to leave in this organization (Poomison, 1996). Recently, one study attempts to investigate factor affecting turnover intention among professional nurses in Bangkok Metropolitan hospitals by testing model. The finding demonstrated that four factors, including professional commitment, job satisfaction, job burnout, and hardiness personality had statistically significant direct effects on turnover intention among professional nurse. Whereas, three factors, including job satisfaction, job

characteristics, and hardiness personality had statistically significant indirect effects on turnover intention (Sangpow, 1999).

Regarding previous literature, the factor influencing intentions to leave nursing profession among registered nurse are remaining exclusive. It is important to make deeply understanding on factors contributing to their intention to leave profession particularly in the current context while the time changed. Thai health care system launch the policy that aim to increase the equality of patients access to health care, promote Thailand to be a medical hub in Asia, and the ASEAN Economic Community. Particularly in 2015, AEC is launching; Thai nursing workforce is stepping forward to the objective of the movement of natural persons (MNP) in the ASEAN region. The fascinating issue is regarding the management of professional movement including health care profession such as nurse. This agreement could make highly alternative employment opportunity ensue in this region. It could accelerate to the rising trends in the movement of health care profession with leaving the profession to work in oversea countries or work in other career outside nursing. This situation could be an imperative situation that contribute high impact on Thai nurse workforce. This could lead to more severe nursing turnover, intention to leave nursing career, and migration than the past experienced.

Therefore, the factors affecting intention to leave nursing have changed over the time. The in-depth understanding on the reason of intention to leave nursing profession is significant for nurse administrators and policy makers on lessened nursing shortage. This wealth of research has led to the development of nurses' intention model because the knowledge of factor influencing nurses' intention to leave nursing profession could provide helpful information for nurse administrator

and policy maker in tailoring a fit strategy in creating an effective macro policy in responding nurse workforce planning. They could be faced with new challenges as they try to find innovative strategies to recruit, retain, and prevent qualified nurses leave from nursing profession. Hence, this is a big challenge for administrators in capable of creating fit strategies to prevent intention of leaving and retain experienced nurses in nursing workforce.

Research question

What are the relationships between job satisfaction, professional commitment, burnout, work-family conflict, nurse practice environment, job market and intention to leave nursing profession among registered nurses in government hospital?

Objective of the study

1. To examine factors influencing intention to leave nursing profession among registered nurses in governmental hospitals.
2. To identify the direct and indirect relationships of job satisfaction, professional commitment, burnout, nurse practice environment, work-family conflict, employment opportunity on intention to leave nursing profession among registered nurses in governmental hospitals.

Research hypotheses and rationale

The study is intended to advance the understanding of the reason of leaving from nursing profession among staff nurses in Thailand through behavioral intention (intention to leave nursing profession). Regarding literature review, nurses' intent to leave nursing profession is arise from the multistage process with attitudinal, decisional, and behavioral components (Lum, Kervin, Clark, Reid, & Sirola, 1998).

Huge studies suggested behavioral intention (intention to leave) is strong predictor of actual behavior (actual leaving) (Hom, Griffeth, & Sellaro, 1984; Hom & Hulin, 1981; Mobley, 1982; Newman, 1974; Shields & Ward, 2001). As indicated above, the immediate precursor of behavior is thought to be intentions, and therefore intention to leave is an important precursor of employees' consequent turnover behaviors (Fishbein & Ajzen, 1975; Price & Mueller, 1981) since it immediately precedes the actual act of leaving.

The causes of leaving nursing are multifaceted. Nurses' intention to leave nursing profession are likely to be the result of the process with numerous underlying causes, that is to say, both "push" and "pull" factors (Beehr et al., 2000). The push factors are involved adversely perceived aspects of jobs which drive employees want to end their employment and away from the career (Beehr et al., 2000; Estryn-Behar, van der Heijden, Fry, & Hasselhorn, 2010). The other, the pull factors are those reasons that attract the employee to a new location (Ali Shah et al., 2010; Beehr et al., 2000; Estryn-Behar et al., 2010; Sangpow, 1999).

Regarding to literatures reviewing, push factors which are antecedent of intention to leave nursing profession can be classified into work-related factors and organizational factors. The various work-related or job-related characteristics can be conceptualized as "push" variables (Beehr et al., 2000; Taylor & Shore, 1995), that is, work-related variables may push an individual away from work and affect toward a decision to leave the profession. Burnout, which is a physical, emotional, and intellectual exhaustion syndrome manifested by adverse attitude to professional life, was associated with greater intention to leave the profession (Flinkman et al., 2008). The other factor that found to be a significant cause of leaving intention from nursing

career is work-family conflict which occurred when work-related demands interfere with family responsibilities (Frone, Russell, & Cooper, 1992) was found to be a source of stressor which could affect to nurses' intention to leave the profession (Simon et al., 2010). In addition, organizationally relevant effects related with intrinsic motivation had been claimed to be a notation of push factors (Clegg, 1983) such as job satisfaction and commitment. Job satisfaction was pointed out to be the traditional determinant of intention to leave nursing profession (Gauci Borda & Norman, 1997; Lu, Lin, Wu, Hsieh, & Chang, 2002). The literature has been shown that job satisfaction is significant predictors of nurses' intention to leave nursing profession (Zurmehly, Martin, & Fitzpatrick, 2009). The other traditional antecedent of intention to leave the profession is professional commitment; it was viewed as indicator of nurse committed to their occupation. Professional commitment has consistent relationship to turnover. Many studies indicated professional commitment is the relative strength of an individual's linkage to the professional (Mowday, Steers, & Porter, 1979) and is a strong predictor to intention to leave profession (Ingersoll, Olsan, Drew-Cates, DeVinney, & Davies, 2002; McNeese-Smith & Crook, 2003; Mowday et al., 1979). The strong evidence indicated that lower professional commitment was associated with greater intention to leave the profession (Jirawuttinunt, Akkrawimut, Chotchakornpant, & Thongnoilertchai, 2010; Liou & Cheng, 2010).

The pull factors which is attractive external organizational factors are present by economic factors (Irvine & Evans, 1995), it was found plentiful alternative employment opportunity have relationship with intention to leave nursing profession (Irvine & Evans, 1995; Simon et al., 2010). Particularly in current policy of Thai

health care system that increased in demand of nursing personnel due to medical hub policy and participated in the ASEAN Economic Community (Stordeur et al., 2007), these policies could facilitate free movement across this region and also increasing in employment opportunity or chances on labor market. This can contribute big effect on intention to leave career and has more severe migration to work abroad than the past. Moreover, literatures frequently mentioned on “pull” factors of countries abroad are included professional work environments that are more conducive to training and skills development; therefore, theoretical emphasize on nurse work environment which referred to a success in attracting and retaining nurse has been recognized as an important issue. This is supported by the NEXT study has been shown that unsupportive work environment can predict nurse intention to leave the profession (van der Heijden, Dam, Hasselhorn, & the NEXT study group, 2007).

This evidence supports the investigator’s hypothesized model in this study. However, in this study does not intend to explore the behavioral component; instead, it examined push factors which characterize by work-related factors (burnout and work-family conflict), organizational factors (job satisfaction and professional commitment), and pull factor which characterizes by environmental factors (nurse practice environment) and economic factors (employment opportunity) and nurses’ intention to leave nursing profession, a decisional component. The proposed relationships among the tested variables and concepts are depicted as following (Figure 1).

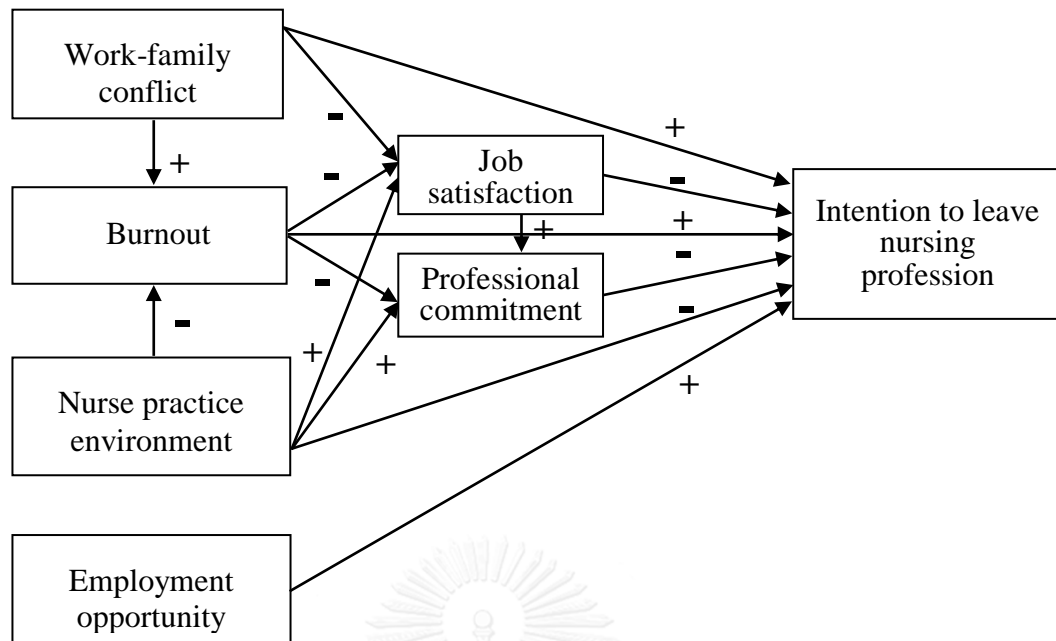


Figure 1 Hypothesized model of factors influencing intention to leave nursing profession

The research hypotheses are listed in the following six statements:

1. Job satisfaction has negative direct effect on intention to leave nursing profession, and has negative indirect effect on intention to leave nursing profession through professional commitment.

Job satisfaction has been described as how one feels about one's job (Cowin, Johnson, Craven, & Marsh, 2008). It often found to be a strong and consistent predictor of intent to leave nursing career (Larrabee et al., 2003). Job satisfaction was viewed as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience (Coomber & Barriball, 2007). Therefore, an individual's appraisal of their job, it can cause a positive emotion state of satisfaction or contrasting negative feeling of dissatisfaction (Coomber & Barriball, 2007). Most theories of turnover view it as the result of employee dissatisfaction. Nurses who were less satisfied with their jobs were more likely to consider leaving their profession

(Dotson et al., 2014). People who dislike their job will try to find alternative employment. In other words, if job satisfaction were sufficiently low, the employee would develop a behavioral intention to leave the job (Cohen & Golan, 2007). Therefore, it could be assumed that when nurse feel dissatisfied in their job, it could affect to a committed of nurses toward their profession that make nurse are consider to leave from nursing career (Irving, Coleman, & Cooper, 1997). This was supported by empirical study, Parry (2008) found that job satisfaction has direct relationship with affective professional commitment and has indirect relationship with intention to change profession through affective professional commitment.

2. Professional commitment has negative direct effect on intention to leave nursing profession.

Commitment is a force that binds an individual to a course of action of relevance to the target (Meyer & Herscovitch, 2001). It has implications for the decision either to continue or discontinue membership in the organization (Meyer & Allen, 1991). In addition, professional commitment can be described as a strong belief in and acceptance of professional values, a willingness to exert considerable effort on behalf of the profession, and a definite desire to be a membership in the profession (Mowday et al., 1979). Therefore, if nurse has commitment toward the profession, they will desire to remain in the professional role and act in the way to consistent with member of the career (Lee, Carswell, & Allen, 2000; Snape & Redman, 2003). It is plausible to assume that nurses who feel that their work values are satisfied in the career have strong emotional attachment to the career. This was support by the empirical evidence, Laine (2005), and Liou and Cheng (2010) had been found that lower professional commitment was associated with greater intention to leave. Thus,

nurses who had greater occupational commitment had lower intentions to leave the profession (Flinkman et al., 2008).

3. Burnout has positive direct effect on intention to leave nursing profession, and has positive indirect effect on intention to leave nursing profession through job satisfaction and professional commitment.

Burnout can be a physical, emotional and intellectual exhaustion syndromes which manifested by adverse attitude to professional life. Burnout is seen as a persistent dysfunctional state that results from prolonged exposure to chronic stress, which is a situation where a person feels confronted incessantly with a high level of demands and insufficient resources linked to the work itself and to the context in which the work take place (Jourdain & Chenevert, 2010). Furthermore, if nurses have emotional exhaustion, it will be effect on professional commitment and eventually leads to nurses make decision to end their career (Jourdain & Chenevert, 2010). There are the evidences to show that burnout has strong relationship with job satisfaction and could lead to intention to leave and turnover (Aiken & Patrician, 2000; Shields & Ward, 2001). Therefore, it has been indicated that burnout was associated with greater intention to leave nursing career; nurses who experienced burnout were those who most often considered leaving the profession (Flinkman et al., 2008), and also burnout has indirect relationship on intention to leave profession through job satisfaction and the commitment.

4. Work-family conflict has positive direct effect on intention to leave nursing profession and burnout, and positive indirect effect on intention to leave nursing profession through job satisfaction.

The interference of the work and family domain could be the factor affecting nurses intended to leave the profession. For many nurses, their present the need to combine work and demands, with balancing work and family responsibilities, but when they become harder to handle, work-family conflict will be occurred (Luk & Shaffer, 2005). Nurses who reported demands of work are incompatible with a fulfilling home life are likely leaving nursing (Morrell, 2005). In addition, the situation of tension between work and family roles can become a source of stress (Thomas & Ganster, 1995). It was pointed out that the employee, who exposed to this stressor agents could effect on psychological and physical well-being (Allen, Herst, Bruck, & Sutton, 2000; Frone, Russell, & Cooper, 1997), reduced job satisfaction and felt burnout, finally might make decision to leave career (Ganster & Schaubroeck, 1991). Furthermore, Duffield, Aitken, O'Brien-Pallas, and Wise (2004) suggest that nurse who place high value on work life/home life issue often practice nursing for a short time period. This was confirmed by empirical evidences that work-family conflict has the direct relationship with job satisfaction (Cortese, Colombo, & Ghislieri, 2010), and burnout (Wang, Chang, Fu, & Wang, 2012), and could lead to leaving the profession (Flinkman et al., 2008).

5. Nurse practice environment has negative direct effect on intention to leave and burnout, and has positive indirect effect on intention to leave through job satisfaction and professional commitment.

As depicted in many theoretical, nurse work environment has been recognized as a vital feature in attracting and retaining nurse in hospital care. Nurse practice environment has been described as the organizational characteristics of work setting that facilitate or constrain professional nurses in their practice (Lake, 2002).

When nurses work in an organization that provides a good support on their work, nurses will perceive the supportive environment and influence on their perception. Nurses will more likely to remain attached to them. Magnet hospital is well known in the key factors of the work environment influenced hospital success; therefore, recognition on an important issue in work environment can attract and retain nurse in their work. It was support that nurse who are working in the magnet hospital perceived higher job satisfaction (Kramer & Schmalenberg, 1991a, 1991b), and influence on the nurses' decision to leave (Irvine & Evans, 1995).

Intention to leave has directly correlated with perceptions of a deteriorated work environment which including lack of resources (Sellgren, Kajermo, Ekvall, & Tomson, 2009); staff shortage (Reeves, West, & Barron, 2005); poor management (Newman, Maylor, & Chansarkar, 2002); lack of development opportunities for professional growth, and restricted professional autonomy (Fochsen, Sjogren, Josephson, & Lagerstrom, 2005); lack of support from supervisors and coworkers (AbuAlRub, Omari, & Al-Zaru, 2009).

These can assume that nurse working in a supportive environment has less likely to leave their profession and can make nurses more satisfy in their career and has high commitment in the career. This was supported by empirical study; the supportive environment will increase the level of job satisfaction (Mansfield et al., 1989), and were significantly less intent to leave (Gurney, Mueller, & Price, 1997). Additionally, unsupportive work environment is resulting in lower occupational commitment and job satisfaction, and leading to intention to leave the profession (van der Heijden et al., 2007). Moreover, nurse work environment had been found to associate with burnout, when nurse perceived the work environment is positive, level

of burnout will lower (Aiken et al., 2002), and could lead to lower intent to leave the profession (Flinkman et al., 2008).

6. Employment opportunity has positive direct effect on intention to leave nursing profession.

Employment opportunity could represent that an employee has a high chance to seek employment outside nursing career. City size (urbanization) has been used as a representative of labor market because it can be assumed that those who living in big city could be found a job easily due to big city can offer more opportunities to work outside nursing (Seo, Ko, & Price, 2004; Simon et al., 2010). Furthermore, in situation that several new initiatives are being introduced to facilitate the free movement of nurses within Asia and beyond such as Mutual Recognition Agreement (MRA) in AEC, it will be accelerated the rising trends in the movement of nurses in this region including Thailand because this situation could produce a plentiful alternative job opportunity occur in the region. Plentiful alternative employment opportunities in the job market were found positively predicted nurses' intention to leave the profession (Li et al., 2013). It could be summarized that increase in employment opportunity or chances on labor market has direct relationship on intention to leave nursing profession.

Scope of the study

The purpose of study has aim to investigate factors influencing intention to leave nursing profession among registered nurses in governmental hospital. Therefore, the population in this study consists of licensed registered nurses who have been worked as a general duty performing direct patient care that working in government hospitals in all parts of Thailand (Northern, Southern, Central,

Northeastern, Western, and Eastern regions). In this study, registered nurses that participated in the study were recruited by multi-stage random sampling technique from governmental hospitals providing tertiary care service and have a capacity with over 500 beds that are mainly in curative care (e.g., medical care, emergency care, intensive care medicine, orthopedics, obstetrics and gynaecology, pediatrics, etc.), particularly in medical specialty services. Tertiary care services are available at general, regional under Ministry of Public Health, Ministry of Interior, Ministry of Defense, and Bangkok Metropolitan Administration (Hebzbberg, Mausnek, & Snyderbman, 1959), and university hospitals under the Ministry of University Affairs and, public large hospitals under Thai Red Cross Society.

Operational definitions

Intention to leave nursing profession is referring to nurses' perception toward the intensity of thought about intention to terminate nursing career to work in further qualification outside nursing, or other occupations, or not working. This can be measured by occupational turnover intention scale (van der Heijden et al., 2007).

Job satisfaction is defined as nurses' appraisal of the degree to which the job fulfills their own job values on specific dimensions of the career which comprised of autonomy, pay, task requirements, organizational policies, interaction, and professional status. This can be measured by the Index of Work Satisfaction (IWS) which developed by Stamps (1997).

Professional commitment is defined as nurses' attitude toward their profession which characterized by a strong belief in and acceptance of professional values, a willingness to exert considerable effort on behalf of the profession, and a definite desire to be a membership in the profession. It will be measured by the

Nurses' Professional Commitment Scale (NPCS) which had been developed by Lin, Wang, Li, and Huang (2007).

Burnout is defined as a state of physical and psychological exhaustion with experienced by nurse that comprised of three specific domains in person's life that is general exhaustion, exhaustion attributed to work in general, and exhaustion attributed to work with client. It can be measured by the Copenhagen Burnout Inventory (CBI) (Borritz, 2006).

Work-family conflict is defined as nurse's perception toward the degree of nursing career interferes with nurses' family life or family responsibility. It can be measured with work-family conflict scale which developed by Netemeyer, Boles, and McMurrian (1996).

Nurse practice environment is defined as the organizational characteristics of a work setting that support nurses in delivering nursing care and facilitate or constrain in professional nursing practice. These traits or indicators of a work setting include nurse participation in hospital affairs; nursing foundations for the quality of care; nurse manager ability, leadership, and support of nurses; adequacy of staffing and resources; and collegial nurse-physician relations. It can be measure by the Practice Environment Scale of the Nursing Work Index PES-NWI scale which developed by Lake (2002).

Employment opportunity is defined as nurses' perception of the availability of alternative jobs in the labor market both national and international. It can be measure with the employment opportunities scale (EOS) scale which developed by researcher.

Registered nurses is defined as nurses graduating on nurse-midwives or nurses from accredited nursing schools who pass the national licensing examination, and were given a license to practice from the Nursing Council that working as a full time in providing directly care for patients that working in public hospitals, which providing tertiary care, in all parts of Thailand.

Expected usefulness of the study

1. The result of this study can expand knowledge, factors influencing intention to leave nursing profession among registered nurses that generate the impact on nursing workforce particularly in government hospital in which shortage are presenting.

2. The finding in the model of factors influencing intention to leave nursing profession among registered nurses could provide in-depth understanding which useful for nurse administrator, and policy maker in finding an effective strategies and intervention for attracting, retaining, and preventing qualified nurses leaving from nursing profession that could be alleviated nursing shortage in workforce.

3. The information from the study will be useful for policy makers in workforce macro planning. It can impact on nurse and patient outcomes which could be assured a high-quality of nursing care in healthcare service.

4. The modified measurement of the current study could benefit for utilizing in assessing the determinant of intention to leave nursing profession among registered nurses in current health care context.

CHAPTER II

LITERATURE REVIEW

The study has aimed to examining the factors influencing intention to leave nursing profession among registered nurses in governmental hospitals. A critical review of the existing literature includes theories and empirical studies. The review was divided into six parts:

1. Thai health care system context
2. Current nursing workforce issue in Thailand
3. Intention to leave nursing profession among registered nurses
4. Determinants of nurses' intention to leave nursing profession
5. The relationship among variables
6. Structural equation modeling for analysis

Thai health care system context

Thailand is a lower middle-income country with a population of about 67.2 million (The world bank, 2014). Healthcare services in Thailand are provided by both public and private sectors; with the public sector is the main service provider in a diverse health service system (Ministry of Public Health, 2012). In the government hospitals, there are three types of hospitals that are: (1) community hospitals (1-150 beds), (2) general hospitals (200-500 beds), and (3) regional hospitals and medical centers (500-1500 beds providing both service and education). At primary level, community primary healthcare centers are located in villages and sub-district. The community hospitals and other public agencies with less than 100 beds provide health services at the basic medical care and refer the more advanced cases to the general

hospitals or the regional hospitals. In addition, the community hospitals also provide secondary care level that focus on health promotion, disease prevention, and simple curative care. The tertiary care level focuses more on treatment of the disease, rehabilitation, and the complications of curative care. Tertiary care facilities include general hospitals, regional and medical centers, and university hospitals.

In public sector, there are many agencies providing health care service. The major portion of health service is controlled by the Ministry of Public Health. Other public sector agencies are distributed in the Ministry of Interior, the Ministry of Defense and the Ministry of University Affairs (Bureau of Policy and Strategy, Office of the Permanent Secretary, & Ministry of Public Health, 2009). Currently, there are 725 district hospitals covering all districts and 95 general/regional hospitals covering all the provinces in Thailand. There are 9,765 sub-district health centers that cover all sub-districts (Wibulpolprasert, 2005). Aside from public health facilities, there are 323 private hospitals throughout the country (Tangcharoensathien et al., 2013).

Thai populations have been covered by one of the three public health insurance schemes: 1) The Civil Servant Medical Benefit Schemes which is financed by general government revenue, approximately 8 % of the population including government employees, pensioners and their dependents are under this scheme; 2) The Social Security Scheme, a compulsory insurance financed by a tripartite coalition composed of the employee, employer, and government, covers private employees in the formal sector which accounts for 10 % of the population; 3) The Universal Coverage Scheme which is financed by general government revenue, covers almost 75 % of Thai population (Tangcharoensathien et al., 2013).

The changes in the country's environmental context directly affected on the health service system and health workforce include changing population structure to be an aging society; increasing intensity and complexity pattern of population illness that link to increase an advanced and complex medical technologies utilizing in health care system that make such services become the duties of specialized. Furthermore, Thai health policies are aimed to increase patients' access to care and to promote Thailand to be a medical hub in Asia. The consequences of these policies make supplementary expansion of the private and commercialize medical service that aim to gain revenues from foreign medical tourism with good economic status. Moreover, Thailand's cosmetic industry also is rapidly becoming well recognition in the development of spa and beauty products which is a natural outgrowth of Thailand's tradition of good health and total well-being and complements the kingdom's rise as a preferred healthcare destination for overseas patients. In fact, personal wellness is one of the fastest growing aspects of Thailand's healthcare industry, with strong support from the Royal Thai government. The country quickly is becoming Asia's center for health treatments and attracting patients from around the globe seeking a wide range of top-quality cosmetic and medical services in one of the world's most beautiful locations (Department of International Trade Promotion, 2015). This resulted in a huge brain drain from the public to the private sector with high remuneration. This was supported by evidence that showed the number of nurse full time working in private facilities have increased 36.36% which increasing from 11,000 nurses to 15,000 nurses during 2006-2010 (Srisuphan & Sawaengdee, 2012).

Furthermore, the idea of establishing the ASEAN Economic Community (Stordeur et al., 2007) was proposed in 2003 and will begin to function in 2015. The

adoption of the ASEAN Free Trade Area (AFTA) with the elimination of non-tariff trade barriers in all member states have resulted in more intensive linkages among the countries in the region. Particularly, this issue calls attention for completion of Mutual Recognition Arrangements (MRA) for qualifications in major professional services by 2008 to facilitate free movement of professionals/skilled labor/talents in ASEAN. Regarding this an opportunity for employment could be expanded, it produces a big challenge for healthcare system in planning workforce policy.

Current nursing workforce issue in Thailand

Thailand healthcare system has increased in healthcare demands and an inadequate workforce supplies that these two themes leading to the problematic nurse shortage. Government policy which related to promoting Thailand as the medical hub of the region and the universal coverage scheme have resulted in increasing demand for care by foreign and Thai patients. Additionally, the ageing of the population accompanied with the increase of chronic illnesses has led to increasing demand for nursing services (HRU, 2005).

Thailand nursing and midwifery council studies on supply and requirement projection of professional nurses over the next 10 years by using health demand method; finding revealed that during 2010-2019, the ratio of nurses' requirement is 1:400 nurse per population or estimated is 163,500-170,000. In 2010, the document showed that the number of Thai population living in Thailand are 65.4 million persons, therefore, the number of nurses are required approximately 168,500 (Srisuphan & Sawaengdee, 2012). Meanwhile, the number of existing nurses in health care services was presented only 125,250 (data from TNC in 2010). This indicates that in Thailand faces the problematic nursing shortage by estimated 43,250 of nurses.

The most severe problem on nursing shortage occurs in Ministry of Public Health by estimated 31,250, whereas in other governmental hospitals and private sectors are 12,000 (Srisuphan & Sawaengdee, 2012).

Nursing shortage could occur from many reasons. Evidences have been shown that since 1999, approximately 2,000 nurses are decreased in supply annually because of a national policy that aims to minimize a number of government officers by freezing the government posts for newly graduate nurses. Therefore, this posts an immediate reduction of nurse in a labor market (Noree, 2008). Furthermore, the document demonstrated that aging nurses that are large portion in current nurse population; they gradually run to retirement in nearly future. Next 10 years, health care system will lose nurses from retirement 2,000 per year (Srisuphan & Sawaengdee, 2012). In addition, the study has been indicated that working life expectancy of Thai nurses declined to 22.55 years because of increasing in premature leaving from nursing career (Sawaengdee, 2009). And the report of the health and welfare survey indicated that 30.4% of nurses resigned from nursing career for working in other careers (National Statistical Office, 2005).

In the attempt to overcome nurse shortage, TNC plan to increase the production of nursing and midwifery from 6,000 to 8,000 yearly. But the number of new entry RN was only 6,400 during 2009-2010 (Sawaengdee et al., 2012). Nowadays, the attitude toward nursing profession has changed over the time. Nursing profession has become more attractive among new generation. The national spotlight on the registered nurse shortage could help generating a strong interest in nursing careers among those new to the workforce. The report of admission reveals that nursing program is strongly interest among high school graduates with presenting in

top five ranking in choice of admission. This can cause by career opportunities expanding and the demand for nursing services on the rise now is a brilliant time to pursuit future generation to occupy the nursing profession (Raines & Taglaireni, 2008). Even though efforts have been made to increase the supply of the health workforce, there has been difficulty in keeping them in public areas.

The document demonstrated that turnover rate had been increased from 19% in 1993 to 25% in 2005 (Boonjeam et al., 2010), loss rate increased from 2.2 % in 2000 to 3.3% in 2004. In 2009, annual loss rate are increasing to 4.435 % (Sawaengdee, 2009), and vacancy rate of nursing position in public hospitals was 15-26% (Boonjeam et al., 2010). Moreover, the result of the study in nurse turnover at regional hospital and general hospital during 2005-2010 shows that 40.84% of temporary employment nurses are resign from their job, rate of resign are 48.68% in the first year of working and 25.57 % in second year of working if they do not employ in government officer position (Srisuphan & Sawaengdee, 2012). This severe loss of new nurses could be estimated to turnover cost which demonstrates as 90,000,000 baths per year (Srisuphan & Sawaengdee, 2012). Furthermore, high turnover impact on cost of losing the financial investment in production process (Flinkman, Leino-Kilpi, & Salanterä, 2010), and cost of organization in recruiting nurse to replace a vacancy position, organizing orientation and training program for new nurse, and reducing of organizational productivity (Contino, 2002).

All documents obviously indicate that Thailand nursing workforce shares the same nursing crisis as many other countries, with a high rate of turnover and intention to leave nursing career. Shortage of nurses is presented at all sectors, but the most serious one is demonstrated in governmental hospitals which present in high turnover

rate. In addition, the government policy of participating in the Association of South East Asian Nations (ASEAN Secretariat) Economic Community – AEC that will be started in 2015; this agreement could be another factor that contribute high impact on Thai nurse workforce. This could lead to more severe nursing turnover, intention to leave organization or nursing career, and migration than the past experienced. In order to prevent nurses leaving from nursing career, nurse executive and policy maker need to understand factor affecting on their intention to leave nursing profession.

Intention to leave nursing profession among registered nurses

Nurse leaving from profession is an important contributing factor to the worldwide nursing shortage. The huge documents indicated that many nurses had high intention to leave from the profession. Differences between countries intention to leave the profession were noticeable. The percentage of those who intended to leave the nursing profession ranged from 8.24% in European countries (Li, 2012) to 49.2% in Taiwan (Lin, Chiang, & Chen, 2011). In addition, 26% of newly graduated nurses had often thought of giving up nursing (Flinkman et al., 2008). One longitudinal observational study monitored the development of the intention to leave during the first five years of employment. The results showed that the percentage of nurses with a strong intent to leave the profession increased from 9.1% to 18.1% during the first five years of employment (Rudman, Gustavsson, & Hultell, 2014). Moreover, the empirical study showed that 16.3% of nurses who firstly entry the profession had intention to leave the profession. After that on the one-year follow up, 14.5% of nurses who had no intention to leave the profession at the baseline had developed an intention to leave (Li et al., 2013). At the side of Thailand, the report from Thai nurse cohort study demonstrated that about 15.5% of registered nurses, or

an estimated of 20,000 out of the nurse population (142,699), had intent to leave nursing profession within the next 2 years and nurses working in private sectors, civil servant, and government officers had high proportion of intention to leave that are 21.7%, 15.4%, and 12.7% respectively (Sawaengdee et al., 2012).

Several studies have examined the antecedents of nurses' intention to leave nursing profession to gain insight of problem and this knowledge could be used to tailor fit strategies for preventing nurses leaving from nursing profession. The literature suggests that nurses' intentions to leave their profession are the most significant predictor of whether they actually leave the profession (Alexander et al., 1998; Griffeth et al., 2000; Takase, 2010). The intention to leave could be viewed as a withdrawal process that starts with an intention to leave their wards/clinical units, then their hospitals/workplaces, and finally quitting the profession altogether (Krausz et al., 1995). Several strong evidences supported that 80% of nurses who had left the profession began considering leaving (intending to leave) 12 months before they actually quit (Hasselhorn et al., 2005). Studies have also found that the initial strength of the intention to leave can predict turnover at six months (Huffman et al., 2005), 12 months (Allen et al., 2005), and 18 months after the baseline measurements (Alexander et al., 1998). Furthermore, in light of the difficulty of collecting data from those that have left the profession, the intent to leave the profession is the most commonly used measure of turnover (Blau, 2007).

Huge document reveal that if many nurses leave their profession, it will have a great impact on the health care services provided, threaten the quality of care provided (Hayes et al., 2006), and reduce organizational productivity (Contino, 2002). It is also expensive for health care organizations to recruit new nurses to fill vacancies and to

arrange orientation and training programs for new nurses (Contino, 2002). Evidence shows that the high turnover rate in the nursing profession is correlated with high negative outcomes in health care (Aiken et al., 2002), such as increased mortality rates, failure to rescue, increased patient falls and medication errors (Aiken et al., 2008; Aiken et al., 1998; Estabrooks et al., 2005; Tourangeau et al., 2007).

The number of nurses leaving their profession to pursue a different career path is a major contributor to the nursing shortage (National Statistical Office, 2005). Thus, an in-depth understanding of the factors associated with nurses' intentions to leave the nursing profession is important. Such an understanding could provide insightful information to help nurse administrators and policy makers develop effective policies and strategies for nursing workforce planning.

Definition of intention to leave nursing profession

The concept of intention to leave nursing profession could be differentiated from actual leaving. Actual leaving refers to voluntary leaving behavior of nurses, whereas intention to leave refers to individuals' perceptions toward leaving rather than their actual behavior of leaving (Price & Mueller, 1981). On the contrary, intention to leave has been viewed as a withdrawal process; nurses may first decide to leave the ward, then hospital and, finally, leave the profession (Krausz et al., 1995). The term of intention to leave is related to and is an important predictor of turnover behavior (Price & Mueller, 1981; Somers, 1995). One study of hospital employees showed that the measures for thinking of quitting, intention to leave, and turnover (actual leaving) were moderately to strongly correlated (Mobley, Horner, & Hollingsworth, 1978).

Intention to leave nursing profession was defined as the intent to change occupation which is a process and intermediate steps leading up to this intention, such as thoughts of changing occupations and search intentions (Rhodes & Doering, 1993). Similarly, Stordeur et al.(2007) had been defined intention to leave the profession as the respect to the intensity of thinking about leaving the profession. Previous literature suggested, term of intention to leave has been involved with individual perception or opinions of the possibility of voluntary departure their employment (Hinshaw & Atwood, 1985; Suzuki et al., 2006). Additionally, intention to leave was described as a multi-process involving a progressive determination to conduct certain acts, ranging from mere desire, to serious thoughts, decision making, and actual planning (Takase, 2010). Furthermore, intention to leave was describe as withdrawal cognitions that related to behavior, intention to leave was characterized by thinking of quitting a job, searching for a new job, and the intention to quit a current job (Mowday, Koberg, & McArthur, 1984).

From previous literature found that there are many term related to intention to leave, for instance, intent to quit (Shields & Ward, 2001), turnover intention (Lu et al., 2002; Lum et al., 1998), considering leaving (Hasselhorn et al., 2005), decision to leave (Cheung, 2004), turnover propensity (Fang, 2001), and intent to stay (Ellenbecker, 2004). All of these terms seemed to be most often used as predicting employees' turnover behaviors.

This study has a concern on high turnover that make a big impact to nursing shortage. Regarding literature above, the study has intended to understand turnover behavior through intention to leave because it's a best predictor of turnover behavior (Price & Mueller, 1981). Therefore, in this study tends to use the term

intention to leave nursing profession to understand workforce shortage. The concept of intention, however, provides a better translation because it implies a person's perception toward leaving (Mobley, Griffeth, Hand, & Meglino, 1979). Such perceptions, when known early enough, can alert administrators to take measures to discourage persons from leaving nursing profession which contributing to nursing shortage. The operational definition of intention to leave nursing profession in the present study is referring to the intensity of thought about intention to terminate nursing career and have plan search new job to work in further qualification outside nursing, or other occupations; or not working.

Research related intention to leave nursing profession

Nurse intention to leave nursing profession seems to be driven by several numbers of variables. The integrative review shows that the common demographic characteristics such as being younger, being male were associated with greater intention to leave the profession. In addition, work-related variables included professional commitment, job satisfaction, burnout, feeling of work-family conflict were a significant variables associated with intention to leave nursing profession (Flinkman et al., 2010).

Moreover, a systematic literature review of Chan, Tam, Lung, Wong, and Chau (2013) reveal that the factors emerged to relate intention to leave were categorized into organizational and individual factors. Within the organizational factors were included nurses' work environment, organizational culture, commitment, work demands, and social support. On the other hand the individual factors were interrelated with job satisfaction, burnout, and demographic factors such as being

male, being young, level of education, low work experience were found to affect the intention to leave.

Heinen et al. (2013) conducted the survey on intention to leave nursing profession among 23,159 nurses from medical and surgical hospital wards across 10 European countries. The result shows that 9% of the nurses intended to leave their profession. This varied from 5 to 17% between countries. Seven factors found to associate with intention to leave the profession at European level were nurse-physician relationship (OR 0.86; 95% CI 0.79-0.93), leadership (OR 0.78; 95% CI 0.70-0.86), participation in hospital affairs (0.68; 95%CI 0.61-0.76), older age (OR 1.13; 95%CI 1.07-1.20), female gender (OR 0.67; 95%CI 0.55-0.80), working fulltime (OR 0.76; 95%CI 0.66-0.86) and burnout (OR 2.02; 95%CI 1.91-2.14).

Salminen (2012) investigated registered nurses' withdrawal intentions. Results show that 25% of the nurses had frequently thought about leaving the profession. Concerning personal variables, age correlated negatively with the intention to leave the profession ($r = -.239, p < 0.01$). With work-related variables, the strongest negative correlation was found between job satisfaction and the intention to leave the profession ($r = -.459, p < 0.01$). There was also a strong negative correlation between organizational commitment and the intention to leave the profession ($r = .424, p < 0.01$). Work ability, job control and perceived development opportunities had negative correlations with withdrawal intention. Furthermore, logistic regression analyses were conducted to examine the factors associated with the intention to leave the profession. Results show that only age was significantly associated with intentions to leave the profession (OR = 0.926). From the work-related variables, work ability, job satisfaction and organizational commitment significantly associated with the

intentions for occupational turnover. Good work ability (OR = 0.657), high job satisfaction (OR = 0.459) and high organizational commitment (OR = 0.376) decreased the likelihood of intentions for occupational turnover. In addition, those who had skills that were balanced with their present work demands (OR = 7.277), or who judged that they had the potential to carry out more challenging tasks (OR = 13.176), had an increased likelihood of intending to leave the profession.

Flinkman et al. (2008) conducted survey study to discover the proportion of young nurses intends to leave the profession in Finland and the factors affecting this intention among 147 registered nurses, under the age of 30, working mainly in hospitals. Method: Data was collected as part of the NEXT (Nurses Early Exit) - Study. A structured postal questionnaire was used to collect the data. The data were analyzed by χ^2 , the Fisher exact-test and Mann-Whitney U-test. Results show that 26% of young nurses have often thought of giving up nursing. This was associated with personal burnout, poor opportunities for development, lack of affective professional commitment, low job satisfaction, work-family conflicts and higher quantitative work demands. In open-ended question, nurses stated that the main reasons for them considering leaving the profession included dissatisfaction with salary, the demands of nursing work, the inconvenience of shift work/working hours and uncertain work status.

In Thailand, the study on intention to leave is inclusive. However, the previous study had emphasized on intention to leave current job and organization. The literatures demonstrated many attempts to investigate factor affecting on turnover and intention to leave their current job and leave organization. Ponmafuang (2005) examines intention to leave among 275 nurses working in the hospital under the Thai

Red Cross. Findings showed 31.1% of nurses were likely to turnover and 17.2% had strong intention to leave. In addition, in the study indicated that occupational health hazards had a statistically significant positive relationship with intention to leave. In 1991, Prasomsuk conducted research to study factor affecting anticipated turnover among professional nurses at Chulalongkorn hospital. Results revealed that job satisfaction, number of children, internal labor market, and autonomy were factor related to intention to leave among nurses in this organization. Additionally, factors affecting high intent to leave were extra income, travelling to work, job satisfaction, autonomy, workload, and job stress.

Furthermore, one study had tried to explore factor affecting nurse turnover behavior at Chulalongkorn Hospital, the results revealed that marital status, job satisfaction, reward, and intention to work in organization (Sutthiwanich, 1995). Another were studied in Governmental Hospitals, Bangkok Metropolis, results revealed job security, organizational commitment, tenure, job satisfaction, factor in personal life, salary, and company policy and administration were predictors intention to leave in this organization (Poomison, 1996).

Sangpow (1999) has attempted to develop and test model of factor affecting turnover intention among nurses in Bangkok Metropolitan hospitals. This study has intended to examine turnover intention from their job and change career. The finding demonstrated that four factors, including professional commitment, job satisfaction, job burnout, and hardiness personality had statistically significant direct effects on turnover intention among professional nurse. Whereas, three factors, including job satisfaction, job characteristics, and hardiness personality had statistically significant indirect effects on turnover intention.

Recently, Sujjantararat et al. (2012) conduct a study to identify predicting factors of intention to leave among nurse educators. Findings showed that 55.64% of nurse educators had intention to leave the present job within 1 year and 66.60% had intention to leave within 3 years, and intention to leave were at middle level. Resulted from stepwise analysis revealed that organizational culture, organizational commitment, and doctorate were predicting factors of intention to leave among nurse educators.

However, the concerning in lessen nursing shortage need the knowledge emerging from examining intention to leave nursing profession. In Thailand, the study on factor influencing intention to leave nursing profession is exclusive. There is one study investigating the relationship among professional commitment, perceived risk of emerging infectious disease, and intention to leave nursing career. Finding showed that professional commitment has negatively associated with intention to leave profession; perceived risk of emerging infectious disease has positive relationship with intention to leave profession. Additionally, perceived risk of emerging infectious disease moderated between professional commitment and intention to leave profession.

Regarding literatures, although several studies attempted to investigate factor affecting on intention to leave, the findings of these studies are limited in particular area. Most of studies tend to understand intention to leave their job or organization; therefore, the results might not reflect to solve shortage issue. Regarding the concerned on macro planning, there are limited information from previous studies; it cannot be generated to population. However, the understandings on factor influencing intention to leave nursing profession particularly in registered nurses in

governmental hospitals are remaining shortcoming. Moreover, the factors affecting nurses' intention to leave the profession have changed over time. Therefore, it's the need to examine factor influencing intention to leave nursing profession. This knowledge could be useful for nurse administrators and policy maker to tailor strategies in promoting registered nurses retention and lessen the nursing workforce shortage.

Measurement of intention to leave nursing profession

Intention to leave (ITL) the nursing profession was developed by Hasselhorn et al. (2008). The scale had been used to test the predictive power of job strain with the respect to nurses' consideration of leaving the profession. The study was conducted among 11,606 registered nurses working in hospital in eight European countries. The instrument was measured by single item that asked about "How often during the course of the past year have you thought about leaving nursing?" The response categories were "never", "sometimes a year", "sometimes a month", "sometimes a week", and "everyday". Nurses who rated on "sometimes a month" or "sometimes a week" or "everyday" were indicated to have intention to leave nursing profession. The scale did not show the reliability and validity.

The occupational turnover intention scale was developed by van der Heijden et al. (2007) to examine the importance of nurses' social work environment and work-home inference for nurses' intent to leave nursing. This longitudinal study was conducted among 1,187 nurses. The scale comprised of 3-items, and items included, "How often the course of the past year have you thought of giving up nursing completely?", "How often during the course of the past year have you thought of taking a further qualification outside nursing?", "How often during the course of the

past year have you thought of giving up nursing completely to start a different kind of job?" Each item is rated along a 5-point scale (1= never, 5= every day). Then, the intention to leave item will be transformed to a dichotomous variable with no intention to leave nursing profession (score = 3) and intention to leave nursing profession (score > 3). Psychometric properties of the instrument were tested by calculating internal consistency using Cronbach's Alpha. The three items produced an acceptable reliability level; $\alpha = 0.89$ at time 1, and .85 at time 2. Validity of the scale is confirmed by the correlation of unsupportive environment, high work-home interference and intention to leave the profession.

Recently, Sears (2010) has been adapted intention to leave the occupation scale from Hom et al. (1984) to test the differences in occupational withdrawal intentions across the occupational commitment profiles among 403 acute care nurses in Northwestern United States. A sample item is, "I often think about quitting this profession." "I am planning to search for a new job outside this profession during the next 12 months." "If I have my own way, I will be working in some other profession one year from now." Participants were asked to rate their agreement with three items on a five-point agreement scale (strongly disagree=1 to strongly agree=5). The scale demonstrated acceptable reliability at Time 1 and Time 2 ($\alpha = .83$, $\alpha = .82$, respectively).

Regarding existing instruments, there are different kinds of scale to measure intention to leave nursing profession. Hasselhorn et al. (2008) measured nurses' consideration of leaving the profession with a single item that asked about the often of thought about leaving nursing. A single item cannot fully represent a complex theoretical concept or any specific attribute McIver & Carmines (1981) of intention to

leave nursing profession which refers to the intensity of thought about intention to terminate or departure from nursing career and have plan search new job to work in further qualification outside nursing, or other occupations; or not working. Therefore, to measure psychological attributes is required to use multi-item measures instead of a single item. For the occupational turnover intention scale (van der Heijden et al., 2007) and the occupational turnover scale (Hom et al., 1984) even these two instruments comprised of different three items to measure specific attribute of intention to leave nursing profession, the occupational turnover intention scale (van der Heijden et al., 2007) present the most practical measure thought of leaving the profession that linked to leaving behavior.

In conclusion, this study intention to leave nursing profession refers to the intensity of thought about intention to terminate or departure from nursing career and have plan search new job to work in further qualification outside nursing, or other occupations; or not working. It was measured by the occupational turnover intention scale – Thai version modified from the occupational turnover intention scale of van der Heijden et al. (2007). The details of modification process and psychometric properties testing of the instrument are presented in Chapter III.

Determinants of nurses' intention to leave nursing profession

An understanding of the factors related to nurses' intentions to leave the nursing profession is crucial for developing effective retention strategies; therefore, researcher had been conducted integrative review on factors influencing registered nurses' intention to leave the nursing profession in order to review and synthesize the best available empirical evidence on factors affecting nurses' intention to leave the nursing profession. An integrative review based on the five stages methodology:

problem identification, literature search, data evaluation, data analysis and presentation of the results (Cooper, 1998; Whitemore & Knafl, 2005). The databases CINAHL Complete, Mosby's Index, ProQuest Nursing & Allied Health Source, SCOPUS, and PubMed were searched from January 2005 to December 2014. The Critical Review of Quantitative Research worksheet was used to extract information in reviewing method. Twenty-three published studies were included in the resulted. The review's findings were organized into three themes: personal factors, organizational factors, and economic factors. Personal factors included socio-demographic characteristics, perceptions of burnout and work-family conflicts. Organizational factors included job satisfaction, job commitment, and the work environment. Economic factors referred to the availability of alternative jobs and/or other employment opportunities in the labor market.

Furthermore, theoretical model based on push and pull factors was derived to be a guideline in the conceptual model of this study. Push and pull factors has been stated by the International Council of Nurses (ICN, 2001) in order to counteract migration. The underlying causes of migration on health care delivery system are domineering to understand this pattern. The pattern of migration was presented in many ways such as flows from rural to big city, from less developed to industrialized countries. In addition, health professionals also move from the public to the private sector in the health service, and from the public to the private commercial sector such as pharmaceuticals as well (Awases, Gbary, Nyoni, & Chatora, 2004).

Beside this theoretical concept, the push factors are involved adversely perceived aspects of jobs which drive employees want to end their employment and away from the career (Beehr et al., 2000; Estryng-Behar et al., 2010), it is also called

internal organizational factor which could be controlled by organizations (Ali Shah et al., 2010; Sangpow, 1999). Previous literature proposed that the various work-related or job-related characteristics can be conceptualized as “push” variables (Beehr et al., 2000; Taylor & Shore, 1995), which may push an individual away from work and toward a decision to leave their career. In addition, the notation of “push” factors has been stated as an organizationally relevant effects associated with intrinsic motivating job such as job satisfaction and the form of commitment (Clegg, 1983).

Oppositely, the pull factors are those reasons that attract the employee to a new location, it could be called external organizational factors which is beyond the control of organizations (Ali Shah et al., 2010; Beehr et al., 2000; Estryn-Behar et al., 2010; Sangpow, 1999). Literatures frequently mentioned on “pull” factors of countries abroad are included stable socio-political environments; professional work environments that are more conducive to training and skills development; proper equipment, tools and facilities that are more conducive to advanced practice and procedure; more attractive salaries, social and retirement benefits; and sensitive employment policies that recognize good performance (Awases et al., 2004).

Regarding to literatures reviewing, push factors which are antecedent of intention to leave nursing profession can be classified into work-related factors and organizational factors. Work-related factors, burnout, which is a physical, emotional, and intellectual exhaustion syndrome manifested by adverse attitude to professional life, was associated with greater intention to leave the profession (Flinkman et al., 2008). The other factor that also found to be a significant cause of leaving intention from nursing career is work-family conflict which occurred when work-related

demands interfere with family responsibilities (Frone et al., 1992) could affect to nurses' intention to leave the profession (Simon et al., 2010).

Organizational factors, job satisfaction was pointed out to be the traditional determinant of intention to leave nursing profession (Gauci Borda & Norman, 1997; Lu et al., 2002). The other traditional antecedent of intention to leave the profession is professional commitment; it was viewed as indicator of nurse committed to their occupation. The strong evidence indicated that lower professional commitment was associated with greater intention to leave the profession (Jirawuttinunt et al., 2010; Liou & Cheng, 2010). In addition, the pull factors which is attractive external organizational factors are present by economic factors (Irvine & Evans, 1995), it was found plentiful alternative employment opportunity have relationship with intention to leave nursing profession (Irvine & Evans, 1995; Simon et al., 2010). Moreover, professional work environments that are more conducive to training and skills development has been recognized as a pull factor that could attract professional nurses work in another area. This is supported by the NEXT study has been shown that unsupportive work environment can predict nurse intention to leave the profession (van der Heijden et al., 2007).

Regarding to explaining and predicting intention to leave nursing profession among registered nurses, a substantial amount of evidence had adopted from literature review based on push and pull factors as a conceptual framework to test the concept of intention to leave nursing profession in this study (Figure 2).

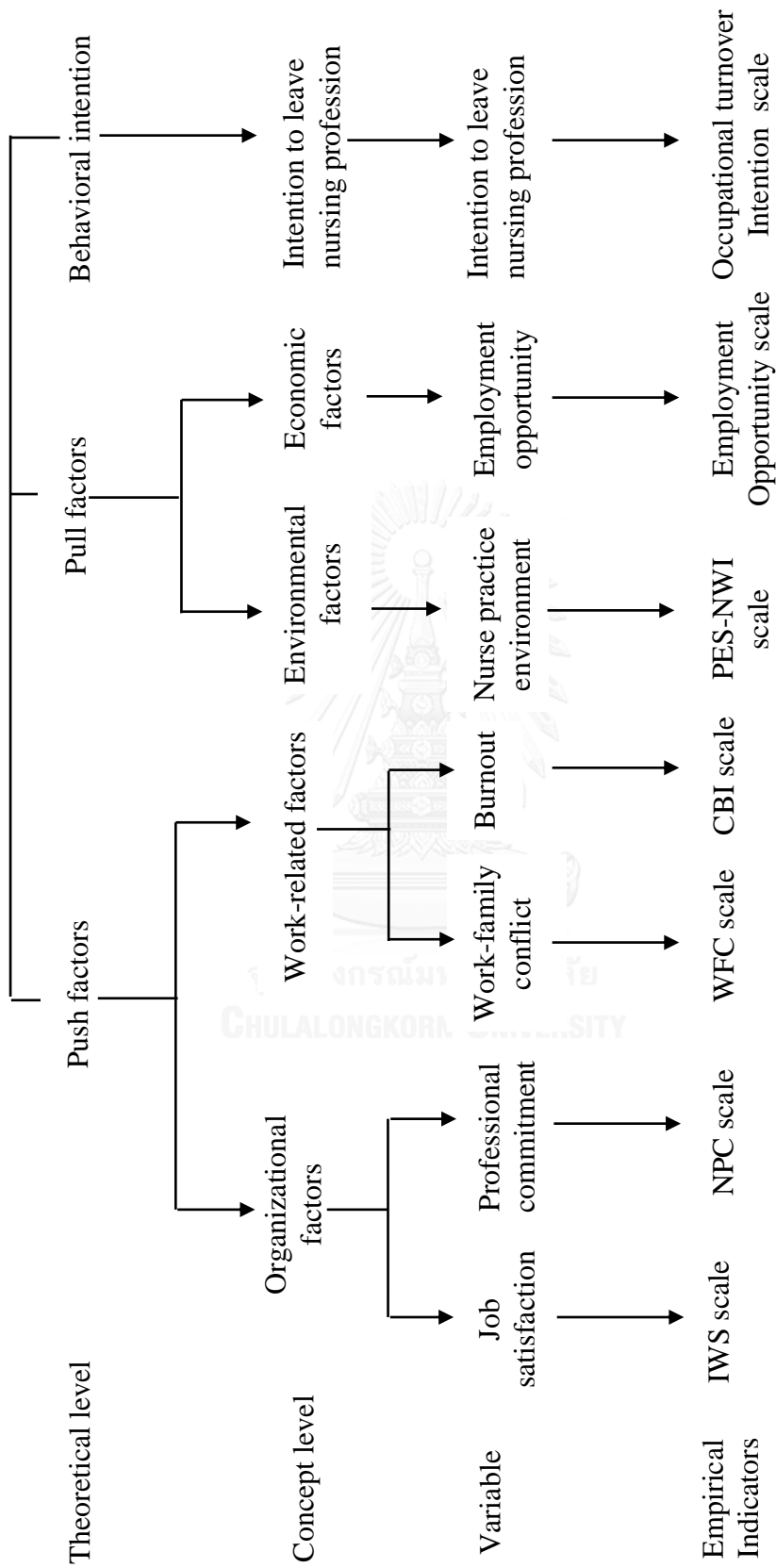


Figure 2 Theoretical substructure diagram

Job satisfaction

In a larger study to see what relationship it has with the nursing shortage. Job satisfaction is recognized as a concept closely linked to intent to leave and actual turnover. The level of job satisfaction has often been found to be a significant predictor of nurses' intention to leave nursing profession (Zurmehly et al., 2009). Several studies have indicated that nurses who were less satisfied with their jobs were more likely to consider leaving their profession (Dotson et al., 2014; Flinkman et al., 2008; Gurkova et al., 2013; Li et al., 2010; Salminen, 2012; Simon et al., 2010; van der Heijden et al., 2010; van der Heijden, van Dam, & Hasselhorn, 2009). On the other hand, nurses who reported higher level of job satisfaction also reported a greater likelihood of remaining in their career (Ingersoll et al., 2002). Moreover, it has long been recognized as a crucial indicator of hospital due to its related positively to job performance, nurse retention, patient satisfaction, and quality of care (Shader, Broome, Broome, West, & Nash, 2001). Negatively, the evidence supports that while nurses have dissatisfaction on their job, this could lead to undesired outcomes such as job stress, burnout, absenteeism, intention to leave, and turnover (Aiken & Patrician, 2000; Hayes et al., 2006; Parsons, 1998; Shader et al., 2001; Shields & Ward, 2001).

Definition of job satisfaction

Job satisfaction can be defined as how one feels about one's job (Cowin et al., 2008; Stamps, 1997). Furthermore, job satisfaction was described as the degree of positive affect towards a job or its components or employment (Adams & Bond, 2000; Mueller & McCloskey, 1990). Coomber & Barriball (2007) had been described job satisfaction as "an individual's appraisal of the degree to which the job fulfill one's own job values can cause a positive emotional state of satisfaction or

contrasting negative feeling of dissatisfaction”. These definitions seem to be just one feather of job attitude which described as an overall feeling about the job that can be measured by the global approach measurement.

Furthermore, job satisfaction can view as a set of attitude about various aspects of the job that could be used facet approach to determine particular aspects of job which produce satisfaction or dissatisfaction for the individual (Coomber & Barriball, 2007). Facets of job satisfaction can involve any aspect of the job. Prothero, Marshall, & Fosbinder (1999) identified job satisfaction in term of intrinsic and extrinsic values. Extrinsic values include tangible aspects such as wages, work benefits, networks and bonuses. Intrinsic values include status, a sense of achievement, the ability to interact with others, self-worth, self-esteem, accumulation of knowledge/skills and the ability to utilize and express creativity (Hebzbeg et al., 1959; Prothero et al., 1999; Spector, 1997). These can be measure with these facets of job satisfaction. Together with these definitions, job satisfaction can be defined as an affective component such a feeling of satisfaction, and a perceptual component which is an evaluation of whether one’s job meets one’s needs (Tovey & Adams, 1999). In addition, these frequently access multifaceted of job satisfaction include pay, co-workers, supervisors, work environment, and organizational factors (Stamps, 1997; Stamps & Piedmonte, 1986).

Regarding previous literature, job satisfaction in the present study is referred to nurses’ appraisal of the degree to which the job fulfills their own job values on specific dimensions of the career which comprised of autonomy, pay, task requirements, organizational policies, interaction, and professional status (Coomber & Barriball, 2007; Stamps, 1997).

Research related job satisfaction

The robust empirical evidence showed the influence of job satisfaction on intention to leave, Lu et al. (2002) investigated the relationships among turnover intentions, professional commitment, and job satisfaction of registered nurses in Taiwan. Results reveal that there was a positive correlation between job satisfaction and professional commitment, and intention to leave the profession. The negative correlation was significant between professional commitment and intention to leave profession ($r = -0.55$, $p < .01$), and between job satisfaction and intention to leave profession ($r = -0.37$, $p < .01$). The discriminant analysis showed that 30.5 percent of job satisfaction was correctly classified in predicting intention to leave the profession. 39.7 percent of professional commitment was correctly classified in predicting the intention to leave the profession.

Likewise, Gurkova et al. (2013) investigate the relationship between turnover intentions and job satisfaction among Czech and Slovak nurses, results show job satisfaction correlated negatively with the intention to leave the nursing profession ($r = -0.23$; $p < 0.01$). Furthermore, the intention to leave the nursing profession was predicted by three domains of job satisfaction (control/responsibility, scheduling, co-workers), explaining a total of 5% of the variance. This indicated the higher satisfaction of nurses with their control/responsibility, scheduling, co-workers reported, the less they consider leaving the nursing profession.

Borda and Norman (1997) found that nurses who reported higher levels of job satisfaction also reported a greater commitment to their job and were more likely to remain in their career ($r = 0.48$, $p < .005$).

Ingersoll et al. (2002) conducted the survey among 1,853 registered nurses in New York. Research findings suggest that job dissatisfaction contributes to employees' intention to leave their profession. This indicated that nurses who were dissatisfied with their work situation more often considered changing careers. Similarly, Blau (2007) observed a negative relationship between job satisfaction and employees' occupational turnover intention.

Regarding these literatures, job satisfaction is an important concept as levels of job satisfaction may impact upon the global nursing workforce. This can be hypothesized that job satisfaction has direct positive relationship with professional commitment, and has direct negative relationship to intention to leave nursing profession.

Measurement of job satisfaction

Regarding literature review, there are various instrumenting used to measure job satisfaction. There are four instruments that will present as the followings:

The Job Satisfaction Survey (JSS) had been developed for using in human service to assess attitudes about the job and aspects of the job. The scale was developed based on the samples from community health centers, state psychiatric hospitals, state social service departments, nursing homes (Spector, 1985). The scale comprised of 36 items, nine facet scales. The nine facets are pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, coworkers, nature of work, and communication. There are four questions for each subscale, and a total score is computed from all items. A summated rating scale format is used, with five choices per item ranging from "disagree very much" to "agree very much." Items

are written in both directions, so about half must be reverse scored. Based on a sample of 2,870; the internal consistency reliabilities (coefficient alpha) of total scale showed .91 (Spector, 1997).

Later, The Index of Work Satisfaction (IWS) originally developed in 1972 the instrument was based on a combination of need-fulfillment theory and social reference group theory (Stamps & Piedmonte, 1986) and has been through two revision processes (Stamps, 1997). The IWS has been tested in multiple nursing populations (Newcomb, Smith, & Webb, 2009). For instance; this tool had been used by the American Nurses Association since 2003 for its National Database of Nursing Quality Indicators (NDNQI), which is part of the Association's safety and quality initiative (Taunton et al., 2004). It was reported that 76,000 nurses from hospitals across the USA participated in this survey in 2005 (American Nurses Association, 2005). The IWS is a two-part multidimensional instrument. Part A measures the importance of six components of job satisfaction: pay, autonomy, task requirements, organizational policies, interaction and professional status. The components are defined at the beginning of the instrument before respondents are presented with 15 forced-choice comparisons of the six components. Pay is the monetary remuneration and fringe benefits received for work done. Autonomy is the amount of job-related independence, initiative and freedom, either permitted or required in daily work activities. Task requirements are tasks or activities that must be done as a regular part of the job. Organizational policies are the management policies and procedures put forward by the hospital and nursing administration of the hospital. Interaction is the opportunity presented for both formal and informal social and professional contact during working hours. Professional status is the overall importance or significance felt

about the job, both in own view and in the view of others. Part B is comprised of 44 statements that allow respondents to rate their present feelings of job satisfaction on a Likert scale ranging from 1 (strongly agree) to 7 (strongly disagree). Half of the items are positively while the other half is negatively worded. High job satisfaction was indicated by scoring high on positively worded items, low scores on negatively worded items or both. On the other hand, low job satisfaction was indicated by low scores on positively worded items, high scores on the negatively worded items or both. Possible scores range from 44 to 308. If scoring is lower 50% of possible scores, it will be indicated as a low amount of satisfaction. Previous research has determined the instrument is reliable and valid, with coefficient alpha ranging from .82 to .91 for the overall scale (Stamps, 1997). The six subscales demonstrated adequate reliability coefficient ranges of .83-.89 (Pay), .69-.76 (Autonomy), .69-.78 (Task Requirements), .73-.83 (Organizational Policies), .45-.76 (Professional Status), and .72-.84 (Interaction). The instrument's validity was reestablished in the form of a factor analysis with demonstrating appropriate loading on the six factors comprising the subscales. The IWS has been used numerous times for clinical and administrative purposes and was found to be a valid and reliable measure of nurse job satisfaction (Best & Thurston, 2004; Manojlovich, 2005).

In 1990, Mueller and McCloskey have been created the Mueller and McCloskey Satisfaction Scale (MMSS). The MMSS was designed to measure job satisfaction among nurses working in hospitals and consists of 31 items measuring nurses' job satisfaction in 8 domains: satisfaction with extrinsic rewards, scheduling, family/work balance, co-workers, interaction, professional opportunities, praise/recognition, and control/responsibility. Each item is rated along a 5-point

Likert scale (5=very satisfied, 3=neither satisfied nor dissatisfied, 1=very dissatisfied). Scoring and interpretation in this scale is summated score items of subscale. The reliability of this scale presented by internal consistency (α) = 0.89., and test-retest reliability = 0.64 (six month interval). Criterion-related validity had been showed correlation with Brayfield-Rothe general satisfaction scale, Hackman and Oldham's job diagnostic survey that ranged from 0.53 to 0.75. Construct validity has been showed the correlated with characteristics from job characteristics inventory that found in the areas of autonomy, friendship opportunities, feedback, variety and task identity, and correlation with intent to stay on job also found.

The Satisfaction in Nursing Scales (SINS) is a traditionally measurement on job satisfaction which emphasized on the interaction of people with their work environment and condition of employment (Lynn & Redman, 2005). This scale has been used among 787 nurses to examine the relationship between organizational commitment, job satisfaction, and nurses' intention to leave. This scale comprised of 54 items rating on 4 Likert-type scales with ranging from 1 = strongly disagree to 4 = strongly agree. This scale is used to measure in 4 domains which are workload, intrinsic satisfiers, collegiality, and administrative support. The scale reliability has been ranged from .87 to .92. The SIN has been tested for content validity using a panel of 20 nurses; all items were rated as content valid by at least 80% of the panel experts.

Previous literatures show different kinds of measurement to measure job satisfaction in various aspects. However, the Index of Work Satisfaction (IWS) which developed by Stamps (1997) presented the aim to respond the feelings of job satisfaction on six domains which could be reflected the attitude of nurses toward

overall their work. Additionally, the IWS has been used numerous times for clinical and administrative purposes and was found to be a valid and reliable measure of nurse job satisfaction (Best & Thurston, 2004; Manojlovich, 2005). In conclusion, this study job satisfaction refers to nurses' appraisal of the degree to which the job fulfills their own job values on specific dimensions of the career which comprised of autonomy, pay, task requirements, organizational policies, interaction, and professional status. It could benefit to measure this concept by the Index of Work Satisfaction – Thai version modified from the IWS of Stamps (1997). The details of modification process and psychometric properties testing of the instrument are presented in Chapter III.

Professional commitment

Commitment to nursing has been raised to be considered caused of employees who are committed will develop dedication to the goals and values of an organization and profession that cause them to devote hard effort to fulfill this obligation (Lu et al., 2002; Zangaro, 2001). Within the construct of commitment, career or professional commitment is distinct from two other construct of commitment which are commitment to a job (job involvement) and commitment to an organization (organizational commitment) in which these latter two forms are described to loyalty or bonding of employee to a specific job or organization (Blau, 1985; Gardner, 1992; Price & Mueller, 1981).

Commitment is an approach reflecting the level of one's attitude toward the organization, which can be treated as a stabilizing force supporting the employee's decision to continue working in an organization (Liou & Grobe, 2008). It has implications for the decision either to continue or discontinue membership in the organization (Meyer & Allen, 1991). Even though commitment to an organization is

important from a policy perspective, a more macro view of the situation indicates that current nurses are more likely to be committed to their occupation than their organization (Lu et al., 2002).

Some researcher supported that the career commitment concept in more specific terminology than work in general is more important due to demonstrated strong negative relationship to career withdrawal cognitions (intention to leave the profession) than the other work commitment concept (job involvement, organizational commitment) (Blau, 1985). In addition, it has been found that commitment to one's profession indicates an employee's intention to remain in the profession, and can in turn influence the amount of effort he or she expends on the job and the level of satisfaction that the employee derives from his or her position (Blau, 1985; Gary Blau, 1999; McGinnis & Morrow, 1990; Somers & Birnbaum, 1998). Therefore, the present study tends to use term "professional commitment" as an important contributor to intention to leave nursing profession.

Definition of professional commitment

Previous literature presented that the term "professional", "occupational", and "career" commitment were used interchangeably (Zangaro, 2001). Professional commitment has been defined in many ways. In 1985, Blau had been defined occupational commitment as "one's attitude toward one's profession or vocation". Moreover, Meyer, Allen, and Smith (1993) integrated the idea of occupational commitment with their 3-component model of organizational commitment, resulting in a 3-component model of occupational commitment. Affective occupational commitment (AC) refers to the desire to stay in a profession. Continuance occupational commitment (CC) refers to the need to stay in a given profession

because of the costs associated with leaving. Lastly, normative occupational commitment refers to the obligation to stay in a profession because of social influences. This concept has implications for the decision either to continue or discontinue membership in the profession (Meyer & Allen, 1991). Greenhaus, Callanan, and Godshalk (2000) identified occupational commitment as “a psychological link between a person and his or her occupation that is based on an affective reaction to that occupation” (p.800).

In nursing field, Gardner (1986) connected this concept to nursing on the believe that nurses spend a considerable amount of time, energy, and money preparing for their chosen field, thus the definition of career commitment in nursing has been defined as “the intent to build a career that is a meaningful part of a lifelong pursuit” (Gardner, 1986, p. 155). Friss (1983) defined professional commitment as characterized by unwillingness to change career, personal involvement in the work role, dedication to the profession, pride in the occupation, and stimulation from professional activities.

Recently, Lin et al. (2007) have been operational defined professional commitment based on Mowday et al. (1979) theoretical definition in which can define as a strong belief in and acceptance of professional values, a willingness to exert considerable effort on behalf of the profession, and a definite desire to be a membership in the profession. Teng, Lotus Shyu, and Chang (2007) defined professional commitment as the loyalty of nurses to the nursing profession, and related to involvement dedication, love, and belief in the positive values of nursing; high commitment in the profession could be induced more responsive in making efforts to advance professional values.

Regarding previous literatures, the empirical evidence confirmed that the commitment to one's profession indicates an employee's intention to remain in the profession (Blau, 1998). For the purpose of this study term professional commitment was used as it best predictor for intention to leave nursing profession. Therefore, professional commitment in present study has been operational defined as nurses' attitude toward their profession which characterized by a strong belief in and acceptance of professional values, a willingness to exert considerable effort on behalf of the profession, and a definite desire to be a membership in the profession.

Research related professional commitment

Professional commitment is an individual's psychological attachment to the profession. Several studies have found that low professional commitment is strongly associated with high intentions to leave the profession (Flinkman et al., 2008; Lu et al., 2002; Nogueras, 2006; Russo & Buonocore, 2011; Simon et al., 2010; van der Heijden et al., 2009). The study reveal professional commitment had significant negatively correlation with intention to leave profession ($r = -0.55$, $p < .01$). Furthermore, the discriminant analysis showed that 39.7 % of professional commitment was correctly classified in predicting the intention to leave the profession (Lu et al., 2002).

Flinkman et al. (2008) investigate intention to leave nursing profession among registered nurses aged fewer than 30 in Finland. Scales in relation to the question of intention to leave nursing profession and affective professional commitment were tested with Mann–Whitney U-test. The finding reveals affective professional commitment had a significant correlated to intention to leave nursing profession at the 0.001 level (2-tailed). This indicated that the nurses who most often

considered leaving the profession were those who had weak affective professional commitment.

In 2009, van der Heijden and colleague examine potential predictors of nurses' intention to leave the nursing profession among 1,187 registered nurses. The results show that occupational commitment had a significant negative relationship with occupational turnover intention ($r = -0.21, p < .001$). Additionally, structural equation modeling (SEM) was used to test the hypothesis. In the model, occupational commitment had significant negatively related to occupational turnover intention ($\beta = -0.19, p < .001$).

In meta-analysis study, occupational commitment was statistically significantly correlated with turnover, both intended and actual (Lee et al., 2000). Furthermore, the study showed that there was strongly association between affective occupational commitment and occupational turnover intention for professional employees (Lee et al., 2000).

Regarding these evidences, this can be hypothesized that professional commitment has direct positive relationship to intention to leave nursing profession.

Measurement of professional commitment

The instruments using in measuring professional commitment were developed by various perspectives. From searching the existing instrument used to measure professional commitment, there were four instruments that presented as the followings:

In 1985, Blau had been developed career commitment scale in the aim to examine a distinct measure of career commitment and showed a different relationship to withdrawal cognition scales than measures of other work commitment. In this

longitudinal study use a sample of 119 registered nurses from a large urban hospital. The scale comprised of 8 items. Item responses were rating on 5 point format, where 1=strongly disagree to 5=strongly agree. The eight-item scale has a range of potential values from 8 to 40. Items 1, 3, and 7 have been reverse coded, and items were linearly summed to create a scale score so that a high score indicates a high occupational commitment. The items pool of this scale was render from the measure of following concepts: professional commitment (Price & Mueller, 1981); occupational commitment (Downing, Dunlap, Hadley, & Ferrell, 1978); and career orientation (Liden & Green, 1980). This instrument has been presented good psychometric properties. Factor analysis was used to determine whether career commitment could be operationalized using a measure which demonstrated discriminant validity from measures of job involvement and organizational commitment.; and showed high positive correlation of career commitment measured (.63) that suggested correspondence to convergent validity (Blau, 1985). The scale has been proven reliable by measuring internal consistency, and test-retest research design; the Cronbach's alpha of time 1 was .87 and time 2 was .85, and .67 in test-retest. The reliability of instrument was confirmed by Blau and Lunz's (1998) study that aim to examine external, personal, and work-related correlates of intention to leave the profession, especially the contribution of professional commitment for explaining intention to quit the profession among medical technologists. Reliability in the latter study showed the coefficient alpha of this scale was .84.

The Gardner Career Commitment Scale was developed by Gardner, in 1986, by designing to examine career commitment in hospital nurses and explore its relationship to turnover and job performance. The sample was 320 newly registered

nurses at one hospital. This scale comprised of seven items, with each item rated on a 5-point Likert scale from strongly disagree to strongly agree. Items for the total scale were summed and mean was derived. The higher mean score indicated that high level of career commitment. Psychometric properties of this scale were testing by exploratory factor analysis. Resulting showed unidimensional seven-item scale. Reliability of the scale was presented by Cronbach's alpha values which are .80 to .82 (Gardner, 1986).

In 2007, van der Heijden and team have been adopted affective occupational commitment (Meyer et al., 1993) in longitudinal study among 1,187 nurses with the purpose to examine the factor underlying nurses intent to leave the nursing profession. The occupational commitment scale was consisted of 4 items. This scale scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 points (strongly agree). The reliability of the instrument was showed by Cronbach's alpha was 0.75.

The Nurses' Professional Commitment Scale (NPCS) was developed by Lin et al. (2007). This scale was designed to assess professional commitment among nurses in Taiwan. Three hundred and sixty three nurses from two hospitals were the sample of the study. The items were established from a systematic review of the literature in the area. This scale comprised of 19 items with scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 points (strongly agree). The total score ranged from 19 (lowest professional commitment) to 95 (highest professional commitment). This scale was established to measure in 3 domains: nursing professional compliance, involvement of nursing professional, and retention of nursing professional. The validity of this scale was examined by measuring the

content validity, construct validity (through principal component analysis), criterion validity, and concurrent validity. The reliability of scale was determined by testing internal consistency and test-retest. The scale showed good psychometric properties. The Cronbach's alpha coefficient of total scores was 0.91, and test-retest reliability of total scores was 0.91.

Regarding existing instruments, the career commitment scale which developed by Blau (1985); although the scale presented good psychometric properties and high correspondence between career commitment and career withdrawal cognitions, there is some argument that no assurance on possess content validity cause of final item selection is based on systematic development procedure (Carson & Bedeian, 1994). Moreover, the scale is unidimensional measurement; there is a question that it can measure all dimension of career commitment in nursing profession. This point also takes into a consideration of unidimensional in the Gardner Career Commitment Scale (Gardner, 1992). Furthermore, this scale was conducted among newly employed registered nurses at one hospital, thus, this scale has limited on generalized and adequate sample. For the affective occupational commitment scale (van der Heijden et al., 2007), this scale was derived and adapted from Meyer et al. (1993) only one dimension (3 domains in original version) which focus on the desire to stay in a profession. Measuring only one dimension might not present to the complexity of professional commitment in nursing. Lastly, the Nurses' Professional Commitment Scale (NPCS) developed by Lin et al. (2007) to measure professional commitment among nurses. This scale showed good psychometric properties and three subscales of instrument: nursing professional compliance, involvement of nursing profession, and retention of nursing professional can reflect to nurses' attitude

toward their profession which characterized by a strong belief in and acceptance of professional values, a willingness to exert considerable effort on behalf of the profession, and a definite desire to be a membership in the profession, therefore, the NPCS is useful for measuring professional commitment in the present study.

In conclusion, professional commitment in current study refers to nurses' attitude toward their profession which characterized by a strong belief in and acceptance of professional values, a willingness to exert considerable effort on behalf of the profession, and a definite desire to be a membership in the profession. It could measure this concept by the Nurses' Professional Commitment Scale – Thai version modified from the Nurses' Professional Commitment Scale developed by Lin et al. (1997). The details of modification process and psychometric properties testing of the instrument are presented in Chapter III.

Burnout

Burnout is an important variable contributing to work stress which associated with intention to leave (Hasselhorn, Tackenberg, & Müller, 2003), and has been found to be an important predictor of nurse retention (Poghosyan, Aiken, & Sloane, 2009); assessing nurses' burnout is highly crucial in retaining qualified nurses and alleviating nursing shortage (Aiken, Buchan, Sochalski, Nichols, & Powell, 2004). Burnout has been initially described as a syndrome relatively common affects in human service occupation such as nurses, psychologists, police officers, therapists, etc. (Maslach, Schaufelli, & Leiter, 2001). It was applied to a particular type of employee (i.e., in a human service work) working over a long period of time in a particular situation and developing particular symptoms. Thus, burnout can be identified as a mismatch between personnel and job in six components of work life

such as workload, lack of control, lack of rewards, lack of community, lack of fairness, and value conflict (Maslach et al., 2001) which can lead to emotional exhaustion and undesirable outcomes. In addition, burnout also resulted from the inability to stabilize internal and/or external needs individually, and as a consequence inhibits the allocation of energy resources effectively (Maslach & Leiter, 2005). Initial research on burnout has been shown that the consequences of burnout are raised from interaction among the staff, the clients, and the larger institution (Maslach & Jackson, 1981). Burnout appears to be a vital factor contributes to job turnover, absenteeism, and low morale which can lead to deterioration in the quality of care providing by the staff (Freudenberger, 1974).

Definition of burnout

Burnout emerged into the literature in the 1970s, Freudenberger (1974) defined burnout as a state of fatigue or frustration that resulted from professional relationships that failed to produce the expected rewards (Aiken, Havens, & Sloane, 2009; Freudenberger, 1974). Furthermore, burnout was described as a syndrome of physical and emotional exhaustion caused by long-term involvement in situations that are emotionally demanding (Pines & Maslach, 1978; Pines & Aronson, 1988). Additionally, Maslach and Jackson (1981) defined burnout as “a syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do ‘people-work’ of some kind” (p.99).

Maslach and Jackson (1981) later has been described more on the definition of burnout by defining burnout as a physical, emotional and intellectual exhaustion syndrome manifested by adverse attitude to professional life and other people with the development of a negative self-esteem in the individual experiencing

chronic fatigue, and feelings of helplessness and hopelessness. Furthermore, Maslach and Jackson (1996) had been defined burnout as “a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who work with people in some capacity” (p.4). This concept can be divided into three categories, namely: 1) emotional exhaustion is defined as feeling of being emotionally drained and exhausted either physically or cognitively by one’s work; 2) depersonalization refers to an insensitive response toward people who are recipients of one's services; and 3) personal accomplishment refers to feelings of competence and successful achievement in one’s work with people (Jourdain & Chênevert, 2007). In addition, burnout can be defined as a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding (Schaufeli & Greenglass, 2001).

Recently, Kristensen, Borritz, Villadsen, and Christensen (2005) and Borritz (2006) has been mentioned on a specific domain in the person’s life, to understand this concept the key feature of these studies focused on the attribute of fatigue and exhaustion. Burnout has been defined as “a particular type of prolonged occupational stress that seemed to occur most prominently among human services professionals, with emotional exhaustion as its core symptom” (p. 5). This can be divided into 3 dimensions that are 1) personal burnout is referred to the degree of physical and psychological exhaustion experienced by the person; 2) work-related burnout is referred to the degree of physical and psychological exhaustion that is perceived by the person as related to his/her work; and 3) client-related burnout is defined as the degree of physical and psychological exhaustion that is perceived by the person as related to his/her work with clients.

Burnout has been described emphasize more on a commonly affects workers in service occupations Maslach et al. (2001), particularly those with prolonged exposure to stressors (Borritz et al.,2006; Poghosyan et al., 2009). Burnout was defined as defined as a persistent dysfunctional state that results from prolonged exposure to chronic stress, which is a situation where a person feels confronted incessantly with a high level of demands and insufficient resources linked to the work itself and to extent in which the work takes place (Jourdain & Chenevert, 2010).

From literature review demonstrated that most scientific research uses the three-dimensional including of emotional exhaustion, depersonalization, and personal accomplishment (Schaufeli, Leiter, & Maslach, 2009). However, there are some arguments regarding these three dimensions. Some author argued that the depersonalization dimension has been regarded because it associated coping strategy rather than an essential part of the syndrome, and (lack of) personal accomplishment appeared to be in the process of being relegated to the status of a possibly associated coping strategy, therefore, it should not be combined into a single score (Borritz, 2006; Kristensen et al., 2005; Schaufeli & Taris, 2005). Many authors agree that emotional exhaustion is a core component of burnout. Thus, several studies have been defined the concept of burnout based on unidimensional of burnout syndrome which is the feelings of emotional exhaustion (Aiken & Sloane, 1997; Janssen, Jonge, & Bakker, 1999; Malach Pines, 2002) because there are evidence supported the emotional exhaustion dimension is most strongly related to causes and consequences of burnout (Lee & Ashforth, 1996). In the others, many authors defined burnout in two dimensions which are emotional exhaustion and depersonalization (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Jourdain & Chênevert, 2007; Kalliath,

O'Driscoll, Gillespie, & Bluedorn, 2000). Lee and Ashforth (1996) had been indicated that the dimension of personal accomplishment is problematic because it was found to have a weak association with the emotional exhaustion and depersonalization dimensions in the investigation on the causes and consequence of burnout.

Therefore, the concept of burnout using in current study are based on the definition of Borritz (2006) which emphasized on emotional exhaustion aspect that occurred from prolonged occupational stress among human service workers, where former engaged employees gradually get overwhelmed of emotional exhaustion, loss of energy, and withdrawal from work (Borritz et al., 2006). Thus, the operational definition of burnout is defined as a state of physical and psychological exhaustion with experienced by nurse that comprised of three specific domains in person's life that is general exhaustion, exhaustion attributed to work in general, and exhaustion attributed to work with client.

Research related burnout

Burnout has strong evidence that contribute to intention to leave nursing profession (Heinen et al., 2013; Simon et al., 2010). Flinkman et al (2008) had been explored intention to leave nursing profession among registered nurses aged fewer than 30 in Finland. Scales in relation to the question of intention to leave nursing profession and personal burnout were tested with Mann–Whitney U-test. The finding reveals personal burnout had a significant correlated to intention to leave nursing profession at the 0.001 level (2-tailed). This indicated that nurses who presented high score on the personal burnout scale had more often thought about leaving nursing.

A longitudinal observational study on the impact of burnout on the development of intention to leave the profession of nurses who had been in the field

for less than one year found that the percentage of them reported high burnout and intended to leave the profession was 27% after one year, 45% after three years, and 43% after five years of employment (Rudman et al., 2014). Burnout during nursing education was found to influence initial levels of intention to leave during the first year of employment a statistically significant but small association was found between high levels of study exhaustion and lower turnover intentions in the first year of employment ($\beta = .117, p < .001$). In addition, burnout during first five years of employment was found to had higher concurrent levels of intention to leave (β ranged between .116 and .178, $p < .001$). It was evident that nurses who felt high levels of burnout were related to an increase in intention to leave nursing profession.

Heinen et al.(2013) investigated factors associated with intention to leave the profession among 23,159 nurses in 10 European countries. These countries were Belgium, Finland, Germany, Ireland, the Netherlands, Norway, Poland, Spain, Switzerland and the United Kingdom. The results reveal that burnout is a significant correlate of intention to leave in all ten countries. Odds ratios range from 1.56 (95%CI: 1.21–2.02) in Finland to 2.89 (95%CI: 2.18–3.82) in Switzerland, indicating that the odds of intention to leave the profession are one and a half to three times as high in nurses with a high score on burnout. Burnout is consistently associated with nurses' intention to leave their profession across the 10 European countries. These findings reflect a clear relationship between intention to leave the profession and burnout of nurses.

Moreover, burnout is found to be associated with job satisfaction and intention to leave nursing profession (Van Bogaert, Clarke, Roelant, Meulemans, & Van de Heyning, 2010). The study was conducted to examine the effect of unit-level

nurse practice environment, workload and burnout on job outcomes and quality of care variables, multilevel modeling was used. The results reveal display significant associations between job satisfaction, burnout, and intention to leave profession. Job satisfaction (OR, 0.94 (95%CI: 0.90-0.98, $p < .001$) and intention to leave profession (OR, 0.92 (95%CI: 0.87-0.97, $p < .001$) were significant associated with emotional exhaustion. It indicated that lower levels of the burnout predicted more favorable outcomes which are job satisfaction and no intention to leave the nursing profession.

Additionally, Jourdain and Chenevert (2010) mentioned in their studies, emotional exhaustion has an effect on professional commitment, and eventually leads to nurses' greater intention to end their career. The study was conducted to examine the role of burnout in the relationship between stress factors related to nurses' work and social environment and intention to leave the profession among 1636 registered nurses working in hospitals. The results reveal professional commitment had a significant negative correlated to two form of burnout; depersonalize and emotional exhaustion ($r = -0.33$, $p < .001$; $r = -0.31$, $p < .001$), respectively. Moreover, the study found that professional commitment is negatively associated with intention to leave the profession ($r = -0.62$, $p < .001$). Additionally, the structural model analysis was used in the analysis. The model demonstrated that professional commitment had significant direct effect on intention to leave nursing profession ($\beta = -0.50$, $p < .001$), and emotional exhaustion has a greater total effect on intention to leave the profession ($\beta = 0.41$, $p < .001$) than depersonalization ($\beta = 0.28$, $p < .001$). This indicated that emotional exhaustion had a strongly negative effect on professional commitment, which led to high intentions to leave the profession.

Regarding the literature, these can hypothesize that burnout has negative direct relationship to job satisfaction and professional commitment. Moreover, burnout found to has positive direct relationship to intention to leave nursing profession.

Measurement of burnout

The instruments which used to measure burnout were variety developed. From searching the existing instrument using to measure burnout, there are four instruments that will present as the followings:

The Maslach Burnout Inventory (MBI), originally developed by Maslach and Jackson in 1981, is a norm referenced scale most broadly used for measuring burnout that consists of three subscales: emotional exhaustion, depersonalization, and personal accomplishment. The scale was designed to measure hypothesized aspects of the burnout syndrome that administered to wide range of human services professional, for instance, physicians, nurses, psychiatrists, counselors, social workers, etc. This scale comprises of 9 items in the emotional exhaustion subscale which refers to feelings of being emotionally overextended and exhausted by one's work. The depersonalization subscale contains 5 items which refers to an unfeeling and impersonal response towards recipients of one's care or service. For these two subscales, higher mean scores correspond to higher degrees of experienced burnout. The 8 items in personal accomplishment that describe feelings of competence and successful achievement in one's work with people, in contrast, to identify higher degrees of experienced burnout, this subscale will correspond in lower mean scores. The scale has been rated on a 7-point Likert-type scale which asking how often they experience certain feelings. The instrument's item response options are anchored by

never = 0 and every day = 6. For each subscale, the items are summed and means and standard deviations calculated. Each subscale stands alone, but together, they have been defined the score (cut-off points) for three levels of burnout to categorize a group or individual into low, medium, or high levels of burnout (Maslach & Jackson, 1996). The original MBI is a reliable and valid instrument with internal consistency, Cronbach's α results for the subscale ranging from .74 to .89. Test-retest reliability coefficients for the subscale were obtained by an interval of 2-4 weeks, results ranging from .69 to .82. Validity of the scale provided discriminant and convergent validity in several ways; MBI scores were correlated with behavioral rating, job characteristics that expected contribute to burnout, and various outcomes (Maslach & Jackson, 1996; Van Bogaert et al., 2010). This scale had been translated to use in turnover research. Suzuki and team (2010) translated MBI scale into Japanese version (J-MBI) in order to explore factor affecting turnover of Japanese novice nurses. The J-MBI scale showed reliability and validity. The result of this study showed that burnout is the most significant factor affecting turnover.

Schaufeli, Leiter, Maslach, and Jackson (1996) have been developed the Maslach Burnout Inventory-General Scale (MBI-GS) from the original MBI (Maslach & Jackson, 1981). The MBI-GS was used to measure the three dimensions of the burnout in non-contactual professions which consists of three subscales including emotional exhaustion, cynicism, and reduced professional efficacy. This scale is a 16-items with rated on a 7-point frequency scale that ranged from 0 (never) to 6 (everyday). The emotional exhaustion dimension consists of 5 items, which referred to fatigue in generic without referring to people as the source of those feelings. Cynicism has been described as distancing oneself from work itself and to the

development of negative attitudes toward work in general, and not to personal relationships at work. This dimension consists of 5 items. Lastly, professional efficacy was described in broader focus on encompassing of social and non-social accomplishment at work that consists of 6 items. Burnout is reflected in higher scores on exhaustion and cynicism, and lower scores on efficacy, whereas the opposite pattern reflects greater engagement. This instrument was established for the purpose to evaluate burnout among people in all occupations. Leiter and Schaufeli (1996) have shown that the internal consistency of each of these scales is satisfactory. They found Cronbach alpha coefficients ranging from .84 to .90 for exhaustion, .74 to .84 for cynicism, and from .70 to .78 for professional efficacy. Validity of the instrument was confirmed by using confirmatory factor analysis (Taris, Schreurs, & Schaufeli, 1999).

Later, in 2006, Borritz and colleague have been developed new instrument to measure burnout namely, the Copenhagen Burnout Inventory (CBI). An instrument was developed for PUMA study in Denmark which is conducted at the Danish National Institute of Occupational Health about burnout, motivation and job satisfaction. The study is designed as a 3-wave prospective study over 6 years (1999-2005) in seven organizations in the human service sector including: 1) a social security service in an urban area; 2) a state psychiatric prison; 3) institutions for severely disabled adults in a county; 4) a somatic hospital; 5) a psychiatric hospital; 6) a homecare service in a rural area, 7) a homecare service in an urban area. The CBI was developed in focusing on exhaustion and comprised of three specific domains in the person's life which is general exhaustion, exhaustion attributed to work in general, and exhaustion attributed to work with clients.

The CBI has three different scales that are: 1) Personal burnout scale is referred to “a state of prolonged physical and psychological exhaustion”, which is a general exhaustion corresponding to the general exhaustion concept that applies to everyone in and out of the workforce. The six items of this scale were derived from the 21 items of the BM that showed the best psychometric properties; 2) Work-related burnout that described as “a state of prolonged physical and psychological exhaustion”, which applies to everyone in the workforce. Six of the seven items of this scale were derived from the emotional exhaustion parts of the MBI and the MBI-GS; 3) Client-related burnout is referred to “a state of prolonged physical and psychological exhaustion”, which corresponds to the MBI and applicable only to people who work with clients. The finding of this study revealed that the three burnout scales correlated with each other, but it is overlap only partially that supports the idea of three different burnout scales.

All items have five response categories. The categories were: “never/almost never”, “a few times a month”, “once or twice a week”, “three to five times a week” and “(almost) every day”. The responses are rescaled to a 0-100 metric (Scoring: Always=100; Often=75; Sometimes=50; Seldom=25; Never/almost never=0). Scale scores are calculated by taking the mean of the items in that scale. Reliability of this instrument found to be high for the three CBI scales (Cronbach's alpha= 0.87 for both personal and work-related burnout; and 0.85 for client related burnout). The correlation coefficients between the scales were 0.73 for personal and work burnout, 0.46 for personal and client burnout, and 0.61 for work and client burnout. This instrument showed discriminate validity between the occupational groups in the PUMA study: a co-occurrence of both high client and high work

burnout was found in midwives, urban home care workers, social workers in the social security service, and social care workers in the institutions for the chronically disabled. In addition, client-related burnout showed a strong negative association with job satisfaction and for choosing the same job again, if one had the chance.

The Maslach Burnout Inventory (MBI) is recognized as a “gold standard” and popular using to assess professional burnout; it has been applied in more than 90% of all empirical burnout studies internationally (Schaufeli et al., 2009; Taris et al., 1999). The MBI are conceptually constructs derived from theoretical framework; this concept contains items reflecting three dimensions (emotional exhaustion (EE), depersonalization (DP) and reduced personal accomplishments (PA) that were confirmed by statistical method. However, there are many arguments on the MBI that the depersonalization dimension has been associated coping strategy rather than an essential part of the syndrome, and (lack of) personal accomplishment appeared to be in the process of being relegated to the status of a possibly associated coping strategy, and found to have a weak association with the emotional exhaustion and depersonalization dimensions in the investigation on the causes and consequence of burnout. Therefore, it should not be combined into a single score (Borritz et al., 2006; Kristensen et al., 2005; Lee & Ashforth, 1996; Schaufeli & Taris, 2005).

In conclusion, this study burnout refers to a state of physical and psychological exhaustion with experienced by nurse that comprised of three specific domains in person’s life that is general exhaustion, exhaustion attributed to work in general, and exhaustion attributed to work with client. This focused on emotional exhaustion aspect. It could benefit to measure this concept by the Copenhagen Burnout Inventory (CBI) – Thai version modified from the CBI of Borritz et al.

(2006). The details of modification process and psychometric properties testing of the instrument are presented in Chapter III.

Work-family conflict

Work and family are two important domains of adult life. The role of these domains expected to be balanced, if these roles are unable to coexist, it makes a difficult to participate in the other one (Wang et al., 2012). Work-family conflict (WFC) has been suggested as a source of job stress (Mauno & Kinnunen, 1999), which consequently leads to negative outcomes. Many empirical studies have been shown that conflict between work and family is associated with increased absenteeism, increased turnover, decreased performance, and poorer physical and mental health (Frone et al., 1997; Ganster & Schaubroeck, 1991). The interference of the work and family domain could be the factor affecting nurses intended to leave the profession. For many nurses, their present the need to combine work and demands, with balancing work and family responsibilities, but when they become harder to handle, work-family conflict will be occurred (Luk & Shaffer, 2005). Work-family conflicts or work-to-home interference were also strongly associated with intentions to leave the profession (Flinkman et al., 2008; Simon et al., 2004; Simon et al., 2010; van der Heijden et al., 2009).

Definition of work-family conflict

The concept of work-family conflict (WFC) has closely related forms to inter-role conflict. Inter-role conflict has been viewed as a form of conflict (Greenhaus & Beutell, 1985) has been defined work-family conflict as “a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. That is participation in the work (family) role

is made more difficult by virtue of participation in the family (work) role” (p.77); this focused on a negative spillover perspective, which indicates a negative impact of one domain on the other domain. This incompatibility between two roles is based on three different forms of work–home conflicts: 1) Time-based WFC refers to problems with the allocation of available time to both domains, e.g., overtime versus family activities; 2) Strain-based WFC: this conflict could take place when the fulfillment of one role causes strain that spills over into the other domain, e.g., fatigue based on heavy workload at work eventually causes the abandonment of family activities; 3) Behavior-based WFC: this was described to the difficulties in changing behavior between the two domains (Simon et al., 2004).

Work-family conflict had been classified to the type of stressor and this conflict could be occurred when pressures in one role are incompatible with pressures in another role (Grant-Vallone & Donaldson, 2001). Similarly, Frone et al. (1992) defined work-family conflict as a degree to which an employee’s job interferes with his/her family life; furthermore, they stated that both work and family roles exemplify as a core components of adult life, disablements to stability both work- and family-role are likely to be experienced as stressful.

Additionally, Work-family conflict occurs when obligations in one domain cannot be met because of responsibilities in the other domain(Simon et al., 2004). The earlier research suggests that the tension between work and family roles can become a source of stress (Thomas & Ganster, 1995) which impact on psychological and physical well-being (Allen et al., 2000; Frone et al., 1997). Numerous studies have pointed out the employee who exposed to this stressor agents

could effect on absenteeism, reduced job satisfaction, and leading to turnover (Ganster & Schaubroeck, 1991).

Therefore, the concept of using in current study is focused on the incompatibility between two roles (family role and work role) of nurses. Evidences reveal that nurses who reported demands of work are incompatible with a fulfilling home life are likely leaving nursing (Morrell, 2005). Thus, the operational definition of work-family conflict was defined as nurse' perception toward the degree of nursing career interferes with nurses' family life or family responsibility.

Research related work-family conflict

Work-family is also important for the nursing professions causes of often resulting in strong leaving intentions from nursing career (Simon et al., 2004). Simon et al. (2004) analyzed the relationship between WFC and intention to leave the nursing profession among 27,603 registered nurses in eight European countries. The results reveal that the work-family conflict was clearly associated with the frequency of considering leaving the nursing profession. Bivariate analysis indicates an obvious association of WFC with the proportion of participants frequently considering leaving the nursing profession in all countries except Slovakia. In Germany, found that 48% of the group with very high WFC scores had thought to this frequently.

Simon et al. (2010) conducted a secondary analysis of data of the German part of the European Nurses' Early Exit Study (2003) among 2119 registered nurses to determine association between selected variables with the intention to leave the profession. The results reveal intentions to leave the profession were strongly associated with the work/home interface.

The study of Haar (2008) had been conducted to examine the direct effects of WFC on job satisfaction among 100 New Zealand employees; the results reveal work family conflict had a significant negative correlated with job satisfaction ($r = -0.42, p < .01$). In the model, WFC was significantly related to job satisfaction ($\beta = -.33, p < .01$), moreover it can be seen that WFC accounted for 8% ($p < .01$) of variance for job satisfaction.

van der Heijden et al. (2009) examined the potential predictors of nurses' intention to leave the nursing profession among 1,187 registered nurses. The findings reveal high work-to-home interference results in lower job satisfaction, which, in turn, predicts nurses' intention to leave the profession one year afterwards. The work-to-home interference had a significant negative associated with job satisfaction ($r = -0.21, p < .01$) and positive associated with intention to leave the profession ($r = 0.17, p < .01$). In addition, work-to-home interference showed the negative relationship with job satisfaction ($\beta = -0.16, p < 0.001$). Besides this indirect relationship, through job satisfaction, work-to-home interference also showed a direct relationship with occupational turnover intention ($\beta = 0.11, p < 0.001$), indicating the importance of the interference of work with the home situation for nurses' intention to leave nursing profession.

Wang et al. (2012) conducted cross-sectional study to investigate the relationship between work-family conflict and burnout among 1,332 Chinese female nurses. Pearson correlation was performed for testing the relationship between work-family conflict and burnout. The results reveal WFC were significantly correlated with dimensions of burnout (emotional exhaustion ($r = 0.48, p < .01$); cynicism ($r = 0.34, p < .01$). In addition, FWC were significantly correlated with dimensions of

burnout (emotional exhaustion ($r = 0.21$, $p < .01$); cynicism ($r = 0.35$, $p < .01$). The finding indicated that work interfering family conflict and family interfering work conflict were positively related with burnout.

Cortese et al. (2010) conducted the survey on 351 professional nurses working in North Italian hospital. Correlation analysis used to examine the correlation among variable. The finding demonstrated that job satisfaction correlated negatively with WFC ($r = -0.40$; $p < 0.01$). The empirical model of the relationship between variables was investigated by means of path analysis. In the model, result reveals WFC decreased the perception of job satisfaction ($\beta -0.13$; SE 0.18; t-value -3.07). The finding indicated that WFC shows the importance role (predictor) on job satisfaction.

These evidences can conclude that work-family conflict has negative relationship with job satisfaction, and has positive relationship with burnout and intention to leave nursing profession.

Measurement of work-family conflict

The instruments which used to measure work-family conflict were variety developed. From searching the existing instrument using to measure work-family conflict, there are four instruments that will present as the followings:

The work and family role conflict scale was developed by Grant-Vallone and Donaldson (2001) based on literature within the area. This scale had been used to examine the effects of work-family conflict on the well-being of a diverse sample of 342 non-professional employees from the greater Los Angeles area. The subject participated in two waves of data collection (6 months apart). Four items were used as a global measure of work and family role conflict. A 4-point response category ranged

from strongly agree to strongly disagree was used for these items. The 4-item measure of work and family role conflict showed the reliability at time 1 = .73, and time 2 = .72. To validate this scale, the relationship between the current 4-item measure and a validated 5-item measure of work-family conflict (Netemeyer et al., 1996) was examined with another data set, finding showed that these two measures were found to correlate ($r = .65, p < .001$) (Grant-Vallone & Donaldson, 2001).

The Work-Family Conflict (WFC) scale has been developed by Netemeyer et al. (1996) based on the literature in the area. They conducted factor analysis in scale development and validation. The data were collected in groups including 182 elementary and high-school teachers and administrators; 162 small business owners; and 186 real estate sales peoples. The scale comprised of 5 items with response in 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The scale scores range from 5 to 25, with high score indicates a high level of perceived conflict between work and family and low score will indicate a low level of perceived conflict between work and family. Estimates of construct validity were presented by rating scales to 16 other on-job (e.g., organizational commitment, job satisfaction, job burnout, job tension, intention to leave organization, search for another job, etc.) and off-job (e.g., physical symptoms, depression, etc.) construct. The scale showed adequate levels of internal consistency (construct reliability (ranged from .88 to .89), coefficient alpha (ranged from .88 to .89), and average variance extracted estimates (ranged from .59 to .60); dimensionality, and discriminant validity across three samples. Psychometric properties of the instrument were confirmed by the study of Battistelli, Portoghese, Galletta, and Pohl (2013) that aim to extend research on nurse turnover. In this study, reliability of the scale was supported by a Cronbach's alpha of

0.91. Validity has been tested by principle components analysis using varimax rotation revealed one factor accounting for 69% of the variance for eigen-values greater 1.00. Furthermore, the other study, the longitudinal study among 1,187 nurses was examined work-home interference for nurses' intent to leave nursing. Reliability of the scale showed .85 (van der Heijden et al., 2007).

The Inventory of Work-Family Conflict had been developed by Greenhaus et al. (2000), this scale was modified to use in the study of Haar (2008) for investigating the influence of work-family conflict on job outcome among 206 employees in New Zealand. This scale comprised of 6-items and the response on the scale are coded 1=strongly disagree, 5=strongly agree. Sample items are "My work schedule often conflicts with my family life" and "Because my work is demanding; at times I am irritable at home". Of the six items, only one item focused on work interference beyond family, that being "On the job, I have so much work to do that it takes away from my personal interests". This measure had been presented reliability on a Cronbach's alpha of .89, and overall of the measure has been well validated and shown to be a useful predictor of work-family conflict.

The Work-Family Conflict Scale (WFCS) was developed by Carlson, Kacmar, and Williams (1994). The WFCS measures conflict using three item scales for each of the six factors that make up the overall construct. The six factors of work-family conflict include time-based work interference with family, time-based family interference with work, strain-based work interference with family, strain-based family interference with work, behavior-based work interference with family, and behavior-based family interference with work. Sample of the study were utilized from three studies that utilized five different samples (N = 1211) to construct and validate a

multidimensional measure of work–family conflict. Factor scores were calculated using the mean of two or more of the three items for each factor. Factor scores ranged from 1 to 6, a Likert scale ranging between strongly disagree (1) and strongly agree (6). Higher scores indicate more work–family conflict. The six factor scores were then summed to calculate an overall score. The three studies assessed the content adequacy, dimensionality, reliability, factor structure invariance, and construct validity of the scale. The reliability was confirmed by (Ramasundaram & Ramasundaram, 2011); to assess the work-to-family (work interference with family) and family-to-work conflict (family interference with work) among 755 women both are married or unmarried employed in the IT industry in Chennai city, India; Cronbach's alpha of the scale was .92.

According to review the existing instrument, it has been shown that the Work-family conflict (WFC) which developed by Netemeyer, Boles, and McMurrian (1996) presented good in both reliability and validity ($\alpha = .91$). This scale had been used to study on intention to leave the nursing profession that showed the similar construct to this study. Therefore, this scale is selected to measure work-family conflict in this study.

In conclusion, this study work-family conflict refers to nurse's perception toward the degree of nursing career interferes with nurses' family life or family responsibility. Regarding the two important role of adult life: work and family role; the role expectations of these two domains are always incompatible that participation in one domain makes it difficult to participate in the other one. To examine this concept, the Work-Family Conflict (WFC) – Thai version modified from the WFC developed by Netemeyer, Boles, and McMurrian (1996), was used in the study. The

details of modification process and psychometric properties testing of the instrument are presented in Chapter III.

Nurse practice environment

As depicted in most theoretical models of turnover intention, the structural characteristics of the work environment is high interest in the theoretical emphasized in recent study. The characteristics of “Magnet hospital” was recognized as a success in attracting and retaining nurses (McClure, Poulin, Sovie, & Wandelt, 1983) that is well known in the key factors of the work environment influenced hospital success. Nurse work environment is recognized as an important issue in attracting and retaining professional nurses in hospital care. Furthermore, the empirical evidence demonstrated that the work environment was found to be a predominant factor affecting nurses’ decisions to leave their profession (Heinen et al., 2013).

Definition of nurse practice environment

Nurse practice environment could be defined in various ways. Hoffart & Woods (1996) defined nursing practice environment as “a system that supports registered nurse control over the delivery of nursing care and the environment in which care is delivered” (p. 354). Furthermore, Sleutel (2000) described the definitions of practice environment as “a set of concrete or abstract psychological features, such as job characteristics, autonomy, and promotion opportunities perceived by job incumbents who compare these perceptions against a set of standards, values, or needs” (p. 55). Nurse practice environment could refer to the organizational characteristics of a work setting that facilitate or constrain professional nursing practice (Lake, 2002). In addition, the organization characteristic has specify on 5 domain, each aspect of the PES-NWI were named and defined, the Nurse

Participation in Hospital Affairs subscale, Lake stated that, “Nurses were involved in hospital and nursing department affairs (internal governance, policy decision, and committees), had opportunities for advancement, communicated openly with a responsive nursing administration, and acknowledge a powerful, visible, and accessible nurse executive” (p. 181). The Nursing Foundations for Quality of Care subscale, Lake described that, “A high standard of patient care includes a pervasive nursing philosophy, a nursing (rather than a medical) model of care, and nurses’ clinical competence. Quality was assured by a formal quality assurance program, as well as by cultivation of new staff and continuing education for all staff. Several indicators of a nursing model of care includes continuity of nursing care and the use of nursing diagnoses and nursing care plans” (p. 181,p. 182). The Nurse Manager Ability, Leadership, and Support of Nurses subscale, Lake described key qualities of a nurse manager as “being a good manager and leader , the nurse manager should support the nurse when there was a conflict with a physician, when nurses made mistakes, and by praising and recognizing a job well done” (p. 182). The Staffing and Resource Adequacy subscale, Lake defined as “to having enough nurses to provide quality patient care were being able to spend time with patients and being able to discuss patient care problems with other nurses” (p. 182). In defining the Collegial Nurse-Physician Relations subscale, Lake noted that “subscale was characterized by the positive working relationships between nurses and physicians” (p. 182).

Estabrooks et al. (2002) defined nursing practice environment as “a set of workplace features that, when present, enable nurses to demonstrate professional practice characterized by decision-making autonomy, clarity of mission, and organizational responsiveness” (p. 265). Additionally, The American Association of

Colleges of Nursing (AACN) (2002) identify hallmarks of the professional nursing practice environment as a comprehensive set of environmental characteristics that support professional nurses to practice to their full potential. Hallmarks are present that: (1) manifest a philosophy of clinical care emphasizing quality, safety, interdisciplinary collaboration, continuity of care, and professional accountability, (2) recognize contributions of nurses' knowledge and expertise to clinical care quality and patient outcomes, (3) promote executive level nursing leadership, (4) empower nurses' participation in clinical decision-making and organization of clinical care systems, (5) maintain clinical advancement programs based on education, certification, and advanced preparation, (6) demonstrate professional development support for nurses, (7) create collaborative relationships among members of the health care provider team, and (8) utilize technological advances in clinical care and information systems (p. 298-300)

In summarized, the aim of this study is to explore nurses' perspective nursing practice environment that could present the characteristic of magnet hospital which significantly in nurses retention, thus, this study will use the theoretical definition proposed by Lake (2002) because its construct was demonstrated on the score of nurses in magnet hospital that recognized as successful in attracting and retaining nurses. The present study, a nursing practice environment is defined as the organizational characteristics of a work setting that support nurses in delivering nursing care and facilitate or constrain in professional nursing practice. These traits or indicators of a work setting include nurse participation in hospital affairs; nursing foundations for the quality of care; nurse manager ability, leadership, and support of nurses; adequacy of staffing and resources; and collegial nurse-physician relations.

Research related nurse practice environment

Heinen et al. (2013) conducted a multi-country, multi-center, cross-sectional analysis of survey data among 23,159 nurses working on surgical and medical units in ten European countries that participated in the RN4Cast study. The findings reveal factors associated with intention to leave the profession at European level were nurse-physician relationship (OR 0.86; 95% CI 0.79-0.93), leadership (OR 0.78; 95% CI 0.70-0.86), participation in hospital affairs (0.68; 95% CI 0.61-0.76), older age (OR 1.13; 95% CI 1.07-1.20), female gender (OR 0.67; 95% CI 0.55-0.80), working fulltime (OR 0.76; 95% CI 0.66-0.86) and burnout (OR 2.02; 95% CI 1.91-2.14).

Manojlovich (2005) investigates direct and indirect relationships among the practice environment, nurse-physician (RN-MD) communication, and job satisfaction among 500 hospital nurses throughout Michigan. The findings reveal practice environment were highly correlated with job satisfaction ($r = 0.68, p < .01$). Regression analysis showed the practice environment was a significant predictor of job satisfaction ($\beta = .39, t\text{-value} = 7.67, R^2 = 0.61$).

Friese (2005) examine practice environments and outcomes of nurses working in oncology units or Magnet hospitals. 1,956 RNs, of whom 305 worked in oncology units, were sample in the study. The findings reveal emotional exhaustion was significantly lower among oncology nurses working in Magnet hospitals. Scores on the Collegial Nurse-Physician Relations subscale were highest among oncology nurses. Outcomes were associated with Practice Environment Scale of the Nursing Work Index scores and Magnet status. The results of the logistic regression model show that nurses who responded favorably on the Nurse Manager Ability, Leadership

and Support of Nurses ($\beta = -0.24, p < 0.01$; OR 0.79; 95% CI -0.38, -0.11); Staffing and Resource Adequacy ($\beta = -1.17, p < 0.01$; OR 0.31; 95% CI -1.37, -0.98); and Collegial Nurse-Physician Relations ($\beta = -0.21, p < 0.01$; OR 0.81; 95% CI -0.37, -0.06) subscales were far less likely to have high emotional exhaustion. In addition, nurses who responded favorably on the Nurse Manager Ability, Leadership and Support of Nurses ($\beta = -0.81, p < 0.01$; OR 0.44; 95% CI -1.01, -0.61); Staffing and Resource Adequacy ($\beta = -1.55, p < 0.01$; OR 0.21; 95% CI -1.74, -1.36); and Collegial Nurse-Physician Relations ($\beta = -0.25, p < 0.01$; OR 0.78; 95% CI -0.42, -0.07) subscales were far less likely to have high job dissatisfaction. Higher scores on the Staffing and Resource Adequacy subscale were a strong and significant predictor for all three outcomes. Oncology nurses with adequate staffing and resources were 80% less likely to report emotional exhaustion, 84% less likely to have job dissatisfaction, and seven times more likely to report high-quality care ($p < 0.01$). Nurse manager ability was only a significant predictor for job dissatisfaction ($p < 0.01$).

Intention to leave nursing profession was found to be highly correlated with perceptions of a deteriorated work environment which including unsatisfactory salary (accounted for 13.70% of variance), lack of development opportunities for professional growth (accounted for 8.20% of variance), and restricted professional autonomy (accounted for 7.96% of variance) (Fochsen et al., 2005).

O'Brien-Pallas, Duffield, and Hayes (2006) have shown that nurses who left the profession rated environment as influencing factors which included quality of care as a result of lack of resources and involvement in policy development as high indicators in their decision to leave the nursing profession.

Nurse work environments have been correlated with various nurse job outcomes, including higher job satisfaction. In addition, it also lower turnover rate (Aiken et al., 2002). Likewise, Irvine & Evans (1995) observed that work environment characteristics, such as leadership, supervisory relations, and participation, were related to job satisfaction. Moreover, job satisfaction was negatively related to turnover intentions. The NEXT study (van der Heijden et al., 2007) has been shown that unsupportive work environment resulting in lower occupational commitment and job satisfaction, and predicted nurse intention to leave the profession. (Van Bogaert et al., 2010) has been investigate the impacts of work environment on Belgian nurses' job outcomes and found that hospital management and organizational support were significant predictors of nurse job satisfaction.

These literatures can be hypothesized that nurse work environment which is supportive environment has direct positive relationship with job satisfaction and professional commitment, and has negative direct relationship with intention to leave nursing profession.

Measurement of nurse practice environment

The instruments which used to measure nursing practice environment were variety developed for assessing their practice environment. From searching the existing instrument using to measure nursing practice environment, there are four instruments that will present as the followings:

The Nursing Work Index (NWI) was developed by (Kramer & Hafner, 1989). This is the early instrument utilizing to measure the attributes of an excellent staff nurse work environment. They used the work environment characteristics reported by nursing representatives from 41 magnet hospitals to develop this index.

This index consisted of 65 items and identify the attribute as nurses autonomy, control over practice, presence of collaborative nurse-physician relation that had developed in the purpose to study hospital organizational characteristics, and used to identify work values related to nursing job satisfaction, perceived productivity, and perceptions of an environment conducive to quality nursing care (Kramer & Schmalenberg, 2004). For each item, nurses responded on a 4-point Likert scale. The criterion validity was addressed by a sample of nurses from magnet and non-magnet hospitals that present positive correlations between hospital level job satisfaction and the past year's turnover rate ($r = .95$), and between individual level perceived productivity and performance evaluation ($r = .17$). Internal alpha reliability coefficients (Cronbach's) for each subscale ranged from .89 to .93 (Kramer & Hafner, 1989). However, as a time passing, this tool was doubtful on its cutting edge and changing in the context. Additionally, many items on the NWI demonstrate a lack on commonly shared and understood definition, and also presence inconsistency regarding to the validity of the subscales (Kramer & Schmalenberg, 2004). Moreover, as quite long instrument-65 items is consuming time for respondents (Lake, 2002).

Later, Aiken, Smith, and Lake (1994) redesigned the NWI to create the Revised Nursing Work Index (NWI-R) for utilizing in assessing of Medicare mortality rates for 39 original magnet hospitals and 195 matched control hospitals. In this study, the result revealed that in magnet hospital presence significantly lower mortality rate and higher score on nurse autonomy, control over practice setting, and relationships with physicians. NWI-R is a 57 items which compose of 55 original NWI items and 2 additional items. This tool is consist of four subscales include autonomy, control over work environment, relationship with physicians, and

organizational support of care givers. In 2000, Aiken and Patricia conduct research to report on the development and utility of the NWI-R in measuring of professional nursing practice environments. This study nurses report on the presence of their current job which used to depict traits of a hospital or nursing unit. Findings reveal Cronbach's alpha was 0.96 for the entire NWI-R, for individual level ranged from .75 to .79, and .84 to .91 for nursing unit level. The validity of instrument was presented by its ability to differentiate between hospitals or nursing units with known organizational forms which were associated with better nurse and patient outcomes. Comparing NWI and NWI-R, it can distinct on its focus, NWI-R demonstrates the focusing on the presence of specific organizational traits, but NWI focus on nurse satisfaction and perceived productivity associated with these traits (Lake, 2007).

Lake (2002) had revised the NWI by conducting a secondary data analysis from Kramer and Hafner (1989) and Aiken et al. (2001) to measure the hospital nursing practice environment and rename to the Practice Environment Scale of the Nursing Work Index (PES-NWI) which composes of 31-item scales and defines in five subscales: nurse participation in hospital affairs (9 items), nursing foundation for quality of care (10 items), nurse manager ability, leadership, and support of nurses (5 items), staffing and resource adequacy (4 items), and collegial nurse-physician relations (3 items). In the scale-development, Lake had done conceptual analysis in the first stage, in the second stage exploratory factor analysis was used to identify subscales, in the third stage the individual- and hospital-level reliabilities of the subscales and the composite were examined. A factor analysis shows the Cronbach's alpha values for these five subscales and the entire scale were .71 to .84 and .82, respectively. In addition, the intraclass correlations of the five subscales and the entire

scale were .86 to .97 and .96, respectively. In the fourth stage the construct validity of the subscales and the composite were evaluated by comparing the scores of nurses in magnet and non-magnet hospital samples. Significant differences were found between these two groups; magnet hospitals reported higher scores on each subscale. This scale uses a four-point scale with responses ranging from 1 (strongly disagree) – 4 (strongly agree). The higher the total score, the more agreement with the magnet nursing practice environment. Recent studies have associated poorer scores on PES-NWI subscales to increases in nurses' intention to quit, increases in nurse: bed ratio and decreases in patient safety outcome (Lake & Friese, 2006; Spence Laschinger & Leiter, 2006). It is a reliable measure at nurse and hospital levels to investigate nursing practice environment related to magnet hospital characteristics. Its psychometric properties were established through homogeneity (e.g. internal consistency, intra-class correlation) and construct validity (e.g. factor analysis, known-group approach: higher mean scores in magnet hospitals compare to non-magnet hospitals). The five factors in the instrument explained 48% of the variance in the PES-NWI (Lake, 2002).

Recently, Erickson et al. (2004) use factor analysis to validate the Professional Practice Environment (Hasselhorn et al., 2003) scale on 849 nurses working in the acute care setting. This instrument was developed underpinning the concept of magnet hospitals. The PPE composed of 38-items that used to measure the level of positive regard nurses on their practice environment and identify the conflict resolution and inter-professional practice. Scores range from 1 (strongly disagree) to 4 (strongly agree). Findings reveal eight domains in professional clinical practice in the acute care setting that are: handling disagreement and conflict, internal work

motivation, control over practice, leadership and autonomy in clinical practice, staff relationship with physicians, teamwork, cultural sensitivity, and communication about patients. Although the PPE is described as a theoretically grounded measurement, there is no theory specifically described to support the instrument. Cronbach's alpha for the 38 items PPE scale = .93 with subscale alpha ranges of .78 - .88. It describes the benefit of PPE as regarding the practice environment beyond the original magnet characteristics to also conclude areas such as conflict work motivation and culture sensitivity.

When we analyze all of these existing instrument that used to measure nursing practice environment, it can conclude that the NWI, although is the early instrument, it demonstrated a lack on commonly shared and understood definition, and also presence inconsistency regarding to the validity of the subscales (Kramer & Schmalenberg, 2004). And NWI-R was presented in high reliability but it used to depict traits of a hospital or nursing unit which were associated with better nurse and patient outcomes. The other instrument, PPE was used to assess professional clinical practice in the acute care setting, although the PPE is described as a theoretically grounded measurement, there is no theory specifically described to support the instrument.

In PES-NWI (Lake, 2002), when compare with the NWI instruments, it is more parsimonious and psychometrically sound with empirical subscales. In the scale development study, Lake used a theoretical framework based on sociology of organizations, occupations, and work to guide the analysis. Additionally, this instrument demonstrated its construct validity of the subscales by comparing the scores of nurses in magnet and non-magnet hospital samples. In term of magnet

hospitals are recognized as those successfully demonstrating in attracting and retaining nurses in which the nurses' professional practice environment is characterized by professional autonomy, control over nursing practice, adequacy of staffing, support management, and effective interdisciplinary relationships (Goode et al., 2005). The nursing practice environments of magnet hospitals positively contributed to hospital outcomes in both patients and nurses such as lower mortality, higher job satisfaction and lower turnover rate (Aiken et al., 2002; Upenieks, 2003). It is obviously beneficial for hospitals to foster a magnet work environment for the practice of nursing because nurse retention and intention to leave were significantly correlated with magnet work environment (Wang et al., 2012), thus, the examination of the nursing practice environments based on magnet hospital traits could provide insights into the development of an optimal nursing practice environment in Thai context in recruiting and maintain qualified nurses. Therefore, the PES-NWI is an appropriate instrument for measuring nurse practice environment with its indicating high psychometric properties.

In conclusion, this study nurse practice environment refers the organizational characteristics of a work setting that support nurses in delivering nursing care and facilitate or constrain in professional nursing practice. These traits or indicators of a work setting include nurse participation in hospital affairs; nursing foundations for the quality of care; nurse manager ability, leadership, and support of nurses; adequacy of staffing and resources; and collegial nurse-physician relations. To examine this concept, the Practice Environment Scale of the Nursing Work Index (PES-NWI) – Thai version modified from the PES-NWI' Lake (2002) was used in the

study. The details of modification process and psychometric properties testing of the instrument are presented in Chapter III.

Employment opportunity

The perception of alternatives employment opportunities have been highlighted on the impact of alternative employment opportunities in the labor market on the intention to leave the profession. The evidence showed that the plentiful alternative employment opportunities in the job market positively predicted nurses' intentions to leave the profession (Li et al., 2013).

There has been a growing recognition of the need for understanding the role of perceived employment opportunity in the workforce context (Bauer, Maertz, Dolen, & Campion, 1998). The availability of other employment opportunities shows significantly predicted nurses' intention to leave the nursing profession (Li et al., 2013). Document showed that nurses in 'locked-in' situations (areas with high unemployment rates and a lack of alternative jobs) tended to stay in their current profession. In contrast, nurses who reported that other employment opportunities were readily available had relatively higher intentions to leave the profession (Li et al., 2013). Therefore, the perception of employment opportunity is recognized to be a one factor affecting on intention to leave nursing profession as well as the others.

Definition of employment opportunity

The role of employment opportunity has been discussed as recurrent theme in the turnover literature by economics which accepted as one predictor of intention to leave (Irvine & Evans, 1995; Kalleberg & Sorensen, 1979). The view of the economic literature has been shown that when job markets are tight (jobs are more plentiful), one would expect to quit higher than when job markets are loose (few jobs

are available) (Ehrenberg & Smith, 1982). There were traditionally reported of the economic downturn in the early 1990s in the US and UK, there are fewer alternative options in the labor market in times of economic recession. It has been consider as a factor reducing job mobility, keeping nurses in jobs and postponing career breaks (Buchan, 1994). This could be hypothesized that turnover is influenced through economic-labor market factors (Moblely et al., 1979).

Earlier in the literature, March and Simon (1958) proposed that unemployment and vacancy rate were useful indicators of the number of alternative job opportunities. Furthermore, term of urbanization or city size was also employed to describe as economic-labor market factor because it was assumed that big city can offer more opportunities to work outside nursing that could be make nurses consider to leave their career (Simon et al., 2010). According to the previous literatures we found that there were various ways to identify this factor, e.g. unemployment rate, vacancy rate, urbanization, employment opportunity (Ehrenberg & Smith, 1982; Mobley et al., 1979; Price, 2001; Seo et al., 2004; Simon et al., 2010). However, there are documents supported that both perceived alternative employment opportunities and labor market conditions are positively associated with turnover (Hulin, Roznowski, & Hachiya, 1985; Steel & Griffeth, 1989), and have a significant relationship with hospital nurses' intention to leave nursing profession (Seo et al., 2004; Simon et al., 2010). The empirical document proved that increase in employment opportunity or chances on job market can contribute the impact on intention to leave nursing profession. The study of Li (2012) has been supported that the employment opportunity was significantly predicted an elevated risk of intention to leave nursing profession. The study showed that nurses underneath "locked-in"

situation (lack of employment opportunity in the market) had to stay at their current profession. In contrast, nurses who reported easily available employment opportunity relative highest in intention to leave.

To identify this factor, several researchers had been expressed their ideas in the same tone, but used many different terms to present this factor, for example, “job market” (Price, 2001), “availability of alternative” (Mobley et al., 1978), “employment opportunity” (Price & Mueller, 1981), and job opportunity (Seo et al., 2004). In order to make more clearly understanding, this study uses the term “employment opportunity” for represent this factor. Regarding literatures, there are various definitions to describe employment opportunity. Price (2001) has been referred the term of job market as employment opportunity that an employee is free to seek employment elsewhere. In addition, the term “job opportunity” had been used to described, it was defined as availability of alternative jobs in the environment which represents the external labor market conditions (Seo et al., 2004).

Furthermore, several literatures describe employment opportunity to the perception of the employee toward employment availability in job market condition. Price and Mueller (1986) described employment opportunity as an individual’s perception of the availability of alternative jobs in the organization’s environment. The employees could perceive more alternative job opportunities when the job market is tight and less alternative job opportunities when job market is loose (Khatri, Budhwar, & Fern, 1998). This perception is an unable control factor because it closely connected with the external environment. Similarly, in the model of March and Simon (1958) suggested that certain factors such as dissatisfaction could push the employee to look for alternative employment whereas other factors such as the

perception of attractive job opportunities could pull the employee to consider alternative employment. Likewise, Rahman, Naqvi, and Ramay (2008) described the relation between external market and intention to leave that when the organization fail to retain the employees, they start searching for alternative job based on their perceived job opportunities in the job market (Mano-Negrin & Tzafirir, 2004).

Regarding Thai health policies that aimed to promote Thailand to be a medical hub in Asia, this could increase number of patients come to receive care in Thailand. Moreover, these policies make supplementary expansion of the private and commercialize medical service such as spa and cosmetic care. Thailand's healthcare industry gets the strong support from the Royal Thai government that makes the country becomes Asia's center for health treatments and attracting patients from around the globe seeking a wide range of top-quality cosmetic and medical services (Department of International Trade Promotion, 2015). This resulted in a huge opportunity in the job market that could attract nurses to work in the other career.

Moreover, in the near future, Thailand will face with a big challenge from being the member in ASEAN Economic Community (Stordeur et al., 2007) by 2015. The AEC will transform ASEAN into a region with free movement of goods, services, investment, skilled labor, and free flow of capital. Inevitably, nursing profession has been called for completion of Mutual Recognition Arrangements (MRA) for qualifications in nursing professional services in order to facilitate free mobility of nursing professionals within ASEAN (ASEAN Secretariat, 2012). Regarding this challenge, nurses may perceive more alternative job opportunities or chances on job market that could make the impact on intention to leave nursing profession among nurse.

This is important in term policy perspective, in order to understand whether turnover associated to tightness in job market in which nurses personnel were shortfall in plentiful job alternative environment. This could be summarized that such market conditions encourage a strong perception of alternative job availability which could be affected on the decision to leave among nurses. Therefore, this study defined employment opportunity as nurses' perception of the availability of alternative jobs in the labor market both national and international. Increasing opportunity for alternative employment, either internal or external nursing career, tend to impact on the decision to leave the profession.

Research related employment opportunity

Li et al. (2013) conducted one-year longitudinal study among registered female nurses working in hospitals in eight countries (Germany, Italy, France, the Netherlands, Belgium, Poland, Slovakia, and China) to examine the predictive contribution of a broad spectrum of psychosocial work factors, including job strain, effort-reward imbalance, and alternative employment opportunity, to the probability of intention to leave the nursing profession. 7,990 nurses were included in the prospective follow-up analysis. Multilevel logistic regression modeling was used to analyze the data. Results showed that poor promotion reward (OR 0.83; 95% CI 1.05-1.52, $p < .05$) and good employment opportunity (OR 1.26; 95% CI 0.76-0.91, $p < .001$) at baseline were independently predicted intention to leave the nursing profession at follow-up.

Li (2012) examined the impact of two established models of psychosocial stress at work, together with job alternatives in labor market (employment opportunity) and individual resources, on the newly developed intention to leave the

nursing profession by using a prospective design of an international comparative study, the Nurses' Early Exit (NEXT) Study. 7990 registered female nurses working in hospitals from eight countries (Germany, Italy, France, the Netherlands, Belgium, Poland, Slovakia, and China) were recruited in the study. Results reveal the employment opportunity is significantly predicted an elevated risk of intention to leave nursing profession (OR 1.25; 95% CI 1.04, 1.50, $p < .05$).

Bloom, Alexander, and Nuchols (1992) had been investigated an important determinant of the voluntary turnover rate among registered nurses from 435 hospitals in the US by using multiple regression techniques in analyzing. Results show that the probability of turnover was related to the availability of alternative employment opportunities ($\beta = -0.10$, $p < .05$).

These can be hypothesized that alternative employment opportunities has positive relationship with intention to leave nursing profession.

Measurement of employment opportunity

Regarding literature review, there are many ways to measure employment opportunity as present in the following:

Price (2001) has been developed two items to measure the nurses' alternative employment opportunity in labor market. Price measured job opportunities by using the employee's perception of job opportunities. One item asked to local job opportunity that is a likelihood of obtaining jobs in local area as good, worse, or better than current job ("How easy or difficult would it be for you to find a job with another employer in the local job market in which you work or live that is as good as the one you have now?") And another item asked to non-local job opportunity that is a likelihood of obtaining jobs in non-local area as good, worse or better than current job

(“How easy or difficult would it be for you to find a job with another employer outside the local job market in which you work or live that is as good as the one you have now?”) The response will be ranged from 1 to 6 (1=very difficult to 6=very easy). This scale has been used to studied relationships between market factor and intention to stay among 4,402 nurses nested in 51 metropolitan areas (MSA) and 9 non-MSA rural areas (Kovner, Brewer, Greene, & Fairchild, 2009). The reliability of this scale presented by Cronbach’ alpha = 0.92, 0.95 respectively.

Perceived employment opportunity scale was developed by Widerszal-Bazyl et al. (2008). This scale is single item that used to measure the nurses’ alternative employment opportunity in labor market which is a subjective measurement. This scale asked that “How do you see the potential opportunities for employment of nurses in your region?” The response were rated on a 5-point rating scale from “It is very difficult to get a job’ to “It is very easy to get a job”. It was developed to test the explanatory power of Demand-Control-Support model for intent to leave among 16,052 female nurses from six European countries who were participating in the Nurses’ Early Study (NEXT). In this study the single item of perceived employment opportunities showed convergent validity with the objective measure of employment possibilities that is unemployment rate of a given country, and the correlation appeared to be .97. This scale had been confirmed by investigating alternative employment opportunity in labor market on intention to leave the nursing profession among 7,990 registered female nurses working in hospitals from eight countries including Germany, Italy, France, Netherlands, Belgium, Poland, Slovakia, and China. Validity of the scale demonstrated influence the explanatory power in relation to intent to leave profession (Li, 2012).

Perceived Alternative Employment Opportunities (PAEO) scale is adapted from Mowday et al. (1984) were adapted to use in the study of (Khatri et al., 1998). This scale contained six items that asking about: (1) If I quit my current job, the chances that I would be able to find another job which is as good as, or better than my present one is high, (2) if I have to leave this job, I would have another job as good as this one within a month, (3) there is no doubt in my mind that I can find a job that is at least as good as the one I now have, (4) given my age, education, and the general economic condition, the chance of attaining a suitable position in some other organization is slim (reverse-coded), (5) the chance of finding another job that would be acceptable is high, and (6) it would be easy to find acceptable alternative employment. To respond on these items, the participants were asked to rate on 5-rating scale (strongly disagree = 1, neither agree nor disagree=3, strongly agree = 5). Total scores could range from 5 to 25 with higher scores indicating more intent to leave. This scale had been used as an antecedent to examine turnover intention in companies in Singapore (Khatri et al., 1998). The sample was 212 employees worked in manufacturing and services sectors in Singapore. The scale showed good reliability ($\alpha=.76$) and unidimensionality (single factor in the factor analysis).

As analyzing these instruments, the Perceived Alternative Employment Opportunities (PAEO) was used to test in manufacturing and services sectors in Singapore that the construct may be different from the aim of this study. The aim of this study is tended to measure employment opportunity either internal or external nursing career that could be impacted on the decision to leave the profession. Although, the job opportunity scale which developed by Price (2001) and the perceived employment opportunity scale (PEO) which developed by (Widerszal-

Bazyl et al., 2008) showed good psychometric properties for measuring in nurse population, all these instrument could not reflected to the aim of this study.

Focusing on the existing measures of employment opportunity, Price (2001) developed two items measure the nurses' perception of job opportunities in local and non-local job market. Another measurement is perceived employment opportunity scale which was developed by Widerszal-Bazyl, et al (2008). The tone of these instruments was mentioned on asking how easy or difficult in finding job in labor market. The most fundamental problem with single item measure were identified that measurement error averages out when individual scores are summed to obtain a total score (Nunnally & Bernstein, 1994), and a single item cannot fully represent a complex theoretical concept or any specific attribute (McIver & Carmines, 1981). Regarding this reason, it is questionable on the existing instrument that a single dimension was not sufficient to capture a complex such as the labor market. Therefore, to measure psychological attributes is required to use multi-item measures instead of a single item.

In conclusion, this study employment opportunity refers nurses' self-report of the availability of alternative jobs in the labor market both national and international. The most existing instruments presented as a single item which cannot fully represent a complex theoretical concept or any specific attribute (McIver & Carmines, 1981) to capture a complex such as the job market. Therefore, employment opportunity was developed by researcher to measure this construct.

The details of instrument development and psychometric properties testing of the instrument are presented in Chapter III.

Structural equation modeling (SEM) for analysis

Structural equation modeling (SEM) has been used to describe a large number of statistical models used to evaluate the validity of substantive theories with empirical data. SEM is a powerful statistical technique that combines measurement model or confirmatory factor analysis (CFA) and structural model into a simultaneous statistical test (Hoe, 2008). SEM used for specifying and estimating models of linear relationships among variables that may include both measured variables and latent variables which are hypothetical constructs cannot be directly measured (MacCallum & Austin, 2000). Furthermore, in contrast to traditional multivariate techniques, the SEM method explicitly takes measurement error into account when statistically analyzing data and incorporates both latent and observed variables.

SEM has a purpose for understanding the patterns of correlation/covariance among a set of variables, and explaining as much of their variance as possible with the model specified (Kline, 1998). Major applications of SEM include: path analysis, causal modeling, and covariance structure analysis. In general, SEM involves the evaluation of two models which compose of a measurement model and a structural or path model (Lei & Wu, 2007).

Structural or Path Model

Path analysis is a multivariate linear model or equations based on a diagram that provides a more effective and direct way of modeling mediation, indirect effects, and other complex relationship among variables. Path analysis can be considered a special case of SEM in which structural relations among observed variables are modeled; no latent variables are included in the model (Lei & Wu, 2007). Structural relations are hypotheses about directional influences or causal relations of multiple

variables (e.g., how independent variables affect dependent variables). Hence, path analysis is sometimes referred to as causal modeling. Because analyzing interrelations among variables is a major part of SEM and these interrelations are hypothesized to generate specific observed covariance (or correlation) patterns among the variables, SEM is also sometimes called covariance structure analysis. In SEM, a variable can serve as independent variable (called an *exogenous* variable) and dependent variable (called an *endogenous* variable) in a chain of causal hypotheses (Lei & Wu, 2007).

Measurement Model

The measurement model relates observed responses (indicators) to latent variables and sometimes to observed covariates (Skronka & Rabe-Hesketh, 2005). The measurement of latent variables originated from psychometric theories; it cannot be measured directly but are specified by responses to a number of observable variables (indicators). The measurement model in SEM is evaluated through confirmatory factor analysis (CFA). CFA is used to verify the factor structure of a set of observed variables by test the hypothesis that a relationship between the observed variables and their underlying latent construct(s) exists (Hoe, 2008). Once the measurement model has been specified, structural relations of the latent factors are then modeled essentially the same way as they are in path models. The combination of CFA models with structural path models on the latent constructs represents the general SEM framework in analyzing covariance structures (Lei & Wu, 2007).

Though the measurement model and structural model can be concurrently examined, the measurement model should be firstly tested before running the full model (Hoyle, 1995; Kline, 2005). According to Kline (2005) recommendation the measurement model is initially tested and only when the model has a good fit. After

that, the second step with running the structural model is conducted. Two or more alternative models are then compared in terms of "model fit," which measures the extent to which the covariance predicted by the model correspond to the observed covariance in the data. The issue of how the model is best represents the data reflects underlying theory, known as "model fit" need to be clarified to avoid making such error, therefore, a guideline for determining model fit of prospective structural equation model are described as the follow.

The acceptance statistical criteria utilized to evaluate the hypothesize model were:

Absolute fit indices

Absolute fit indices are provided the most fundamental indication of how well the proposed theory fits the data (Hooper, Coughlan, & Mullen, 2008). These indices are included Chi-square test, RMSEA, GFI, AGFI, the RMR and the SRMR.

The chi-square test (χ^2) functions as a statistical method for evaluating models fit and assesses magnitude of discrepancy between expected and observed covariance matrices (Hu & Bentler, 1999). It is non-significant of a level with a corresponding p value $> .05$, and preferably a value close to 1.00 is recommended for the hypothesized model that fit the data. Although the Chi-Squared test retains its popularity as a fit statistic, there exists a limitation in using. The Chi-Square statistic is an extremely sensitive statistical test to sample size especially if the samples are greater than 200 (Hoe, 2008). It shows that the χ^2 statistic nearly always rejects the model when large samples are used (Bentler & Bonnet, 1980; Hooper et

al., 2008). Due to the limited of using Chi-Square, there have alternative indices to assess model fit.

The normed fit chi-square (χ^2/df) is recommended for minimized the impact of sample size on the model Chi-square. This indices indicates a good fit when values less than 3 (Hu & Bentler, 1999; Kline, 2005).

Root Mean Square Error of Approximation (RMSEA) is related to residual in the model. RMSEA values range from 0 to 1 with a smaller RMSEA value indicating better model fit. RMSEA values between .05 and .08 indicated an adequate fit model. Acceptable model fit is indicated by an RMSEA value of 0.06 or less (Hu & Bentler, 1999).

The goodness-of-fit index (GFI) is a measure of the proportion of all variances and covariance accounted for by the model and compared the squared residuals from prediction with the actual data. It represents the overall degree of fit ranging from 0 (poor fit) to 1 (perfect fit). Traditionally, the cut-off point of 0.90 has been recommended for GFI. However, $GFI \geq .95$ is indicative of a good fit relative to the baseline model. GFI index is roughly analogous to the multiple R square in multiple regressions in that it represents the overall amount of the covariance among the observed variables that can be accounted for by the hypothesized model (Hair, Black, Babin, & Anderson, 2010; Hooper et al., 2008).

The adjusted goodness of fit index (AGFI) is an extension of GFI that is adjusted by the degree of freedom for the proposed model to the degree of freedom for the null model. Values for the AGFI also range between 0 and 1. AGFI greater than .90 is indicative of a good fit relative to the baseline model or .80 may be considered as an acceptable fit (Hair et al., 2010; Hu & Bentler, 1999).

The Root Mean Square Residual (RMR) and Standardized Root Mean Square Residual (SRMR) are the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model (Hooper et al., 2008). The smaller RMR indicated the better the model fit. The RMR value is smaller than 0.05; indicates good fit. The SRMR is standardized version of the RMR. The SRMR indicates a good fit with values of <0.09 (Hu & Bentler, 1999).

Incremental fit indices (comparative fit indices)

Incremental fit indices measure the proportionate improvement in fit by comparing the chi-square value to a baseline model. A null model is a model tested that specifies that all measured variables are uncorrelated (there are no latent variables) (McDonald & Ho, 2002).

Normed-fit index (NFI): the values for this statistic range between 0 and 1. NFI values between .90 and .95 are acceptable, and below .90 indicate a need to re-specify the model. $NFI \geq .95$ are indicated a good fit (Hu & Bentler, 1999).

Comparative Fit Index (CFI): The value for this statistic displays a range of 0-1 with values closer to 1 indicates a very good fit. A cut-off criterion of CFI was $\geq .90$, however, a value of $\geq .95$ is recommended as indicating of good fit (Hu & Bentler, 1999).

Parsimony fit indices

These fit indices are relative fit indices that are adjustments to most of the ones above. The adjustments are to penalize models that are less parsimonious, so that simpler theoretical processes are favored over more complex ones.

The *Parsimony Goodness of Fit Index (PGFI)* and the *Parsimony Normed Fit Index (PNFI)* are seriously penalize for model complexity which results

in parsimony fit index values that are considerably lower than other goodness of fit indices (Hooper et al., 2008). There is no commonly agreed-upon cutoff value for an acceptable model. However, (Mulaik et al., 1989) do note that it is possible to obtain parsimony fit indices within the .50 region while other goodness of fit indices achieves values over .90 (Mulaik et al., 1989). The *Akaike's Information Criterion (AIC)* or the *Consistent Version of AIC (CAIC)* which adjusts for sample size (Akaike, 1974). These statistics are generally used when comparing non-nested or non-hierarchical models estimated with the same data and indicates to the researcher which of the models is the most parsimonious. Smaller values suggest a good fitting (Hooper et al., 2008).

If model fit is acceptable, the parameter estimates were examined. The ratio of each parameter estimate to its standard error was distributed as a z statistic and was significant at the 0.05 level if its value exceeds 1.96 (Hoyle, 1995). The acceptance statistical criteria utilized to evaluate the hypothesize model in this study were (Hu & Bentler, 1999):

Measure	Threshold
χ^2/df	< 3 good; < 5 sometimes permissible
p-value for the model	> 0.05
CFI	≥ 0.95 great; ≥ 0.90 traditional acceptable
GFI	≥ 0.95 great; ≥ 0.90 traditional acceptable
AGFI	> 0.80
SRMR	< 0.09
RMSEA	< 0.05 good; 0.05 to 0.10 moderate; > 0.10 bad

In addition, confirmatory factor analysis can be used to estimate the reliability (R^2) and standardized validity coefficient (λ_s) of the measurement. An R^2

for an item above 0.40 provides evidence of acceptable reliability and a coefficient above 0.50 was considered acceptable validity (Bollen, 1989; Nunnally & Bernstein, 1994).



CHAPTER III

METHODOLOGY

This chapter describes the research design and methodology used for the study. The research design, population, sampling technique and sample selection, instrumentation, ethic approval, data collection and data analysis procedures are included in the detail.

Research design

This study had been used a cross-sectional survey design, in the aimed to examine the direct and the indirect relationship between the set of interested variables including job satisfaction, professional commitment, burnout, work-family conflict, nurse practice environment, and employment opportunity and intention to leave nursing profession.

Population and sample

According to Thailand Nursing and Midwifery Council (Boonjeam et al., 2010), target population in present study is totally 138,710 registered nurse in all parts of Thailand. This number of the population could be used to calculate the sample for this study. The participants were recruited from registered nurse working at governmental hospitals on all parts of Thailand including Bangkok Metropolitan, Central, Northern, Northeastern, and Southern regions. In public sector, there are many agencies providing health care service. The major portion of health service is controlled by the Ministry of Public Health. Other public sector agencies are distributed in the Ministry of Interior, the Ministry of Defense and the Ministry of University Affairs. In the Ministry of Public Health, there are three types of hospitals

that are: (1) community hospitals (1-150 beds), (2) general hospitals (200-500 beds), and (3) regional hospitals and medical centers (500-1500 beds providing both service and education). The community hospitals and other public agencies with less than 100 beds provide health services at the secondary care level that focus on health promotion, disease prevention, and simple curative care. The tertiary care level focuses more on treatment of the disease, rehabilitation, and the complications of curative care. Tertiary care facilities include general hospitals, regional and medical centers, and university hospitals (Bureau of Policy and Strategy et al., 2009). Hospitals in this study were selected from the Ministry of Public Health, the Ministry of Interior, the Ministry of Defense, and the Ministry of University Affairs.

Sample size calculation

Path analysis is a favored technique for the inference of multiple causal interrelationships that used to disentangle the complex relationships among variable and identify the most significant pathways involved in predicting an outcome (Lleras, 2005; Petraitis, Dunham, & Niewiarowski, 1996). The number of participants needed for the study was determinate on several factors included the power of study (typically .80), the effect size, and the alpha (typically .05). In addition to issues of power in the goal for minimizing type II errors, estimates may be unstable if small samples (< 100 considered small sample, 100-200 considered medium sample, and > 200 considered large sample). In the complicated models require large samples for stable estimates, therefore, Hair et al. (2006) recommended for a sound basic for estimate sample size is 200. To ensure an adequacy sample size that needed to be representative of a given population, an efficient method of determining the sample size was recommended by using (Krejcie & Morgan, 1970) formula as the following:

$$s = \frac{\chi^2 NP (1-P)}{d^2 (N-1) + \chi^2 P (1-P)}$$

s = required sample size

χ^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level of 95% (= 3.841)

N = the population size (= 138,710)

P = the population proportion (assumed to be 0.5 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05)

$$\begin{aligned} s &= \frac{(3.841) (138,710 \times 0.5) (1-0.5)}{(0.05)^2 (138,710-1) + (3.841 \times 0.50) (1-0.5)} \\ &= \frac{(3.841) (69,355) (0.5)}{(0.0025) (138,709) + (1.9205) (0.5)} \\ &= \frac{133,196.28}{347.74} \\ &= 383 \end{aligned}$$

In addition, 10% of the total sample size was added to take into account any attrition. Therefore, the current study should have a total sample size of 422 registered nurses in governmental hospital.

Sampling technique

Stratified two stages sampling procedure were used to select a probability sample of registered nurses who working in government hospitals and to maximize

the normal distribution of the sample. Furthermore, this sampling could be ensured all regions of the country were covered and that there were adequate sample size to represent intention to leave nursing profession among registered nurse who working in government hospitals. The process of sampling technique as follow:

First stage, the researcher calculated the estimated sample size availability from number of registered nurse population in Thailand by analyzing the proportion of nurses in each region of Thailand. Participants were selected by using proportional stratified sampling method to determine the number of subjects in each parts of Thailand based on their proportion in the population. Target population is totally 138,710 registered nurses in all parts of Thailand (Boonjeam et al., 2010), that divided into 5 regions as the following: Bangkok Metropolitan 22,725 (16.38%), Central 35,564 (25.64%), North 25,847 (18.63%), North-East 35,171 (25.36%), and South 19,403 (13.99%). By the sample calculation, the minimum number of sample are required 422; therefore approximately 69 nurses in Bangkok Metropolitan, 108 nurses in Central part, 79 nurses in Northern, 107 nurses in Northeastern, and 59 nurses in Southern were recruited to the study.

Second stage, the researcher estimated the availability of the setting. Regarding to empirical evidence, nurses at regional and general hospital presented high rate of resign (Srisuphan & Sawaengdee, 2012). Thus, the settings used in present study were governmental hospital which providing tertiary care including hospitals controlled by Ministry of Public Health, Ministry of University Affairs, Ministry of Interior, Ministry of Defense, and Bangkok Metropolitan Administration (Hebzbberg et al., 1959). The numbers of governmental hospitals that meet the criteria in the regions were 46 hospitals included Bangkok Metropolitan 12 hospitals, Central

12 hospitals, Northern 7 hospitals, Northeastern 8 hospitals, and Southern 7 hospitals (Bureau of Policy and Strategy et al., 2009). To determine the number of setting is based on their proportion in the setting. It is difficult to determine the actual rates of participation because researchers seldom report data on the size of the potential pool of participants. Based on sample proportion of each region in Thailand, Southern region required approximately 59 nurses for representative, thus one of 7 hospitals in Southern region was selected. For other region, numbers of sample are higher than the proportion of nurses in Southern region 0.5 to 1 time. Therefore, the following numbers of governmental hospitals were required: Bangkok Metropolitan 2 hospitals, Central 2 hospitals, Northern 2 hospitals, Northeastern 2 hospitals, and Southern 1 hospitals.

Then, simple random sampling without replacement procedure was used to recruit hospitals from each region. All hospital names had been put in a bucket and then their names had been pulled out. This procedure, each hospital has the same probability of being chosen at any stage during the sampling process. Finally, nine governmental hospitals were randomly selected: 2 hospitals from Bangkok Metropolitan (Ramathibodi Hospital and Somdejprapinklao Hospital), 2 hospitals from Central (Saraburi Hospital and Chonburi Hospital), 2 hospitals from Northern (Sawan Pracharak Hospital and Buddhachinaraj Hospital), 2 hospitals from Northeastern (Sappasit Prasong Hospital and Srisaket Hospital), and 1 hospital from Southern (Suratthani Hospital).

Next step, after obtaining formal approval of permission to collect the data from the hospital directors and nursing departments, nurse coordinators or head nurses of each hospitals distributed a survey packages to the sample whose gathering by

using the non-probability sampling approach. Participants in a non-probability sample were selected on the basis of their accessibility and by the purposive personal judgment of the nurse coordinators to participate in the study. Registered nurses who had willing to participate in the study and met the inclusion criteria were recruited. The sampling technique is depicted in Figure 3.



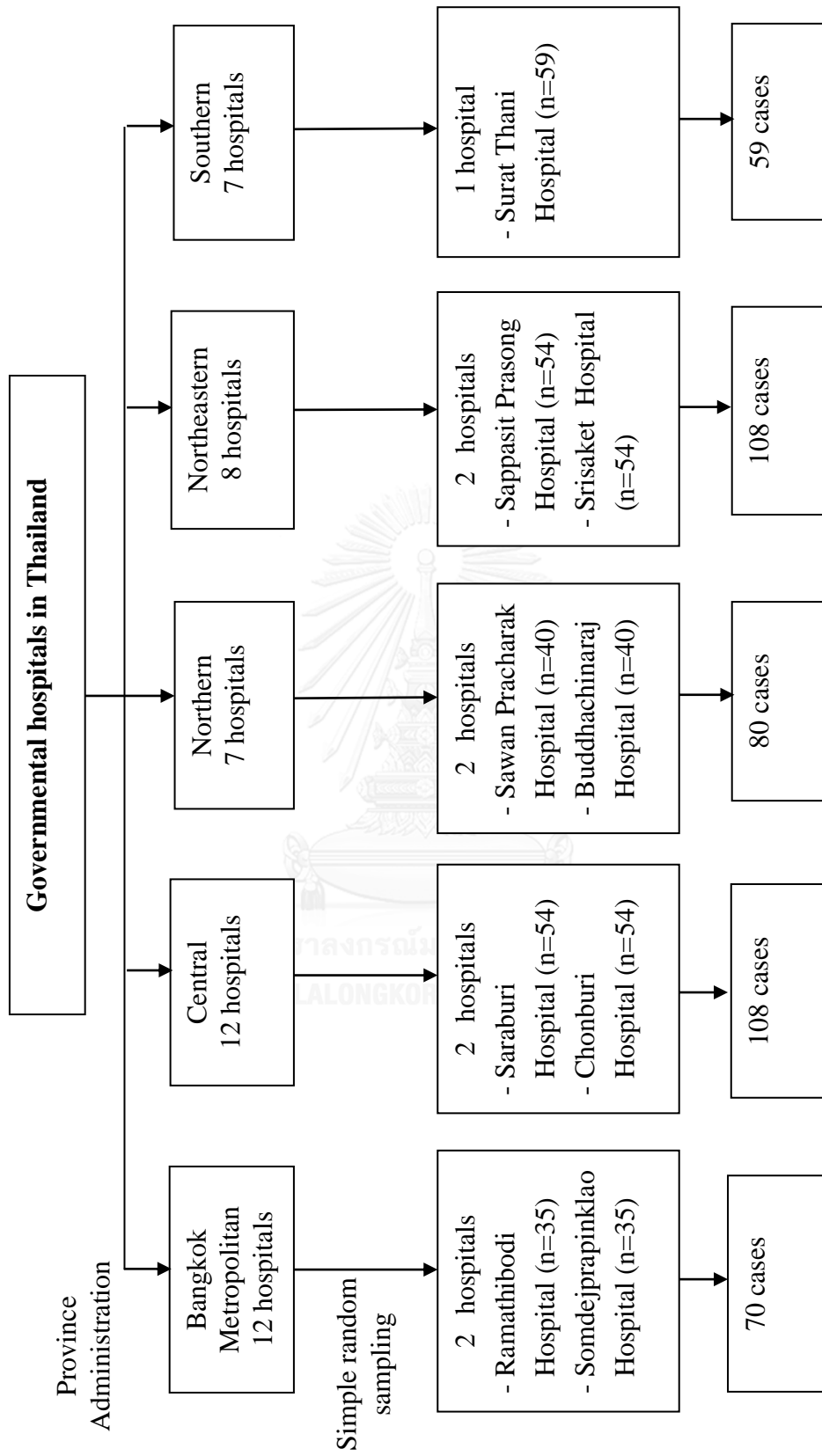


Figure 3 Sampling method of the study

Sample selection

An inclusion criterion is the required characteristics for each element of the sample, while exclusion criteria restrain or eliminate characteristics that might interfere with the explanation of the results (Burns & Grove, 2009). The inclusion criteria for this study are: 1) being registered nurses providing direct patient care, 2) working as a full time employment in governmental hospitals, and 3) work experienced greater than 3 month.

The exclusion criteria were: 1) nurses those are on maternity leave, extended sick leave or study leave, 2) nurses those are not provide directly care for the patient.

Instrumentation

Structured questionnaires were utilized to collect the data. The research instruments consist of 1) Job satisfaction questionnaire, 2) Professional commitment questionnaire, 3) Burnout questionnaire, 4) Work-family conflict questionnaire, 5) Nurse practice environment questionnaire, 6) Employment opportunity questionnaire, 7) Intention to leave nursing profession questionnaire, and 8) Demographic data.

The majority of the questionnaires is originally developed in English (Job satisfaction questionnaire, Professional commitment questionnaire, Burnout questionnaire, Work-family conflict questionnaire, Nurse practice environment questionnaire, and Intention to leave nursing profession questionnaire), and has been translated into Thai language and modified. Psychometric properties for testing translated instrument were required to perform. Only one instrument that is employment opportunity scale has been developed by researcher.

This section is addressing: 1) instrument development; 2) instrument translation procedures and modification; 3) items selection procedures of each instruments; and 4) content validity, construct validity, and reliability.

Instrument Development: Employment opportunity scale

Nurses perceived employment opportunity have been shown to add in understanding voluntary turnover as well as factors related to intention to leave nursing profession (Li, 2012; Li et al., 2013). Employment opportunity scale was developed based on the research-literatures review. In particular, the guidelines for scale development proposed by Burns and Grove (2009), and DeVellis (2003) were integrated and applied into this phase. In scale development procedures, there are consist of two phases: I) scale construction and II) psychometric testing.

Phase I: Scale construction

The process of constructing the employment opportunity scale (EOS) started with a broad review of literature on employment opportunity, the development of operational definitions, and review of existing instruments. Information from the literature reviewing was integrated for constructing item statements of the item pool. Each item was constructed by writing a short declarative statement reflecting employment opportunity. In order to cover the operational definition, items were constructed from an item pool which was expected to be representative the universal items of the scales. Initial pools of 5 items were generated based on the comprehensive review of the relevant literature on employment opportunity. The employment opportunity scale is a self-report of participant on the perception of the availability of alternative jobs in the labor market both national and international. There are 5 items of self-report with unidimension. The EOS was placed on a 5-point

Likert-scale in order to reflect the logical and semantic content of the concept of employment opportunity. Therefore, participants rate each item on a 5 points-Likert scale (strongly disagree = 1, disagree = 2, neither agree nor disagree=3, agree =4, strongly agree = 5). Reverse score on item 3 “You think that it is difficult to look for a good job in other areas or provinces.” The total scale could range from 5 to 25 by total sum score. And computing the mathematical mean across all items yielding a possible mean score range from 1 to 5 with higher mean scores indicating high employment opportunity.

Then, the content validity was established by a panel of five experts specializing in nursing administration area. These experts were rigorously chosen in accordance with established criteria and represented excellence in the nursing administrative field. Therefore, the qualifications of the expert for validating research instrument are included as the follow.

The experts are professional nurse who work as nurse administrators in governmental hospital and/or private hospital and high experienced in research area of nursing administration, and graduated at least master degree in nursing administrative field.

Professional nurses with PhD in nursing and working in Thailand Nursing and Midwifery Council with highly experienced in nursing workforce research conducting and has work experienced in nursing administration.

Nurse instructors with PhD in nursing administrative field and experienced in research area of nursing administration.

The experts were instructed to rate each scale item in terms of its relevance to the underlying construct as the definition of the concepts represented.

The standard four-point CVI rating scale was used to evaluate the items for their content, construct and conceptual relevance. This 4-point rating scale is ordinal scale in order to avoid having a neutral and ambivalent midpoint, ranging from 1 (not relevant), 2 (somewhat relevant), 3 (quite relevant), 4 (highly relevant) (Davis, 1992; Polit & Beck, 2006). In addition, the experts were also invited to suggest revised wordings for any items that seemed ambiguous, unclear, or inappropriate by using open suggestions.

The content validity of the measure was based on the expert concurrence using the content validity index (CVI), calculated for category evaluation and item evaluation. The CVI was calculated based on the number of experts giving a rating of either 3 or 4, divided by the number of experts. Additionally, the experts were asked to clarify their reasons if they did not agree with any of the items in the EOS. This study, CVI calculations occur at both the item (I-CVI) and scale (S-CVI) levels (Polit & Beck, 2006). The acceptable score are equally or higher .80 (Polit, Beck, & Owen, 2007). In order to achieve the minimum criterion of S-CVI, The acceptable score are equally or higher .80 (Polit et al., 2007). The S-CVI for 5 items was 0.88, and I-CVI was ranging from 0.80-1.00 as presented in Table 3.

In the next step, item-analysis; item-total correlation was used to identify the best items for the construction of the 5 items-EOS. Regarding determining the minimum sample size for factor analysis, a ratio of 5-10 subjects per item was required to reduce sampling error (DeVellis, 2003; Nunnally & Bernstein, 1994). 207 nurses from 3 governmental hospitals were randomly selected from 12 hospitals in Bangkok Metropolitan. These hospitals are King Chulalongkorn Memorial Hospital, Nopparat Rajathanee Hospital, and Police General Hospital. After obtaining the

Intuitional Review Board's approvals of the study hospitals, all full time registered nurses were eligible and invited to participate in this study with exclusion of newly nurses employed less than three months, nurses those were on maternity leave, extended sick leave or study leave, and unwilling to participate in the study.

The item selection process and the precision of the items were examined using item-total correlation. The item-total correlation should be > 0.30 (DeVellis, 2003). In order to achieve these criterions, one item was deleted cause of item-total correlation was lower than 0.30 (item 3- "You think that it is difficult to look for a good job in other areas or provinces", item-total correlation = 0.10). Thus, the EOS contains 4 items representing the content domain.

Phase II: Psychometric testing

The psychometric testing phase comprised the validity and reliability test on the 4 items-EOS. This section consisted of two steps: construct validity and reliability.

Construct validity

Firstly, the field test study was conducted to test the scale's construct validity. Construct validity is the validity of theoretical involving building variables to be measured (Said, Badru, & Shahid, 2011). Confirmatory factor analysis (CFA) was utilized to assess construct validity in order to assess whether the chosen component solution fitted the data adequately. The significant loadings is greater than 0.30.

The acceptance statistical criteria utilized to evaluate the hypothesize model in this study were (Hu & Bentler, 1999):

Measure	Threshold
χ^2/df	< 3 good; < 5 sometimes permissible
p-value for the model	> 0.05
CFI	≥ 0.95 great; ≥ 0.90 traditional acceptable
GFI	≥ 0.95 great; ≥ 0.90 traditional acceptable
AGFI	> 0.80
SRMR	< 0.09
RMSEA	< 0.05 good; 0.05 to 0.10 moderate; > 0.10 bad

Factor analysis was conducted to examine factor loading for each item and the second-order confirmatory factor analysis (CFA) was tested of measurement model. The results showed that factor loading of all items ranging from 0.43 to 0.73 were statistically significant at .05 (Table 1).

Table 1 Factor loading and construct validity of Employment Opportunity Scale (n = 207)

Item	Mean	SD	Item Total Correlation	Standardized factor loading
1. Have a great opportunity to look for new job which is better than current one.	3.08	.98	.41	0.43
2. Employment opportunities for nurses are high.	4.00	.86	.32	0.43
3. The chance of finding another job that would be acceptable is high.	3.16	.84	.57	0.65
4. Employment opportunities for nurses to work aboard are high.	3.49	.99	.50	0.73

Results show that the relationships between employment opportunity by using Pearson's correlation found that indicators of employment opportunity had significant relationship ($p < .01$) and Pearson's correlation was 0.15 to 0.47. The highest correlation was EO4 ($r = .47$). The lowest was EO2 ($r = .15$). The test for overall significance of all correlations within a correlation matrix found that Bartlett's Test of Sphericity = 127.59 ($p = .000$; significant, meet criteria), which means correlation matrix significantly different from identity matrix and relevant to Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .693. It is close to 1.0, which means these variables high correlation and appropriate for confirmatory factor analysis (Shore et al., 1990) (see Table 2).

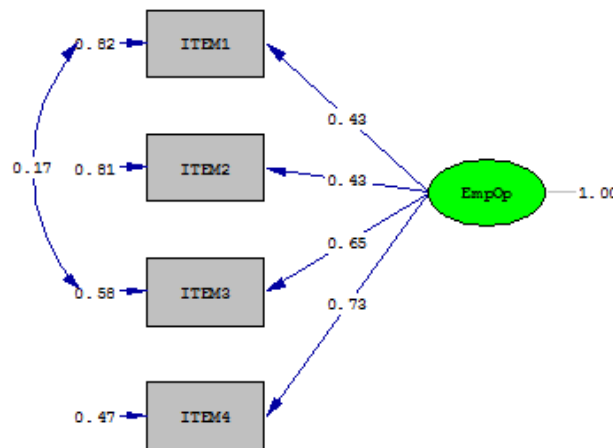
Table 2 Pearson's correlation of Employment Opportunity Scale

	EO1	EO2	EO3	EO4
EO1	1.00			
EO2	.15	1.00		
EO3	.45	.29	1.00	
EO4	.32	.32	.47	1.00
Barlett's Test of Sphericity = 127.59		df = 6		p = .00
KMO = .693				

Note: EO1 = Have great opportunity to find new job better than current one
 EO2 = Employment opportunities for nurses are high
 EO3 = Chance of finding new job that would be acceptable is high
 EO4 = Employment opportunities for nurses to work aboard are high
 KMO = Kaiser-Meyer-Olkin Measure of Sampling Adequacy

All indices of the model were acceptable (chi-square (χ^2) = 0.57, degree of freedom (df) = 1, p-value = 0.45, the normed fit chi-square (χ^2/df) = 0.57, the

goodness-of-fit index (GFI) = 1.00 , adjusted goodness of fit index (AGFI) = 0.99, comparative fit index (CFI) = 1.00, parsimony goodness of fit index (PGFI) = 0.10, root-mean-square error of approximation (RMSEA) = 0.00 as showed in Figure 4.



$\chi^2 = 0.57$, $df = 1$, $\chi^2/df = 0.57$, $p\text{-value} = 0.45$, $GFI = 1.00$, $AGFI = 0.99$, $CFI = 1.00$, $PGFI = 0.10$, $RMSEA = 0.00$

Note: EmpOp = employment opportunity

Figure 4 Measurement model of employment opportunity

Reliability

Secondly, reliability testing was established. For instrument reliability, reliability is an essential component in indicating the repeatable and consistent of instrument (Ferketich, 1990). The present study focused on internal consistency which is a major criterion for assessing its quality and adequacy. It describes estimates of reliability based on the average correlation among items within a test (Nunnally & Bernstein, 1994). The internal consistency was tested by Coefficient alpha (Cronbach's alpha) which is a reliability index that estimates the internal consistency or homogeneity of a measure composed of several items or subparts (Shadish, Cook, & Campbell, 2002). Cronbach's alpha coefficient should be

above the 0.70 standard required for a newly developed instrument (Nunnally & Bernstein, 1994). For this study, a Cronbach's alpha coefficient of 0.70 was obtained for the overall scale. The summary of the measurement is presented in Table 3.

Table 3 Number of items, scoring range, S-CVI, I-CVI, and reliability of Employment Opportunity Scale

Instrument	Number of items	Scoring range	S-CVI	I-CVI	Reliability α
Employment Opportunity Scale	4	5-20	0.88	0.80-1.00	0.70

Furthermore, the present study had been focused on stability that concerns on how constant scores remain from one occasion to another; this could refer to consistency reliability. Test-retest reliability is the method typically used to assess this concern (DeVellis, 2003). Test-retest reliability is a method of estimating test reliability in which a researcher gives the same test to the same group of research participants on two different occasions. The results from the two tests are then correlated to produce a stability coefficient. For using test-retest in this study, 74 nurses were match paired in testing; time period for conducting test-retest was during two weeks and score of two time testing was calculated by Pearson's correlation coefficient I. The acceptable score of correlation coefficient is 0.8 or higher (Crocker & Algina, 1986). For this study, a Pearson's correlation coefficient I of 0.86 was obtained. However, criterion-related validity was not established in this study due to the lack of an existing acceptable instrument assessing.

Instrument translation procedures and modification

In concerning to the success of a study and accuracy of research result, all instruments employed during research process are expected to conform to certain psychometric standards. The validity and reliability of the instrument needed to be concerned in order to consider a good measure of a particular constructs (Polit & Beck, 2004). Particularly when the instruments were used in different context, therefore the contextual consideration should be whether an established measure to meet psychometric accountability. Six instruments including Job satisfaction questionnaire, Professional commitment questionnaire, Burnout questionnaire, Work-family conflict questionnaire, Nurse practice environment questionnaire, and Intention to leave nursing profession questionnaire were originally developed in English. These instruments had been translated into Thai language and modified. The details of translation, modification, and item selection procedures of each instrument as well as psychometric properties (content validity, construct validity, and reliability) for testing translated instrument were described in this section.

In translation process on present study was adapted from Brislin's translation model (Brislin, 1970). Brislin's procedure is known as back translation which commonly used in translating instruments in cross-cultural research (Mason, 2005). The goal of back translation is to ensure that the original and translated versions of the instrument are equivalent by using comparisons between back-translated versions and original versions through bilingual experts' examinations (Brislin, 1970; Jones, Lee, Phillips, Zhang, & Jaceldo, 2001).

Translation procedure for translated instrument

After obtaining the author's permission, forward (English to Thai) and backward (Thai to English) translation was applied. Firstly, the translation process initiates by translating the original English version of the instrument into Thai language by one linguistic expert who working at translation and interpretation service unit, Faculty of Arts, Chulalongkorn University. Secondly, another independent translator has been undertaken back-translation. For reaching congruence of meaning between the original and target versions in Thai requires back-translations. The translator was a linguistic expert from translation and interpretation service unit, Faculty of Arts, Chulalongkorn University. The back-translated versions are compared with the original (English language) versions. Then, the investigators compared both versions in the original language, conducted checks with the translators to examine and modify these items with apparent discrepancies in translation, wording and grammar, and produced a final consensus version. Finally, the instruments were acceptable and reflect the meaning of each item. After this, the final of Thai version is achieved and translation validity had been established.

1. Job satisfaction questionnaire was measured by adapted the Index of Work Satisfaction (IWS) that developed by Stamps (1997). The instrument consists of 2 parts. Part A has 15 paired comparisons of the 6 component including pay, autonomy, task requirements, organizational policies, interaction, and professional status; to determine the ranking or level of importance of each factor that obtained by component weighting coefficient. Higher values for the component weighting coefficient represent higher levels of importance of the job component. Part B comprises 44 items using a series of attitude statements about the six components

mentioned in Part A. The component total score and mean scores, and the total score and total scale mean for the overall level of satisfaction with the six job components were calculated. However, the majority of the research published reported only the results of part B (Boev, 2013), and utilize both parts could induce a practical problem from burdensome scoring procedure (Stamps & Piedmonte, 1986). According to the purpose of this study that mention on nurses' attitude toward their job, the measurement in present study using only part B.

The original IWS (part B) consists of 44 statements that allow respondents to rate their present feelings of job satisfaction on a Likert scale ranging from 1 (strongly agree) to 7 (strongly disagree). Half of the items are positively while the other half is negatively worded. Conversions were made to unify scoring of the responses so as to indicate higher satisfaction with a higher score of items using the conversion instructions in the instrument's manual (Stamps, 1997). Possible scores range from 44 to 308 (Pay (6-42), Autonomy (8-56), Task Requirements (6-42), Organizational Policies (7-49), Professional Status (7-49), Interaction (10-70). If scoring is lower 50% (155) of possible scores, it will be indicated as a low amount of satisfaction. Previous research has determined the instrument is reliable and valid, with coefficient alpha ranging from .82 to .91 for the overall scale (Stamps, 1997). The instrument's validity was reestablished in the form of a factor analysis which supported the previous revisions of the instrument. The IWS has been used numerous times for clinical and administrative purposes and was found to be a valid and reliable measure of nurse job satisfaction (Best & Thurston, 2004; Manojlovich, 2005).

After obtaining the author's permission, forward (English to Thai) and backward (Thai to English) translation was applied. The back-translated versions are

compared with the original (English language) versions. Then, the investigators compared both versions in the original language, conducted checks with the translators to examine and modify these items with apparent discrepancies in translation, wording and grammar, and produced a final consensus version. Finally, the instruments were acceptable and reflect the meaning of each item. After this, the final of Thai version is achieved and translation validity had been established.

Content validity

After translation, for ensuring the translated instruments to achieve the relevance and represent the targeted construct for a particular assessment purpose, the content validity has been established. The content validity index (CVI) is the most widely used method of quantifying content validity for multi-item scales based on expert ratings of relevance. Every element of an assessment instrument will be judged by multiple experts. This study, the content validity was established by a panel of five experts specializing in nursing administration area. These experts were rigorously chosen in accordance with established criteria and represented excellence in the nursing administrative field. The qualifications of the expert for validating research instrument are included as the following:

- 1) Two experts are professional nurse who work as nurse administrator in governmental hospital and/or private hospital and high experienced in research area of nursing administration, and graduated at least master degree in nursing administrative field.

- 2) Two professional nurses with PhD in nursing and working in Thailand Nursing and Midwifery Council with highly experienced in nursing workforce research conducting.

3) One nurse instructors with PhD in nursing administrative field and experienced in research area of nursing administration.

The experts were instructed to rate each scale item in terms of its relevance to the underlying construct as the definition of the concepts represented. The standard four-point CVI rating scale was used to evaluate the items for their content, construct and conceptual relevance. This 4-point rating scale is ordinal scale in order to avoid having a neutral and ambivalent midpoint, ranging from 1 (not relevant), 2 (somewhat relevant), 3 (quite relevant), 4 (highly relevant) (Davis, 1992; Polit & Beck, 2006). In addition, the experts were also invited to suggest revised wordings for any items that seemed ambiguous, unclear, or inappropriate by using open suggestions.

The content validity of the measure was based on the expert concurrence using the content validity index (CVI), calculated for category evaluation and item evaluation. The CVI was calculated based on the number of experts giving a rating of either 3 or 4, divided by the number of experts. Additionally, the experts were asked to clarify their reasons if they did not agree with any of the items. Following the experts' review, three items were deleted that are item 27. "What I do on my job does NOT add up to anything really significant. (I-CVI=.40)", item 36 "I could deliver much better care if I had more time with each patient. (I-CVI=.80)" and item 44. "An upgrading of pay schedules for nursing personnel is needed as this hospital. (I-CVI=.60)" because item were redundant with the other items (item 36), some item are not relevant in the construct (item 27) and not fit for Thai context (item 44). The scale's content validity index (S-CVI) was found to be 0.88 after three items

were deleted as presented in Table 4. Thus, the JS – Thai version contains 41 items representing the content domain.

The item selection process and the precision of items were examined using corrected item-total correlation. Sample used in this step was based on the minimum criteria for factor analysis with a ratio of 5 subjects per item in order to reduce sampling error (DeVellis, 2003; Nunnally & Bernstein, 1994). Nurses from 3 governmental hospitals were randomly selected from 12 hospitals in Bangkok Metropolitan to test in this process. These hospitals are King Chulalongkorn Memorial Hospital, Nopparat Rajathanee Hospital, and Police General Hospital. After obtaining the Intuitional Review Board's approvals of the study hospitals, all full time registered nurses were eligible and invited to participate in this study with exclusion of newly nurses employed less than three months, nurses those are on maternity leave, extended sick leave or study leave, and unwilling to participate in the study.

Totally, 207 of 220 (response rate 94.1%) were completed the questionnaire. The item-total correlation should be 0.30-0.70 (DeVellis, 2003). The results showed that 4 items of job satisfaction questionnaire presented low item-total correlation value that are item 4 "There is too much clerical paperwork/computer-work required of nursing personnel in this hospital" = 0.13, item 8 "It is my impression that a lot of nursing personnel at this hospital are dissatisfied with their pay" = 0.19, item 15 "There is no doubt in my mind that what I do on my job is really important" = 0.18, and item 39 "My particular job really doesn't require much skill or "know-how" = 0.10.

Then, factor loading from CFA was taken into account. The result showed that factor loading = 0.17, 0.55, 0.26, and 0.14, respectively. Factor loading

value less than 0.30 were considered to delete from scale (Pett, Lackey, & Sullivan, 2003; Tabachnick & Fidell, 2001). Therefore, three items (item 4, 15, and 39) were deleted; the JS contains 38 items representing the content domain.

Construct validity

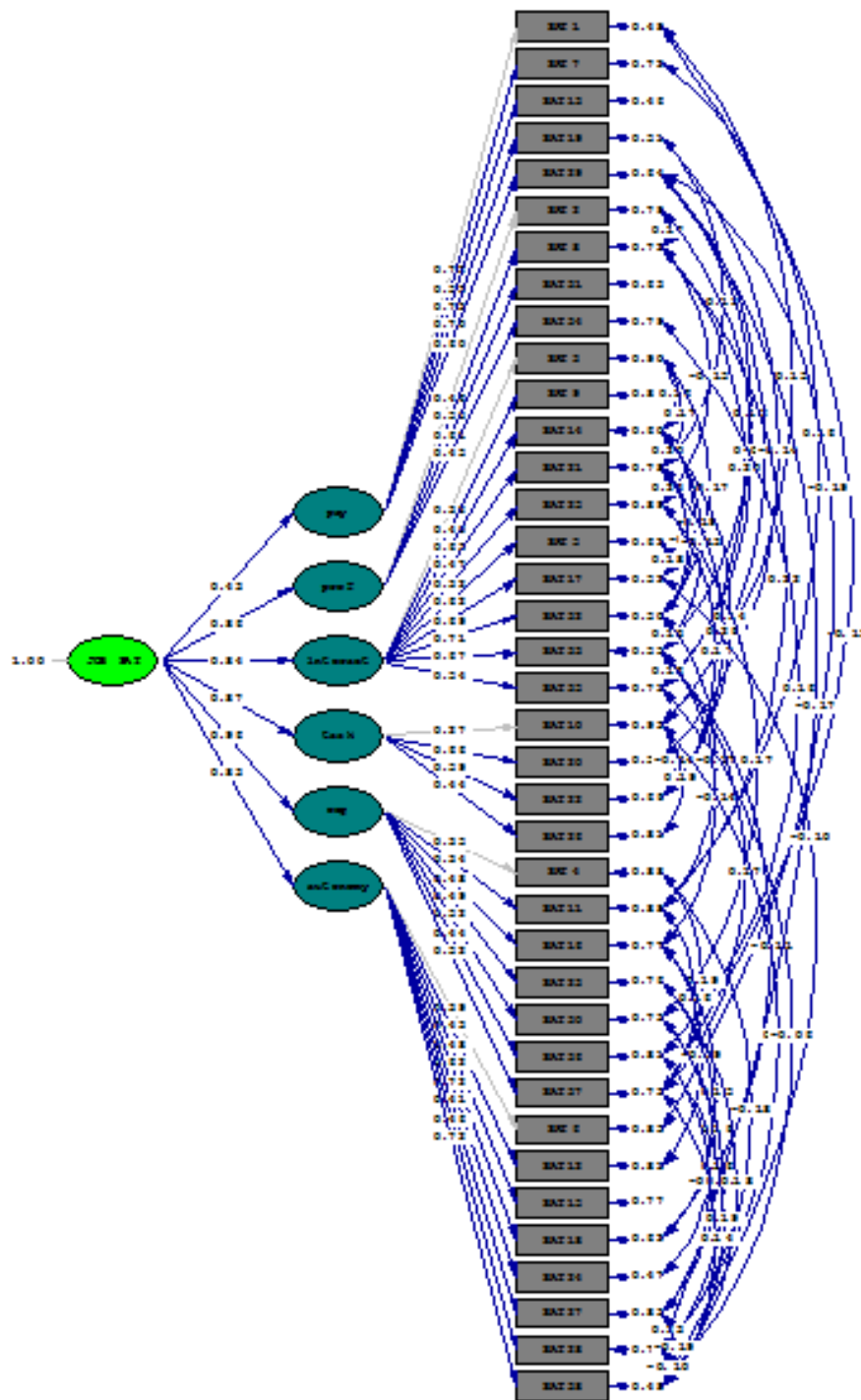
Construct validity is the validity of theoretical involving building variables to be measured (Said et al., 2011). Confirmatory factor analysis (Shore et al., 1990) was utilized to assess construct validity in order to assess whether the chosen component solution fitted the data adequately. The significant loadings is greater than 0.30. The present study results showed that factor loading of all items ranging from 0.32 to 0.73 were statistically significant at 0.05 (Table 4). Regarding item 3, 6, and 7 remain show item total correlation less than 0.3 (Table 4), when considering on factor loading, the item were not show low factor loading. However, items with loading greater than .30 were suggested remaining these item cause of the items were essential for the scale (Pett et al., 2003). For the second level of the CFA, all regression weights 0.43 to 0.96 were statistically significant at 0.05, and squared multiple correlation ranging from 0.18 to 0.93 (Table 4). All indices of the model were acceptable: chi-square (χ^2) = 902.53, degree of freedom (df) = 605, the normed fit chi-square (χ^2/df) = 1.49, the goodness-of-fit index (GFI) = 0.81, comparative fit index (CFI) = 0.96, parsimony normed fit index (PNFI) = 0.76, root-mean-square error of approximation (RMSEA) = 0.04, standardized root-mean-square residual (SRMR) = 0.07, except for chi-square significance (p-value = 0.00) as showed in Figure 5.

Table 4 Factor loading and construct validity of Job Satisfaction Scale – Thai version
(n = 207)

Job Satisfaction Scale – Thai version	Mean	Item Total Correlation	Standardized factor loading					
			pay	prof	int	task	org	auto
1. Salary is satisfactory	3.17	0.38	0.72					
2. Most people do not appreciate in nursing care	4.02	0.40		0.46				
3. Nurses help one another when getting in a rush	5.62	0.23			0.32			
4. Control over scheduling their own shifts	3.76	0.31					0.35	
5. Physicians cooperate with nurses	4.91	0.51			0.62			
6. Supervised more closely	4.71	0.23						0.39
7. Nurses are dissatisfied with their pay	2.33	0.21	0.53					
8. Nursing is not recognized as an important profession	3.98	0.49		0.53				
9. Hard to feel “at home” for new nurses	4.11	0.43			0.40			
10. Could do a better job if not have much thing to do all the time	2.75	0.30					0.27	
11. Gap between administration and daily problems	2.89	0.37						0.34
12. Sufficient input into the plan of care	5.58	0.30						0.43
13. The pay we get is reasonable	2.89	0.39	0.73					
14. Good deal of teamwork	5.55	0.58			0.63			
15. Too much responsibility, not enough authority	4.14	0.41						0.48
16. Not enough opportunities for advancement	3.49	0.47						0.48
17. Lot of teamwork between nurses and doctors	4.96	0.52			0.69			
18. Have little control over my own work	4.66	0.48						0.62
19. Not satisfied, rate of pay increase	2.63	0.39	0.70					
20. Satisfied of activities that do on job	5.07	0.51					0.66	

Table 4 Factor loading and construct validity of Job Satisfaction Scale – Thai version
(n = 207) (Cont.)

Job Satisfaction Scale – Thai version	Mean	Item Total Correlation	Standardized factor loading					
			pay	prof	int	task	org	auto
21. Nurses not friendly and outgoing	5.25	0.42			0.47			
22. Opportunity to discuss patient care problems	5.67	0.47				0.59		
23. Opportunity to participate in the administrative decision-making	4.25	0.45					0.49	
24. A great deal of independence is permitted	4.94	0.56						0.72
25. Lot of “rank consciousness”	5.46	0.30			0.32			
26. Sufficient time for patient care	4.20	0.37				0.44		
27. All activities seem programmed for me	3.96	0.37						0.41
28. Do things that against professional nursing judgment	4.42	0.44						0.46
29. This hospital are fairly paid	3.29	0.30	0.60					
30. Administrative interfere with patient care	4.21	0.50					0.52	
31. Proud to talk about my job	5.53	0.46		0.61				
32. Physicians respect for the skill and knowledge of nurses	4.66	0.53			0.71			
33. Physicians understand and appreciate nurses	4.35	0.56			0.67			
34. I would still go into nursing	3.94	0.38		0.45				
35. Physicians look down nurses	4.12	0.47			0.54			
36. Have voice in planning policies	4.70	0.37					0.44	
37. Nursing administrators consult staff on daily problems	4.31	0.49					0.52	
38. Freedom to make decision	4.98	0.53						0.72
Factor loading			0.43	0.86	0.84	0.87	0.96	0.83
t-value			4.98	5.64	4.15	3.48	4.69	5.23
Construct validity (Squared Multiple correlation) (R ²)			0.18	0.74	0.71	0.76	0.93	0.69



$\chi^2 = 902.53$, $df = 605$, $\chi^2/df = 1.49$, $p\text{-value} = 0.00$, $CFI = 0.96$, $SRMR = 0.07$
 RMSEA= 0.05

Note: JOB SAT = Job Satisfaction

Figure 5 Measurement model of job satisfaction

Reliability

For instrument reliability, reliability is an essential component in indicating the repeatable and consistent of instrument (Ferketich, 1990). The present study focused on internal consistency which is a major criterion for assessing its quality and adequacy. It describes estimates of reliability based on the average correlation among items within a test (Nunnally & Bernstein, 1994). The internal consistency will be test by Coefficient alpha (Cronbach's alpha) which is a reliability index that estimates the internal consistency or homogeneity of a measure composed of several items or subparts (Shadish et al., 2002). Cronbach's alpha coefficient should be above the 0.70 standard required for a newly developed instrument (Nunnally & Bernstein, 1994). For this study, a Cronbach's alpha coefficient of 0.90 was obtained for the overall scale. All six components, Cronbach's alpha coefficient were ranged from 0.56 to 0.81. The summary of the measurement is presented in Table 5.

Furthermore, the present study had been focused on stability that concerns on how constant scores remain from one occasion to another; this could refer to consistency reliability. Test-retest reliability is the method typically used to assess this concern (DeVellis, 2003). Test-retest reliability is a method of estimating test reliability in which a researcher gives the same test to the same group of research participants on two different occasions. The results from the two tests are then correlated to produce a stability coefficient. For using test-retest in this study, time period for conducting test-retest was during two weeks and score of two time testing was calculated by Pearson's correlation coefficient r . The acceptable score of correlation coefficient is 0.8 or higher (Crocker & Algina, 1986). For this study, a

Pearson's correlation coefficient r of 0.80 was obtained. However, criterion-related validity was not established in this study due to the lack of an existing acceptable instrument assessing.

Table 5 Number of items, scoring range, S-CVI, I-CVI, and reliability of Job Satisfaction Scale – Thai version (n = 207)

Job Satisfaction Scale – Thai version	Number of item	Scoring range	S-CVI	I-CVI	Reliability α
- Pay	5	5-35			0.79
- Professional status	4	4-28			0.62
- Interaction	10	10-70			0.81
- Task requirement	4	4-28			0.56
- Organizational policies	7	7-49			0.67
- Autonomy	8	8-56			0.75
Total	38	38-266	0.88	0.40-1.00	0.90

2. Professional commitment questionnaire was measured by the Nurses' Professional Commitment Scale (NPCS) that developed by Lin et al. (2007). The items were established from a systematic review of the literature in the area. The original scale comprised of 19 items with scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 points (strongly agree). The total score ranged from 19 (lowest professional commitment) to 95 (highest professional commitment). The validity of this scale was examined by measuring the content validity, construct validity (through principal component analysis), criterion validity, and concurrent validity. The reliability of scale was determined by testing internal consistency and test-retest. The scale showed good psychometric properties. The Cronbach's alpha

coefficient of total scores was 0.91, and test-retest reliability of total scores was 0.91 (Lin et al., 2007).

The professional commitment scale was translated from English into Thai language with the same process of the job satisfaction questionnaire. The professional commitment scale – Thai version contain the same format as the original one.

Content validity

The professional commitment scale – Thai version was tested content validity with the same process of JS scale. Following the experts' review, one item was deleted that is item 8 “Nursing as professionals need professional training (I-CVI=.40)” because this item was the fact, it might not use to measure in this content. The scale's content validity index (S-CVI) was found to be 0.87 as presented in Table 7. Thus, the professional commitment – Thai version contains 18 items representing the content domain.

The item selection was conducted with the same process of JS scale. The result showed that all items of the professional commitment scale – Thai version had item-total correlations between 0.35-0.69.

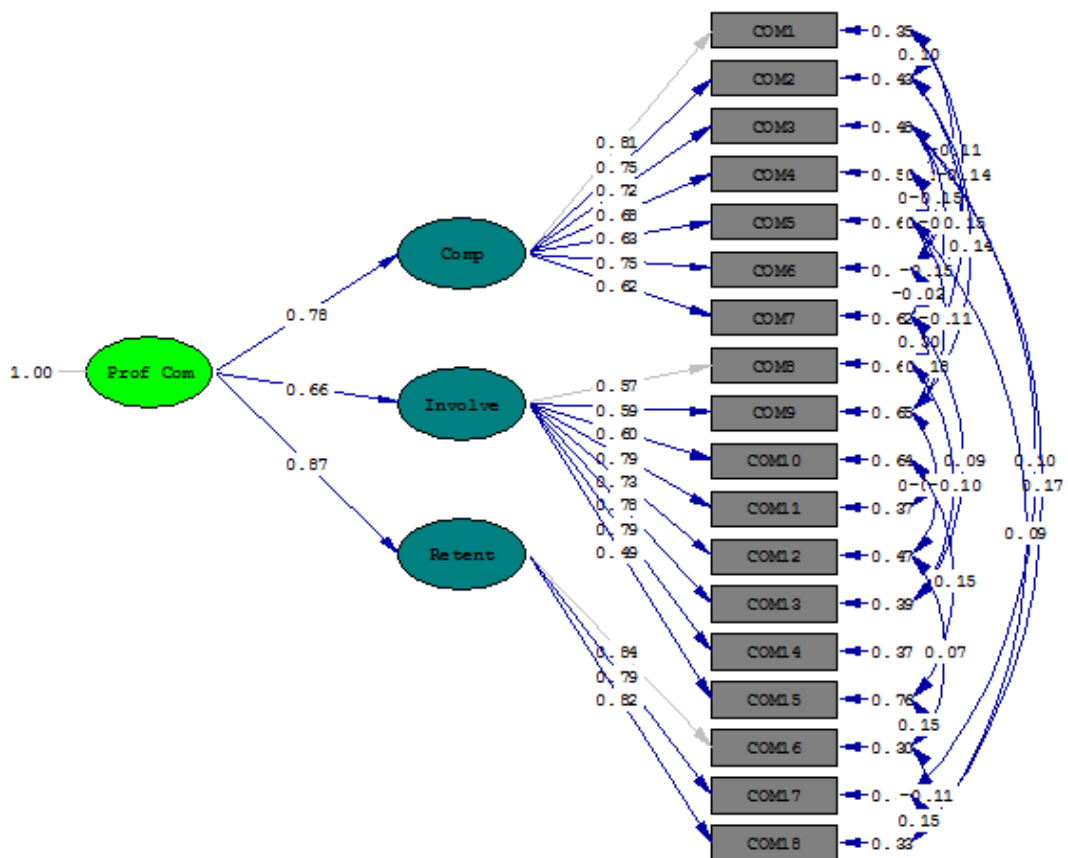
Construct validity

The construct validity of the Professional commitment scale – Thai version was tested on the same process of the JS scale. The result showed that there were 18 items and 3 domains in the confirmatory factor analysis (CFA). The results showed that the factor loading of all items ranging from 0.49 to 0.83 were statistically significant at .05 (Table 6).

Table 6 Factor loading and construct validity of Professional Commitment Scale – Thai version (n = 207)

Professional Commitment Scale – Thai version	Mean	Item Total Correlation	Standardized factor loading		
			compli	invol	reten
1. Nursing is the most interesting work	3.28	0.68	0.81		
2. It is meaningful to be a nurse	3.66	0.68	0.75		
3. Be a nurse as lifelong career	2.73	0.60	0.72		
4. Discuss nursing with other people	3.56	0.64	0.68		
5. Dream come true by doing nursing	2.91	0.55	0.63		
6. Proud to tell other, I'm a nurse	3.87	0.63	0.75		
7. Nursing increase life experience	4.28	0.60	0.62		
8. Devote self to nursing	3.89	0.67		0.57	
9. Conscientious to job	4.46	0.35		0.59	
10. Think, how to do good job	4.25	0.44		0.60	
11. Understand patients' needs	4.22	0.55		0.79	
12. Care patients as my family	4.15	0.53		0.73	
13. Do my best to help patient	4.41	0.46		0.78	
14. Try my best to enhance patient's self-care ability	4.30	0.52		0.79	
15. Overcome difficulties	4.02	0.40		0.49	
16. Stay in nursing even lack opportunity for promotion	3.50	0.67			0.84
17. Stay in nursing even salary isn't satisfied	3.08	0.67			0.79
18. Stay in nursing even get married	3.30	0.69			0.82
Factor loading			0.78	0.66	0.87
t-value			9.23	6.50	9.90
Construct validity (R ²)			0.61	0.44	0.76

The results of the CFA showed regression weights of three dimensions ranging from 0.66 to 0.87. Squared multiple correlation ranged from 0.44 to 0.76. All fit indices of the model were acceptable ($\chi^2 = 171.76$, $\chi^2/df = 1.64$, GFI=0.92, CFI=0.99, PNFI = 0.66, SRMR = 0.08, RMSEA = 0.05), except for chi-square significance (p-value = 0.00) as showed in Figure 6.



$\chi^2 = 171.76$, $df = 105$, $\chi^2/df = 1.63$, p-value = 0.00, GFI = 0.92, CFI = 0.99, SRMR = 0.08, RMSEA = 0.05

Note: Prof Com = Professional Commitment

Comp = Nursing professional compliance

Involve = Involvement of nursing profession

Retent = Retention of nursing profession

Figure 6 Measurement model of professional commitment

Reliability

Reliability of the Professional commitment scale – Thai version was determined by using Cronbach's alpha coefficient (α) for estimate the internal consistency. The result showed that the Cronbach's alpha of total scale was 0.91. The Cronbach's alpha of all dimension were ranged from 0.87 to 0.88. The summary of the instrument is presented in Table 8. Furthermore, test-retest reliability which is a method of estimating test reliability in which a researcher gives the same test to the same group of research participants on two different occasions; was conducted. Pearson's correlation coefficient (r) was used to test test-retest during two weeks and result showed that Pearson's correlation coefficient (r) = 0.84.

Table 7 Number of items, scoring range, S-CVI, I-CVI, and reliability of Professional Commitment Scale – Thai version

Professional Commitment Scale – Thai version	Number of item	Scoring range	S-CVI	I-CVI	Reliability α
- Nursing professional compliance	7	7-35			0.88
- Involvement of nursing profession	8	8-40			0.87
- Retention of nursing profession	3	3-15			0.87
Total	18	18-90	0.87	0.60-1.00	0.91

3. Burnout questionnaire was measured by the Copenhagen Burnout Inventory (CBI) which developed by Borritz and colleague (2006). This scale comprised of 3 subscales that measured: 1) Personal burnout, 2) Work-related burnout, and 3) Client-related burnout. All items have five response categories. The

responses are rescaled to a 0-100 metric (Scoring: Always=100; Often=75; Sometimes=50; Seldom=25; Never/almost never= 0). Scale scores are calculated by taking the mean of the items in that scale. Reliability of this instrument found to be high for the three CBI scales (Cronbach's alpha= 0.87 for both personal and work-related burnout; and 0.85 for client related burnout). The correlation coefficients between the scales were 0.73 for personal and work burnout, 0.46 for personal and client burnout, and 0.61 for work and client burnout.

To adequate the instrument to the purpose of the study and reduce the confusing of the various format of the other instrument, when making the adaptation from the original format, the items followed a Likert scale with five response categories (1-5). The total score on a scale for a respondent is the mean of the scores on the individual items.

The burnout scale was translated from English into Thai language with the same process of the job satisfaction questionnaire. The burnout scale – Thai version contain the same format as the original one.

Content validity

The burnout scale – Thai version was tested content validity with the same process of JS scale. The S-CVI of the burnout scale – Thai version was 1.00 and 1.00 for I-CVI (Table 9).

The item selection was conducted with the same process of JS scale. The result showed that all items of the burnout scale – Thai version had item-total correlations ranged from 0.34 to 0.87.

Construct validity

The construct validity of the burnout scale – Thai version was tested on the same process of the JS scale. The result showed that there were 19 items and 3 domains in the first level of confirmatory factor analysis (Shore et al., 1990). The results of the CFA showed that the factor loading of all items ranging from 0.34 to 0.87 were statistically significant. For the second level of the CFA, regression weights of three dimensions were ranging from 0.81 to 1.00 ($p < 0.01$) (Table 8). In addition, squared multiple correlation ranged from 0.65 to 1.00. All fit indices of the model were acceptable ($\chi^2 = 206.45$, $df = 132$, $p\text{-value} = 0.00$, $\chi^2/df = 1.56$, $GFI = 0.90$, $CFI = 0.99$, $PNFI = 0.76$, $SRMR = 0.04$, $RMSEA = 0.05$), except for chi-square significance ($p\text{-value} = 0.00$) as showed in Figure 7.

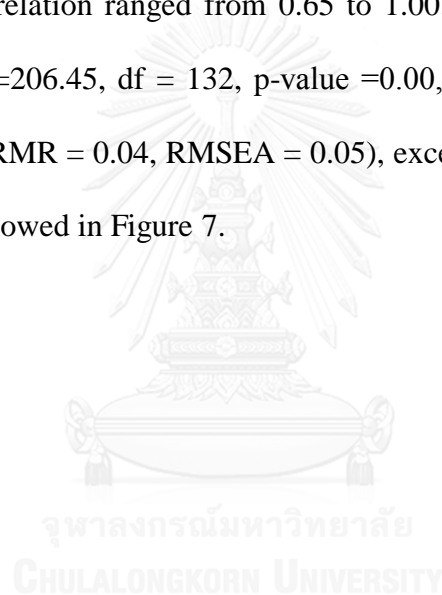
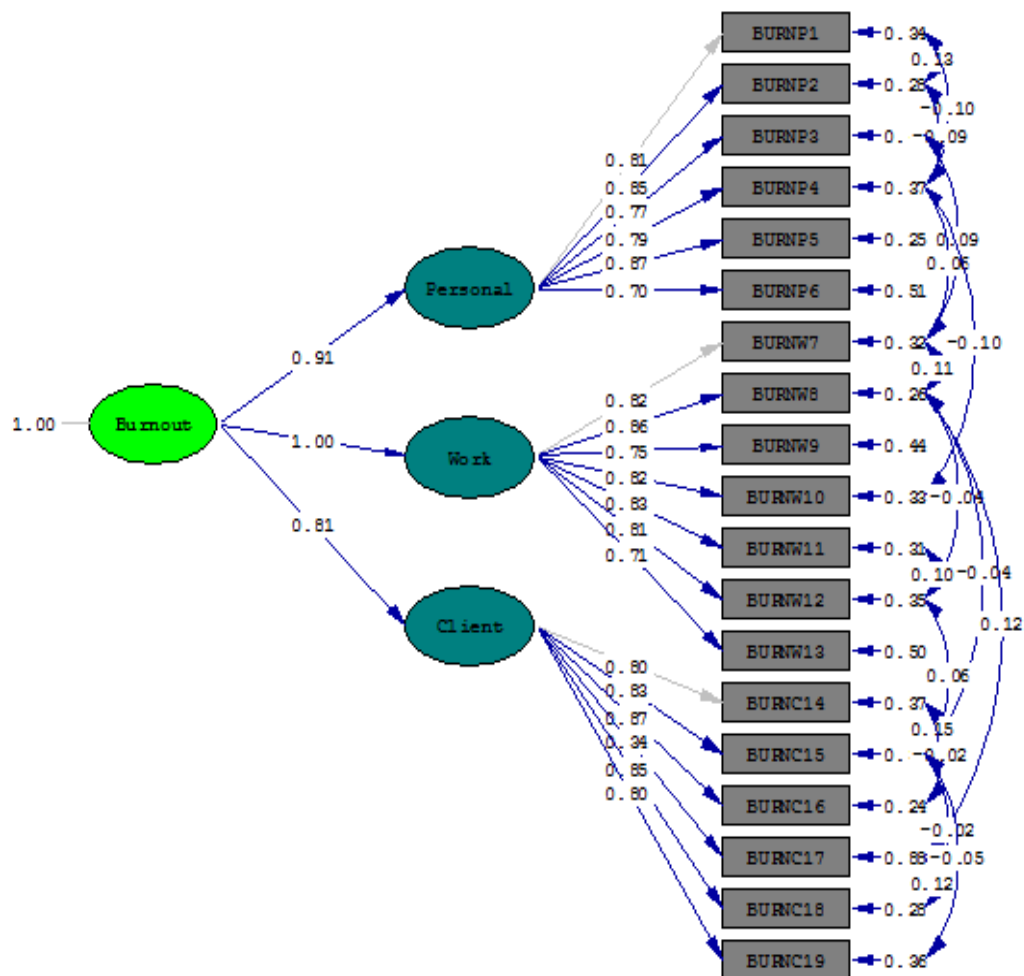


Table 8 Factor loading and construct validity of Burnout Scale – Thai version

(n = 207)

Burnout Scale – Thai version	Mean	Item Total Correlation	Standardized factor loading		
			personal	work	client
1. Feel tired	3.42	.75	0.81		
2. Physically exhausted	3.18	.77	0.85		
3. Emotional exhausted	3.15	.68	0.77		
4. “I can’t take it anymore”	2.41	.70	0.79		
5. Feel worn out	2.85	.78	0.87		
6. Feel weak and susceptible to illness	2.43	.70	0.70		
	2.92	.79		0.82	
7. Work emotionally exhausting	3.05	.82		0.86	
8. Feel burnt out cause of work	2.95	.73		0.75	
9. Work frustrate	3.09	.77		0.82	
10. Feel worn out at the end of working day	2.88	.80		0.83	
11. Exhausted in morning thought of another day at work	2.49	.77		0.81	
	2.71	.68		0.71	
12. Every working hour is tiring					
13. Have not enough energy for family and friends	2.36	.72			0.80
	2.23	.71			0.83
14. Hard to work with client	2.39	.75			0.87
15. Frustrate to work with client	3.15	.33			0.34
16. Drain energy to work with client	2.50	.74			0.85
17. Feel give more than get back					
18. Tired of working with client					
19. Wonder how long will continue working with clients	2.56	.70			0.80
Factor loading			0.91	1.00	0.81
t-value			12.22	13.82	10.61
Construct validity (Squared Multiple correlation (R ²))			0.82	1.00	0.65



$\chi^2 = 206.45$, $df = 132$, $\chi^2/df = 1.56$, $p\text{-value} = 0.00$, $GFI = 0.90$, $CFI = 0.99$, $SRMR = 0.04$, $RMSEA = 0.05$

Figure 7 Measurement model of burnout

Criterion validity

To estimate the validity associated to the criterion, the concurrent validity of the two burnout instruments was tested to measure similar construct. Regarding previous literature, the Maslach Burnout Inventory (MBI) is recognized as a “gold standard” to assess professional burnout; it has been extensively applied in more than 90% of all empirical burnout studies (Schaufeli et al., 2009). However,

there are many arguments on the MBI that referred to the status of a possibly associated coping strategy, and found to have a weak association with the emotional exhaustion. Additionally, several authors stated that the limitation of the MBI is considering only emotional exhaustion aspect, rather than the physical and cognitive aspects (Demerouti et al., 2001). Therefore, the Copenhagen Burnout Inventory (CBI) is a new instrument that was developed by emphasized on prolonged physical and psychological exhaustion features (Borritz, 2006). Therefore, to achieve this goal MBI and CBI was used to test criterion validity. Pearson's correlation was using in concurrent validity analysis. The mean score of the Thai version of Copenhagen Burnout Inventory (T-CBI) was correlated with score obtained from the Maslach Burnout Inventory (MBI). The result showed that the T-CBI score was significantly positively correlated with the MBI score at moderate level ($r = .51, p < .01$).

Reliability

Reliability of the Professional commitment scale – Thai version was determined by using Cronbach's alpha coefficient (α) for estimate the internal consistency. The result showed that the Cronbach's alpha of total scale was 0.96. The Cronbach's alphas of the three subscales are 0.91, 0.93, and 0.88, respectively. The summary of the instrument is presented in Table 9.

Table 9 Number of item, scoring range, S-CVI, I-CVI, and reliability of Burnout Scale – Thai version

Burnout Scale – Thai version	Number of item	Scoring range	S-CVI	I-CVI	Reliability α
- Personal	6	1-5			0.91
- Work-related	7	1-5			0.93
- Client-related	6	1-5			0.88
Total	19	1-5	1.00	1.00	0.96

Furthermore, the Interclass Correlation Coefficient (ICC) is used to assess the consistency of measurement made in two different times measuring the same quantity (test-retest approached). For an overall mean score was 0.86 (CI 95%: 0.80-0.91). ICC values for each one of the three subscales of the T-CBI were: personal burnout: 0.82 (CI 95%: 0.73-0.88); work-related burnout: 0.83 (CI 95%: 0.74-0.89); and client-related burnout: 0.80 (CI 95%: 0.71-0.87). All subscales had an ICC greater than 0.70, which indicated high stability within 2 weeks (Table 10).

Table 10 Interclass correlation of the Thai version of Copenhagen Burnout Inventory (T-CBI), subscales and items (n = 74)

Variables	Interclass correlation coefficient	95% CI		
		Lower	Upper	P
T-CBI	.86	.80	.92	< .001
Personal burnout	.82	.73	.88	< .001
Work-related burnout	.83	.74	.89	< .001
Client-related burnout	.80	.71	.87	< .001
Items				
1. Feel tried	.77	.66	.85	< .001
2. Physically exhausted	.74	.61	.83	< .001
3. Emotional exhausted	.76	.65	.84	< .001
4. "I can't take it anymore"	.76	.64	.84	< .001
5. Feel worn out	.75	.63	.84	< .001
6. Feel weak and susceptible to illness	.73	.61	.82	< .001
7. Work emotionally exhausting	.71	.57	.81	< .001
8. Feel burnt out cause of work	.74	.62	.83	< .001
9. Work frustrate	.78	.68	.86	< .001
10. Feel worn out at the end of working day	.76	.64	.84	< .001
11. Exhausted in morning thought of another day at work	.71	.58	.81	< .001
12. Every working hour is tiring	.75	.64	.84	< .001
13. Have not enough energy for family and friends	.68	.54	.79	< .001
14. Hard to work with client	.62	.46	.75	< .001
15. Frustrate to work with client	.74	.61	.83	< .001
16. Drain energy to work with client	.73	.60	.82	< .001
17. Feel give more than get back	.67	.53	.78	< .001
18. Tired of working with client	.80	.70	.87	< .001
19. Wonder how long will continue working with clients	.78	.67	.86	< .001

4. Nurse practice environment questionnaire was measured by using the Practice Environment Scale of the Nursing Work Index (PES-NWI) (Lake, 2002). The PES-NWI composes of 31-item scales and defines in five subscales: nurse participation in hospital affairs, nursing foundation for quality of care, nurse manager ability, leadership, and support of nurses, staffing and resource adequacy, and collegial nurse-physician relations. A four-point scale is used to score agreement with each item from 1 (strongly disagree) to 4 (strongly agree). Score will be classified in to three levels (favourable, mixed and unfavourable) to assist in interpreting the composite subscale scores (Lake & Friese, 2006).

Favourable settings were those where subscale scores were greater than 2.5 for five subscales.

Mixed settings had two or three subscales with scores greater than 2.5.

Unfavourable settings none or one subscale.

In the original version of PES-NWI, Cronbach's alpha values for these five subscales and the entire scale were .71 to .84 and .82, respectively. In addition, the intraclass correlations of the five subscales and the entire scale were .86 to .97 and .96, respectively (Lake, 2002).

The nurse practice environment scale was translated from English into Thai language with the same process of the job satisfaction questionnaire. The nurse practice environment scale – Thai version contain the same format as the original one.

Content validity

The nurse practice environment scale – Thai version was tested content validity with the same process of JS scale. The scale's content validity index (S-CVI) was 0.97 and 0.60-1.00 for I-CVI.

The item selection was conducted with the same process of JS scale. The result showed that all items of the nurse practice environment scale – Thai version had item-total correlations ranged from 0.31 to 0.62.

Construct validity

The construct validity of the Nurse Practice Environment scale – Thai version was tested on the same process of the JS scale. The result showed that there were 31 items and 5 domains in the first level of confirmatory factor analysis (Shore et al., 1990). The results showed that the factor loading of all items ranging from 0.44 to 0.96 were statistically significant at .05 (Table 11). For the second level of the CFA, all regression weight 0.50 to 0.70 was statically significant .05 (Table 11). All fit indices of the model were acceptable ($\chi^2 = 611.38$, $df = 417$, $p\text{-value} = 0.00$, $\chi^2/df = 1.47$, $GFI = 0.84$, $CFI = 0.97$, $SRMR = 0.07$, $RMSEA = 0.04$), as showed in Figure 8.

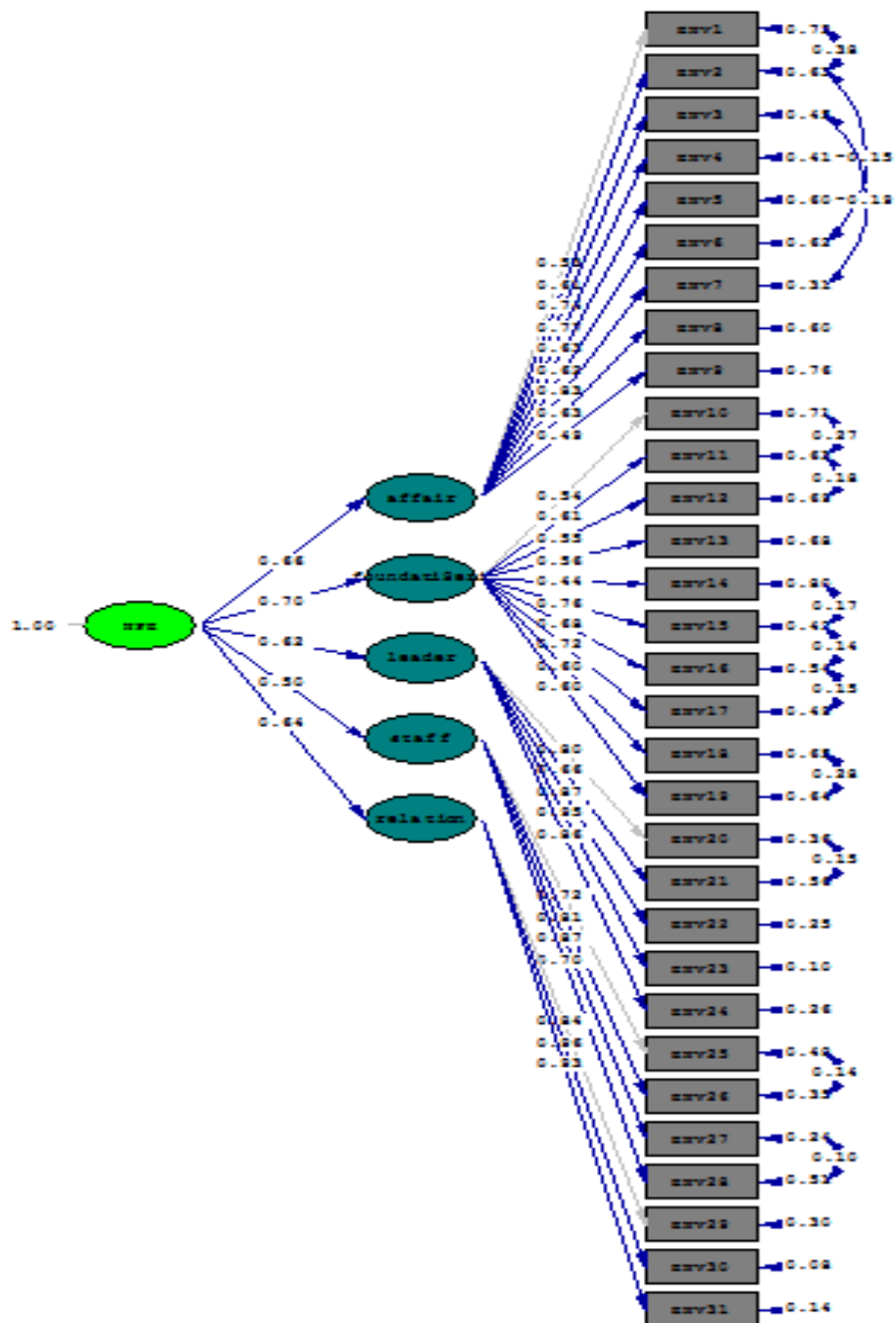
Table 11 Factor loading and construct validity of Nurse Practice Environment Scale – Thai version (n=207)

Nurse Practice Environment Scale – Thai version	Mean	Item Total Correlation	Standardized factor loading				
			affair	found	lead	staff	relat
1. Involved in the internal governance of the hospital	2.74	.48	0.53				
2. Opportunity for participating in policy decision	2.61	.43	0.61				
3. Opportunities for advancement	2.55	.54	0.74				
4. Administrator listens to and responds to employee concerns	2.42	.59	0.77				
5. Director of nursing highly visible and accessible	2.27	.45	0.63				
6. Career development opportunity	2.83	.55	0.62				
7. Nursing administrators consult with staff on daily problems	2.59	.62	0.83				
8. Have the opportunity to serve on hospital and nursing department committees	2.90	.46	0.63				

Table 11 Factor loading and construct validity of Nurse Practice Environment Scale – Thai version (n = 207) (Cont.)

Nurse Practice Environment Scale – Thai version	Me an	Item Total Correlation	Standardized factor loading				
			affair	found	lead	staff	relat
9. Nursing executive equal in power and authority to other top executives	2.55	.45	0.49				
10. Use of nursing diagnoses	3.28	.35		0.54			
11. Active quality assurance program	3.09	.46		0.61			
12. Preceptor program for new RN	3.31	.31		0.55			
13. Nursing care is based on a nursing	3.14	.39		0.56			
14. Foster continuity of care	2.87	.38		0.44			
15. Clear philosophy of nursing	2.99	.57		0.76			
16. Up-to-date nursing care plans	3.07	.48		0.68			
17. High standards of nursing care	3.10	.53		0.72			
18. Continuing education programs	2.89	.62		0.60			
19. Working with nurses who are clinically competent	2.99	.61		0.60			
20. Head nurse who is a good manager and leader	3.03	.62			0.80		
21. Head nurse backs up nurses staff in decision making	2.94	.56			0.66		
22. Mistake is learning opportunity	3.07	.56			0.87		
23. Supervisor is supportive of the nurses	3.08	.59			0.95		
24. Recognition for a job well done	3.13	.55			0.86		
25. Enough staff to get the work done	2.71	.43				0.72	
26. Enough RN to provide quality care	2.59	.41				0.81	
27. Adequate support services	2.53	.45				0.87	
28. Enough time to discuss patient care problems	2.74	.40				0.70	
29. A lot of teamwork	3.01	.52					0.94
30. Physicians and nurses have good relationships	2.98	.57					0.96
31. Functional collaboration between nurses and physicians	3.00	.53					0.93
Factor loading			0.66	0.70	0.62	0.50	0.64
t-value			6.06	6.05	7.44	5.10	7.91
Construct validity (Squared Multiple correlation (R ²))			0.44	0.49	0.38	0.25	0.41

Note: affair = Nurse participation in hospital affair, found = Nursing foundation for quality of care, lead = Nurse manager ability, leadership, ans support of nurses, staff = Staffing and resource adequacy, relat = Collegial nurse-physician relations



$\chi^2 = 611.38$, $df = 417$, $\chi^2/df = 1.47$, $p\text{-value} = 0.00$, $CFI = 0.97$, $SRMR = 0.07$, $RMSEA = 0.04$

Note: NPE = Nurse Practice Environment

Figure 8 Measurement model of nurse practice environment

Reliability

Reliability of the nurse practice environment scale – Thai version was determined by using Cronbach's alpha coefficient (α) for estimate the internal consistency. The result showed that the Cronbach's alpha was 0.92. The component of the scale presented the Cronbach's alpha value ranged from 0.86-0.93. The summary of the instrument is presented in Table 12. Test-retest reliability was conducted to test stability of the instrument. Pearson's correlation coefficient (r) was used to test test-retest during two weeks and result showed that Pearson's correlation coefficient (r) = 0.84.

Table 12 Number of items, scoring range, S-CVI, I-CVI, and reliability of Nurse Practice Environment Scale – Thai version

Nurse Practice Environment Scale – Thai version	Number of item	Scoring range	S-CVI	I-CVI	Reliability α
- Participation	9	1-4			0.87
- Nursing foundations	10	1-4			0.86
- Nurse manager	5	1-4			0.92
- Staffing	4	1-4			0.88
- Relation	3	1-4			0.93
Total	31	1-4	0.97	0.60-1.00	0.92

Note: Participation = Nurse participation in hospital affairs

Nursing foundations = Nursing foundations for quality of care

Nurse manager = Nurse manager ability, leadership, and support of nurses

Staffing = Staffing and resource adequacy

Relation = Collegial nurse-physician relation

5. Work-family conflict was measured by using five-items scale developed by Netemeyer, Boles, and McMurrian (1996) with a 5-point Likert-type response scale (1= strongly disagree; 2= disagree, 3= neutral, 4= agree, and 5 = strongly agree). The scale scores range from 5 to 25, with high score indicates a high level of perceived conflict between work and family and low score will indicate a low level of perceived conflict between work and family. Psychometric properties of the instrument; validity has been tested by principle components analysis using varimax rotation revealed one factor accounting for 69% of the variance for eigen-values greater 1.00. Internal consistency of the scale was supported by a Cronbach's alpha of 0.91 (Battistelli et al., 2013).

The work-family conflict scale was translated from English into Thai language with the same process of the job satisfaction questionnaire. The work-family conflict scale – Thai version contain the same format as the original one.

Content validity

After translation by using forward-backward approach, the instrument has been investigated the discrepancy and the relevance to the construct. The work-family conflict scale – Thai version was tested content validity with the same process of JS scale from a panel of five experts. The scale's content validity index (S-CVI) was 0.88 and 0.80-1.00 for I-CVI (Table 14). Thus, the work-family conflict scale – Thai version contain 5 items representing the content domain.

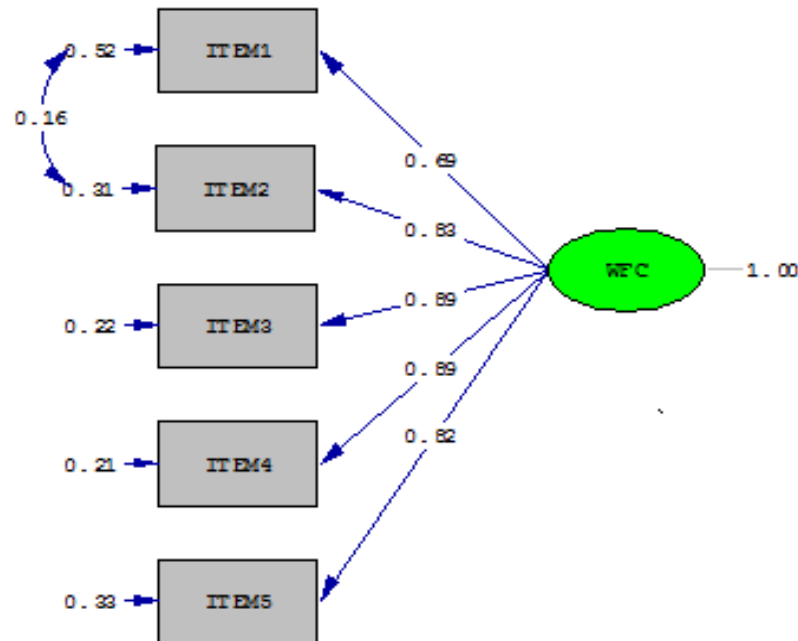
The item selection was conducted with the same process of JS scale. The result showed that all items of the work-family conflict scale – Thai version had item-total correlations 0.71-0.83.

Construct validity

The construct validity of the work-family conflict scale – Thai version was tested on the same process of the JS scale. To test construct validity, the confirmatory factor analysis (CFA) was utilized in order to assess whether the chosen component solution fitted the data adequately. The result showed that there were 5 items of the content domain in the CFA. The results showed that the factor loading of all items ranging from 0.71 to 0.89 were statistically significant at .05 (Table 13). All fit indices of the model were acceptable ($\chi^2 = 5.08$, $df = 4$, $\chi^2/df = 1.27$, $p\text{-value} = 0.28$, $GFI = 0.99$, $AGFI = 0.96$, $CFI = 1.00$, $PGFI = 0.26$, $RMSEA = 0.03$, $SRMR = 0.01$) as showed in Figure 9.

Table 13 Factor loading and construct validity of Work-Family Conflict Scale – Thai version (n = 207)

Work-Family Conflict Scale – Thai version	Mean	Item Total Correlation	Standardized factor loading
1. Demands of work interfere family life	3.09	.71	0.69
2. Amount of job makes it difficult to fulfill family responsibilities	3.25	.83	0.83
3. Demands of work make things I want to do at home do not get done	3.10	.82	0.89
4. Job makes it difficult to change plan for family activities	3.01	.83	0.89
5. Have to change plan for family activities due to job	3.44	.76	0.82



$\chi^2 = 5.08$, $df = 4$, $\chi^2/df = 1.27$, $p\text{-value} = 0.28$, $GFI = 0.99$, $CFI = 1.00$, $RMSEA = 0.03$

Note: WFC = Work-family conflict

Figure 9 Measurement model of work-family conflict

Reliability

Reliability of the work-family conflict scale – Thai version was determined by using Cronbach's alpha coefficient (α) for estimate the internal consistency. The result showed that the Cronbach's alpha was 0.92. The summary of the instrument is presented in Table 14. Furthermore, test-retest reliability which is a method of estimating test reliability in which a researcher gives the same test to the same group of research participants on two different occasions; was conducted. Pearson's correlation coefficient (r) was used to test test-retest during two weeks and result showed that Pearson's correlation coefficient (r) = 0.84.

Table 14 Number of items, scoring range, S-CVI, I-CVI, and reliability of Work-Family Conflict Scale – Thai version

Instrument	Number of item	Scoring range	S-CVI	I-CVI	Reliability α
Work-Family Conflict Scale – Thai version	5	5-25	0.88	0.80-1.00	0.92

6. Intention to leave nursing profession was translated and modified from Occupational Turnover Scale (van der Heijden et al., 2007) to measure intention to leave nursing profession. The original version of occupational turnover scale comprised of 3 items that asked about: “How often the course of the past year have you thought of giving up nursing completely?” “How often during the course of the past year have you thought of taking a further qualification outside nursing?” “How often during the course of the past year have you thought of giving up nursing completely to start a different kind of job?” Each item have to rate along a 5-point scale (1= never, 5= every day). Then, the intention to leave item was transformed to a dichotomous variable with no intention to leave nursing profession (score = 3) and intention to leave nursing profession (score > 3). Psychometric properties of the original instrument were tested by calculating internal consistency using Cronbach's Alpha. The three items produced an acceptable reliability level ($\alpha = 0.89$ at Time 1 and $\alpha = 0.85$ at Time 2) in investigating of occupational turnover intention among nurses (van der Heijden et al., 2007) in which it showed construct validity of leaving from the profession.

Due to the intention to leave nursing profession in this study has been focused on nurses' perception reflected the intensity of thought to terminate nursing

career, so respondents were asked to indicate the frequency of thought with these items that responded along 5-point (never to everyday) response scales. Therefore, the total scale could range from 3 to 15 by total sum score. The higher scores indicated high intention to leave nursing profession.

The Occupational Turnover scale was translated from English into Thai language with the same process of the job satisfaction questionnaire. The occupational turnover scale – Thai version contain the same format as the original one.

Content validity

After translation, for ensuring the translated instruments to achieve the relevance and represent the targeted construct for a particular assessment purpose, the content validity has been established. Three items contain in the scale were judged by multiple experts. This study, the content validity was established by a panel of five experts specializing in nursing administration area. The experts were instructed to rate each scale item in terms of its relevance to the underlying construct as the definition of the concepts represented. The standard four-point CVI rating scale was used to evaluate the items for their content, construct and conceptual relevance. The content validity of the measure was based on the expert concurrence using the content validity index (CVI), calculated for category evaluation and item evaluation. The CVI was calculated based on the number of experts giving a rating of either 3 or 4, divided by the number of experts. The result showed that the scale's content validity index (S-CVI) was found to be 0.93 and 0.80-1.00 for I-CVI (Table 16).

The item selection process and the precision of items were examined using corrected item-total correlation. The item-total correlation should be 0.30-0.70 (DeVellis, 2003). The results showed that 3 items of the Occupational Turnover scale

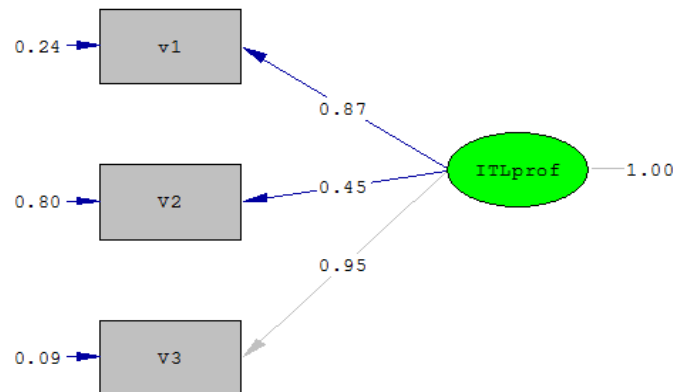
– Thai version had item-total correlations ranging from 0.44-0.79 as presented in Table 15.

Construct validity

Construct validity is the validity of theoretical involving building variables to be measured (Said et al., 2011). Confirmatory factor analysis (CFA) was utilized to assess construct validity in order to assess whether the chosen component solution fitted the data adequately. The significant loadings is greater than 0.30. The result showed that there were 3 items representing the content domain in the confirmatory factor analysis (CFA). The results showed that the factor loading of all items ranging from 0.45 to 0.95 were statistically significant at .05 (Table 16). All fit indices of the model were acceptable ($\chi^2 = 3.73$, $df = 1$, $p\text{-value} = 0.05$, $GFI = 0.99$, $CFI = 0.99$, $NFI = 0.98$, $SRMR = 0.09$) as showed in Figure 10.

Table 15 Factor loading and construct validity of the Occupational Turnover Scale – Thai version (n = 207)

Occupational Turnover Scale – Thai version	Mean	Item Total Correlation	Standardized factor loading
1. Thought of giving up nursing completely	2.54	.72	0.87
2. Thought of taking qualification outside nursing	2.42	.44	0.45
3. Thought of giving up nursing completely and plan to search a new job outside nursing profession	2.43	.79	0.95



$\chi^2 = 3.73$, $df = 1$, $p\text{-value} = 0.05$, $GFI = 0.99$, $CFI = 0.99$, $NFI = 0.98$, $SRMR = 0.09$

Note: ITLprof = Intention to Leave Nursing Profession

Figure 10 Measurement model of intention to leave nursing profession

Reliability

Reliability of the Occupational Turnover scale – Thai version was determined by using Cronbach's alpha coefficient (α) for estimate the internal consistency. The result showed that the Cronbach's alpha was 0.80. The summary of the instrument is presented in Table 16. Test-retest reliability was conducted to test stability of the instrument. Pearson's correlation coefficient (r) was used to test test-retest during two weeks among 74 (match paired) nurses in governmental hospitals. The result showed that Pearson's correlation coefficient was (r) = 0.86.

Table 16 Number of items, scoring range, S-CVI, I-CVI, and reliability of Occupational Turnover Scale – Thai version

Instrument	Number of item	Scoring range	S-CVI	I-CVI	Reliability α
Occupational Turnover Scale – Thai version	3	3-15	0.93	0.80-1.00	0.80

7. Demographics data was developed by the researcher. It comprised of 10 open-end questions used to collect demographic and socioeconomic data. All participants required to complete self-report questionnaires regarding their current age, gender, education level, work experienced, salary, marital status, working position, employment status (e.g. civil servant, government officers, temporary employee, government employee, and university employee), unit, and workplace.

Instrument summary

Six instruments had been translated and modified from existing instrument including the Occupational Turnover Intention scale (van der Heijden et al., 2007), the Index of Work Satisfaction scale (Stamps, 1997), the Nurses' Professional Commitment scale (Lin et al., 2007), the Copenhagen Burnout Inventory (Borritz et al., 2006), the Work-Family Conflict scale (Netemeyer et al., 1996), and the Practice Environment Scale of the Nursing Work Index (Lake, 2002). One instrument, Employment opportunity scale was developed by researcher.

Translation of the instrument used Brislin's translation model (Brislin, 1970) for approaching. Then, for ensuring the translated instruments to achieve the relevance and represent the targeted construct, the content validity has been established by the panel of five experts and the content validity index (CVI) was calculated for category evaluation and item evaluation. Next, the item selection process and the precision of items were examined using corrected item-total correlation.

Psychometric properties were tested validity and reliability. The reliability of total scale and subscale was evaluated by the following: a) Cronbach's alpha coefficient that estimates the internal consistency; b) Test-retest reliability is used the

interclass correlation coefficient (ICC) or Pearson correlation; c) corrected item-total correlation, with low item-total correlation ($r < 0.30$); items were deleted. Construct validity was established by confirmatory factor analysis (CFA) technique. All instruments in the study demonstrated satisfactory validity and reliability.

Protection of the rights of human subjects

This study was approved by the Ethical Review Committee for Research Involving Human Research Subjects, Health Sciences Group, Chulalongkorn University (ECCU) on January, 2015 and the Institutional Review Board (IRB) of each hospital during July, 2014- July, 2015. Permission for collecting the data was gathered by formal approval from the hospitals to conduct the study.

Participation in the study is voluntary and based on the staff nurses ability to give informed consent, and then the staff nurses were invited to participate. The participants will be received the explanation about the purpose of the study, benefits, risks, the types of questionnaires and tasks to be completed, and the length of time to complete the questionnaires. The potential risks to participants are minimal, such as emotional discomforts when answering some questions. Participants were encouraged that if any time they felt discomfort, they will able to discuss the importance of the question with the researcher and they can refuse to answer any question. Their names were not addressed in the data; a code number was used to ensure confidentiality. There is no harm to participants in this study and it would take approximate 60 minutes to complete a packet of the questionnaires. After completing the questionnaire, participants put it in an envelope and seal it. Data were computerized and accessible only by researcher. Results of the study would report as a whole picture. Any personal information was not appearing in the report. All master lists

containing names were locked up for storage and destroyed upon the completion of the study.

Data collection

Data collection was conducted after approval from the Chulalongkorn University ethics committee and the IRB of each hospital. It was carried out from 1 December 2014 to 9 January 2015. The steps involved in data collection were as follows:

1. After approval from the ethics committee, a letter asking for permission to collect data from the Faculty of Nursing, Chulalongkorn University was sent to each hospital for formal approval before starting data collection.
2. After obtaining formal approval of permission to collect the data from the hospital directors and nursing departments, the researcher had met nurse coordinators or head nurses of each hospital for describing the inclusion criteria of recruiting the sample.
3. Nurse coordinators or head nurses of each hospital distributed a survey packages to the sample whose gathering by using random sampling approach. Samples were recruited randomly from nurses who on duty in each unit on the collecting data date. A survey packages, including participant information sheet, informed consent, and packet of the questionnaires.
4. For sample those who met the inclusion criteria, each sample received written information; this information describes the purpose, content, benefit and risk of the study.
5. Participation in the study is voluntary and those who agree to give informed consent were eligible participating in this study.

6. After completed the questionnaire anonymously, nurses sealed their questionnaire and return to nurse coordinators or head nurses, and lastly return them to researcher. A souvenir (pen and colorful plastic document holder) was given to participant for their time contribution after completed the questionnaire.

7. Finally, each questionnaire was assigned a numerical code to maintain confidentiality.

Data analysis

A total of 405 from 422 questionnaires (95.9%) were determined to be usable for analysis. In preparation data analysis, outlier detection and missing data filling processes are essential step. The researcher checked and cleaned the data by screening and 10 % of the data were double checked randomly by the outside person to confirm the accuracy and verify the correctly typing or coding in the data file. To monitor the outliers, the modified z-score method was applied to detect outliers. The raw data was identified by the absolute of Z score that greater than 3.5 (Iglewicz & Hoaglin, 1993). Regarding this criteria, the result showed no any subject was excluded. The descriptive statistics such as numbers of sample, mean, median, and maximum and minimum values; was analyzed to investigate missing data and outliers by using the Statistical Package for Social Science (SPSS) program version 17.

After completed the data cleaning, the assumptions underlying path analysis including normality, linearity, homoscedasticity, and multicollinearity were tested. The results revealed that there was no assumption violation under path analysis.

Descriptive statistics, including frequencies, means, and standard deviations were used to describe the demographic data and to examine the distribution of demographic and other major variables in the study.

Path analysis was used to examine the direct, indirectly mediated, and total effect on intention to leave nursing profession by using LISREL version 8.53. An alpha level of .05 was set as the acceptable level of significance for this study. Pearson's Product Moment correlations were used to test for bivariate relationships among pairs of variables and to assess multicollinearity among the independent variables.



CHAPTER IV

RESULTS

This chapter presents the findings of the study. The findings present 1) demographic characteristics of the participants; 2) descriptive statistics of the study variables; and 3) statistical analysis to test factors influencing intention to leave nursing profession including Structural Equation Modeling (SEM).

Demographic characteristics of the participants

A total of 405 from 430 questionnaires (93.18%) were determined to be usable for analysis. The mean age of the participants was 37.57 years (SD = 9.23, range = 22-58 years). The majority of them were female (n= 393, 97%) and graduated in bachelor degree (n= 361, 89.1%). The majority of participants had work experience greater than 20 years was 27.9% (n = 113). Seventy seven of them have work experience less than 5 years (19.0%). Most participants had salary between 20,001-30,000 baht (n = 159, 39.3%). The majority of participants were married (n = 214, 52.9%). Civil servant was the majority group of employment status (n = 288, 71.1%). The most of nurses were working at medical (n = 70, 17.3%) and surgical unit (n = 63, 15.5%), respectively.

Table 17 Demographic characteristics of the study samples (n = 405)

Demographic characteristics	n	%
Age (years)		
< 30	97	24.0
30-39	154	38.0
40-49	98	24.2

Table 17 Demographic characteristics of the study samples (n = 405) (Cont.)

Demographic characteristics	n	%
≥ 50	56	13.8
Mean (SD)	37.57	(9.22)
Gender		
Female	393	97.0
Male	12	3.0
Education		
Bachelor	361	89.1
Master	44	10.9
Salary		
10,000-20,000	120	29.6
20,001-30,000	159	39.3
≥ 30,000	118	29.1
N/A	8	2.0
Marital status		
Single	177	43.7
Married	214	52.9
Widowed	11	2.7
Divorced	3	0.7
Work experience		
< 5 years	77	19.0
5-10 years	68	16.8
11-15 years	92	22.7
16-20 years	55	13.6
> 20 years	113	27.9
Employment status		
Civil servant	288	71.1
Government officer	29	7.2
Temporary employee	42	10.4
Government employee	11	2.7
University employee	35	8.6
Work unit		
Outpatient unit	24	5.9
Surgical unit	63	15.5
Medical unit	70	17.3

Table 17 Demographic characteristics of the study samples (n = 405) (Cont.)

Demographic characteristics	n	%
Intensive care unit	57	14.1
Emergency room	25	6.2
Pediatric unit	38	9.4
OBS-GYN, Labor	43	10.6
Operating room	23	5.7
Anesthetic	10	2.5
Orthopedic	10	2.5
EENT	18	4.4
Special unit	21	5.2
Other	3	0.7

Group differences in intention to leave nursing profession among nurses with different age, gender, year of experience, level of education, salary, and employment status used Analysis of Variance (ANOVA) to compare the mean intention to leave nursing profession total score (Table 18).

Table 18 Mean scores of total intention to leave nursing profession scale for nurses with different age, gender, work experience, level of education, salary, and employment status (n = 405)

Variable	Group	n	Mean	SD
Age	< 30	97	7.23	2.44
	30-39	154	7.36	2.99
	40-49	98	6.93	2.79
	≥ 50	56	5.55	2.57
Gender	Male	12	6.58	2.11
	Female	393	6.98	2.84
Level of education	Bachelor	361	6.97	2.78
	Master	44	7.02	3.10

Table 18 Mean scores of total intention to leave nursing profession scale for nurses with different age, gender, work experience, level of education, salary, and employment status (n = 405) (Cont.)

Variable	Group	n	Mean	SD
Work experience	< 5 years	77	7.31	2.54
	5-10 years	68	7.03	2.50
	11-15 years	92	7.34	3.01
	16-20 years	55	7.31	3.00
	> 20 years	113	6.25	2.84
Salary	10,000-20,000 baht	120	7.13	2.54
	20,000-30,000 baht	159	7.35	2.91
	> 30,000 baht	118	6.26	2.86
Marital status	Single	177	7.20	2.85
	Married	214	6.83	2.80
	Divorce	3	5.67	0.58
	widow	11	6.36	3.01
Employment status	Civil servant	288	6.89	2.78
	Government officer	29	7.03	3.21
	Temporary employee	42	7.19	2.74
	Government employee	11	7.64	3.07
	University employee	36	7.14	2.87

Before analyzing with ANOVA, equality of population variance was tested through Levene's test. Results showed no assumption violation. All variable are not reject hypothesis (Table 19). Therefore, Bonferroni test was used to test pair comparison in equality of population variance. Results of one way ANOVA in comparing mean of gender showed that the mean difference has no statistical significant at the 0.05 ($F = 0.236$, $df = 1$, 403, $p = 0.627$) (Table 20). The mean score of intention to leave nursing profession between male and female were not different. Results of one way ANOVA in comparing mean of gender showed that the mean difference has no statistical significant at the 0.05 ($F = 0.236$, $df = 1$, 403, $p = 0.627$).

The mean score of intention to leave nursing profession between male and female was not different (Table 19).

Results of one way ANOVA in comparing mean of level of education showed that the mean difference has no statistical significant at the 0.05 ($F = 0.015$, $df = 1$, 403 , $p = 0.901$). The mean score of intention to leave nursing profession between bachelor and master was not different (Table 19).

Results of one way ANOVA in comparing mean of marital status showed that the mean difference has no statistical significant at the 0.05 ($F = 0.930$, $df = 3$, 401 , $p = 0.426$). The mean score of intention to leave nursing profession among single, married, divorce, and widow were not different (Table 19).

Results of one way ANOVA in comparing mean of age showed that the mean difference has statistical significant at the 0.05 ($F = 6.197$, $df = 3$, 401 , $p = 0.000$). The mean score of intention to leave nursing profession among difference group were different. The comparison mean difference of intention to leave nursing profession between group showed that the mean difference between group of age below 30 year and group of age greater than 49 year has statistical significant at the 0.05 ($p = .002$). The mean difference of intention to leave nursing profession between group of age 30-39 year and group of age greater than 49 year group has statistical significant at the 0.05 ($p = .000$). The mean difference of intention to leave nursing profession between group of age 40-49 year and group of age greater than 49 year group has statistical significant at the 0.05 ($p = .019$) (Table 19).

Results of one way ANOVA in comparing mean of salary showed that the mean difference has statistical significant at the 0.05 ($F = 5.482$, $df = 2$, 394 , $p = 0.004$). The mean score of intention to leave nursing profession among difference

group were different. The comparison mean difference of intention to leave nursing profession between group showed that the mean difference between group 2 (20,001-30,000 baht) and group 3 (>30,000 baht) has statistical significant at the 0.05 ($p = .004$) (Table 19).

Results of one way ANOVA in comparing mean of work experience showed that the mean difference has statistical significant at the 0.05 ($F = 2.787$, $df = 4, 400$, $p = 0.026$). The mean score of intention to leave nursing profession among difference group of work experience were different (Table 19).

Results of one way ANOVA in comparing mean of employment status showed that the mean difference has no statistical significant at the 0.05 ($F = 0.313$, $df = 4, 400$, $p = 0.870$). The mean score of intention to leave nursing profession among civil servant, government officer, temporary employee, government employee, and university employee were not different (Table 19).

Table 19 ANOVA test with different age, gender, work experience, level of education, salary, and employment status (n =405)

Variable	Levene's Test		ANOVA							Bonferroni			
	F	Sig.	Variance	SS	df	MS	F	Sig.	Group i	Group j	Mean	SE	Sig.
Gender	2.28	.13	Between group	1.816	1	1.876	.236	.627	N/A				
			Within group	3202.825	403	7.947							
			Total	3204.701	404								
Education level	0.06	.81	Between group	0.123	1	.123	.015	.901	N/A				
			Within group	3204.578	403	7.952							
			Total	3204.701	404								
Marital status	1.31	.27	Between group	22.134	3	7.378	.930	.426	Single	Married	.36129	.28623	1.000
			Within group	3182.567	401	7.937			Single	Divorce	1.53107	1.64023	1.000
			Total	3204.701	404				Single	Widow	.83410	.87541	1.000
									Married	Divorce	1.16978	1.63787	1.000
									Married	Widow	.47281	.87097	1.000
									Divorce	Widow	-.69697	1.83495	1.000

Table 19 ANOVA test with different age, gender, work experience, level of education, salary, and employment status (n = 405) (Cont.)

Variable	Levene's		ANOVA						Bonferroni				
	F	Sig.	Varianc	SS	df	MS	F	Sig.	Group i	Group j	Mean diff.	SE	Sig.
Age	2.21	.09	Between group	141.994	3	47.331	6.197	0.00	< 30 yr.	30-39 yr.	-.13034	0.3582	1.000
			Within group	3062.707	401	7.638			< 30 yr.	40-49 yr.	0.29823	0.3958	1.000
			Total	3204.701	404				< 30 yr.	> 49 yr.	1.67323*	0.4638	0.002
Salary	1.77	.17	Between group	85.098	2	42.549	5.482	0.004	10,000-20,000 baht	20,001-30,000 baht	-.22720	0.3369	1.000
			Within group	3058.258	394	7.762			10,000-20,000 baht	> 30,000 baht	0.86229	0.3612	0.052
			Total	3143.355	396				20,001-30,000 baht	> 30,000 baht	1.08949*	0.3385	0.004
Work experience	1.55	.19	Between group	86.879	4	21.720	2.787	0.026	< 5 yr.	5-10 yr.	.28228	.46460	1.000
			Within group	3117.822	400	7.795			< 5 yr.	11-15 yr.	-.02527	.43122	1.000
			Total	3204.701	404				< 5 yr.	16-20 yr.	.00260	.49290	1.000

Table 19 ANOVA test with different age, gender, work experience, level of education, salary, and employment status (n = 405) (Cont.)

Variable	Levene's		ANOVA							Bonferroni				
	F	Sig.	Variance	SS	df	MS	F	Sig.	Group i	Group j	Mean diff.	SE	Sig.	
Work experience									< 5 yr.	> 20 yr.	1.06390	.41256	0.103	
									5-10 yr.	11-15 yr.	-.30754	.44649	1.000	
									5-10 yr.	16-20 yr.	-.27968	.50631	1.000	
									5-10 yr.	> 20 yr.	.78162	.42849	0.689	
									11-15 yr.	16-20 yr.	.02787	.47586	1.000	
									11-15 yr.	> 20 yr.	1.08917	.39205	0.057	
									16-20 yr.	> 20 yr.	1.06130	.45902	0.213	
Employed status	0.22	.93	Between group	9.984	4	2.496	0.313	0.870	Civil servant	Government officer	-.14559	.55058	0.792	
			Within group	3194.717	400	7.987			Civil servant	Temporary employee	-.30159	.46679	0.519	
			Total	3204.701	404				Civil servant	Government employee	-.74747	.86822	0.390	
									Civil servant	University employee	-.25397	.50589	0.616	

Table 19 ANOVA test with different age, gender, work experience, level of education, salary, and employment status (n = 405) (Cont.)

Variable	Levene's		ANOVA						Bonferroni					
	F	Sig.	Varianc	SS	df	MS	F	Sig.	Group i	Group j	Mean diff.	SE	Sig.	
									Government officer	Temporary employee	-.15599	.68233	0.819	
									Government officer	Government employee	-.60188	1.0007	0.548	
									Government officer	University employee	-.10837	.70965	0.879	
									Temporary employee	Government employee	-.44589	.95720	0.642	
									Temporary employee	University employee	.04762	.64680	0.941	
									Government employee	University employee	.49351	.97687	0.614	

Descriptive statistics of the study variables

The seven variables measured in this study included job satisfaction, professional commitment, burnout, nurse practice environment, work-family conflict, employment opportunity, and intention to leave nursing profession were examined. The detail of descriptive statistics for each variable is presented as follows:

Job satisfaction

Job satisfaction score is a continuous indicator calculated as a total for the overall level of satisfaction. The total scores of the job satisfaction ranged from 38 to 266 points with a mean of 158.80 (SD = 23.92). The job satisfaction scores had a negative skewness value (-0.22), thus indicating that most of the participants had scores of job satisfaction with values to the left of mean score. The kurtosis value of job satisfaction was also close to zero (-0.02), indicates a close proximity to a normal distribution. Based on the mean score, skewness, and the kurtosis value, it could be concluded that the participants as a whole had a moderate job satisfaction (Table 20).

Professional commitment

The total scores of the professional commitment ranged from 33 to 90 points with a mean of 66.32 (SD = 11.06). The professional commitment scores had a negative skewness values (-0.12), thus indicating that most of the participants had scores of professional commitment with extreme values to the left of mean score. The kurtosis value of social support was also a negative value (-0.44), thus suggesting that the professional commitment scores were shaped like a platykurtic (flattened curve) which means flatter than normal distribution. Based on the mean score, skewness, and the kurtosis value, it could be concluded that the participants as a whole had a moderate professional commitment (Table 20).

Burnout

The total scores of the burnout ranged from 1 to 5 points with a mean of 2.76 (SD = 0.67). The burnout scores had a positive skewness value (0.39), thus indicating that most of the participants had scores of burnout with extreme values to the right of mean score. The kurtosis value of depression was also close to zero (-0.06), thus suggesting that the burnout scores presents a close proximity to a normal distribution. Based on the mean score, skewness, and the kurtosis value, it could be concluded that the participants as a whole had a moderate burnout (Table 20).

Nurse practice environment

The total scores of the nurse practice environment ranged from 1 to 4 points with a mean of 2.83 (SD =0.37). The nurse practice environment scores had a negative skewness value (-0.04), thus indicating that most of the participants had scores of nurse practice environment with values to the left of mean score. The kurtosis value of barriers was also a positive value (1.66), thus suggesting that nurse practice environment scores were shaped like a platykurtic (flattened curve) which means flatter than normal distribution. Based on the mean score, skewness, and the kurtosis value, it could be concluded that the participants as a whole had a moderate nurse practice environment (Table 20).

Work-family conflict

The total scores of the work-family conflict ranged from 5 to 25 points with a mean of 15.80 (SD = 5.26). The work-family conflict scores had a negative skewness values (-0.15), thus indicating that most of the participants had scores of work-family conflict with values to the left of mean score. The kurtosis value of work-family conflict was also a negative value (-0.70), thus suggesting that the work-family

conflict scores were shaped like a platykurtic (flattened curve) which means flatter than normal distribution. Based on the mean score, skewness, and the kurtosis value, it could be concluded that the participants as a whole had a high work-family conflict (Table 20).

Employment opportunity

The total scores of the employment opportunity ranged from 4 to 20 points with a mean of 12.90 (SD = 3.40). The employment opportunity scores had a negative skewness value (-0.14), thus indicating that most of the participants had scores of employment opportunity with extreme values to the left of mean score. The kurtosis value of employment opportunity was also close to zero (0.09), thus suggesting that the employment opportunity scores indicate a close proximity to a normal distribution. Based on the mean score, skewness, and the kurtosis value, it could be concluded that the participants as a whole had a moderate employment opportunity (Table 20).

Table 20 Possible range, actual range, mean, standard deviation (SD), skewness, kurtosis of job satisfaction (n = 405)

Variable	Possible range	Actual range	Mean	SD	Skewness (Z value)	Kurtosis (Z value)
Job satisfaction	38-266	80-220	158.80	23.92	-0.22 (0.12)	-0.02 (0.24)
Professional commitment	18-90	33-90	66.32	11.06	-0.12 (0.12)	-0.44 (0.24)
Burnout	1-5	1-5	2.76	0.67	0.39 (0.12)	-0.06 (0.24)

Table 20 Possible range, actual range, mean, standard deviation (SD), skewness, kurtosis of job satisfaction (n = 405) (Cont.)

Variable	Possible range	Actual range	Mean	SD	Skewness (Z value)	Kurtosis (Z value)
Nurse practice environment	1-4	1.35-4.00	2.83	0.37	-0.04 (0.12)	1.66 (0.24)
Work-family conflict	5-25	5-25	15.80	5.26	-0.15 (0.12)	-0.70 (0.24)
Employment opportunity	4-20	4-20	12.90	3.40	-0.13 (0.12)	0.09 (0.24)
Intention to leave nursing profession	3-15	3-15	6.97	2.82	0.68 (0.12)	-0.03 (0.24)

Intention to leave nursing profession

The total scores of the intention to leave nursing profession ranged from 3 to 15 points with a mean of 6.97 (SD = 2.82). The intention to leave nursing profession scores had a positive skewness value (0.68), thus indicating that most of the participants had scores of intention to leave nursing profession with extreme values to the right of mean score. The kurtosis value of intention to leave nursing profession was also close to zero (-0.03), thus suggesting that the intention to leave nursing profession scores indicate close proximity to a normal distribution. Based on the mean score, skewness, and the kurtosis value, it could be concluded that the participants as a whole had a moderate intention to leave nursing profession (Table 21).

The proportion of nurses who had intended to leave the profession was 49.1% (n = 199) (rated respond on some times a month or more often). The proportion of

nurses who had no intended to leave the profession was 50.9% (n = 206) (rated respond on never and some times a year).

Table 21 Prevalence of intention to leave nursing profession (n = 405)

Intention to leave nursing profession item responses	Giving up nursing Completely (%)	Taking further qualification outside nursing (%)	Giving up nursing completely and finding job outside nursing (%)
Never	87 (21.5)	107 (26.4)	118 (29.1)
Sometime a year	146 (36.0)	162 (40.0)	148 (36.5)
Some times a month or more often	172 (42.5)	136 (33.6)	139 (34.4)
Total	405 (100)	405 (100)	405 (100)

Statistical analysis to test factors influencing intention to leave nursing profession

Preliminary analysis

Before analyzing with the structural equation model (SEM) analysis, normality, linearity, homoscedasticity, and multicollinearity were tested in order to ensure that there was no violation of the underlying assumption. The results of normality, linearity, homoscedasticity, and multicollinearity testing are presented below.

Normality testing

Normality tests are used to determine whether a data set is modeled for normal distribution. The main tests for the assessment of normality in present study were the empirical measures of a distribution shape characteristic (skewness and kurtosis) and the normal probability plots. Skewness is a measure of symmetry, or more precisely,

the lack of symmetry. Kurtosis is a measure of whether the data are peaked or flat relative to a normal distribution. The skewness of influencing variables ranged from -0.04 to 0.68, and the kurtosis of variables ranged from -0.02 to 1.66 (Table 22). According to Hair (2010), the z value of skewness and kurtosis not exceeding ± 1.96 which corresponds to a .05 level or ± 2.58 at the .01 probability level reflects a normal distribution. As for the influencing variables, the z value of skewness = 0.12 and kurtosis = 0.24 that were within the normal curve. Additionally, the Kolmogorov-Smirnov test and Q-Q plot indicated that the seven major variables were normally distributed (Appendix G, Figure 12).

Linearity Testing

SEM is equivalent to form of multiple regression analysis that requires a linear relationship between the independent variables and the dependent variable. The linearity assumption can best be tested with scatter plots. A scatterplot consists of an X axis (the horizontal axis), a Y axis (the vertical axis), and a series of dots. Scatterplots are described in terms of linearity, slope, and strength. Nonlinearity is indicated when most of the residuals are above the zero line on the plot at some predicted values and below the zero line at other predict values (Tabachnick & Fidell, 2007). In other words, the assumption of linearity is met when the standardized residual values are randomly around the horizontal line. In the current study, the scatter plot between independent and dependent variables showed such a linear relationship (Appendix G, Figure 12).

Homoscedasticity testing

The assumption of homoscedasticity is principal to linear regression analysis. Homoscedasticity refers to the dependent variable exhibits similar amounts of

variance across the range of values for the independent variable (Hair et al., 2010). This assumption can be tested by a visual examination of the plot of the regression of the standardized predicted dependent variable against the regression standardized residual. The scatter plot is a crucial method to check whether homoscedasticity is given. Homoscedasticity is indicated when the residual plots pattern did not deviate from a horizontal band; the spread was equivalent across the zero axis within ± 2 . In the current study, the scatter plot of residuals showed the results from homoscedastic data (Appendix G, Figure 12).

Multicollinearity testing

Multicollinearity is a statistical phenomenon in which two or more predictor variables in a multiple regression model are themselves highly correlated. Two common criteria used to identify multicollinearity are: 1) Pearson's correlation coefficients and 2) tolerance values and variance inflation factor (VIF). Regarding the criteria, the correlation of two variables does not exceed $\pm .9$ indicates that there is no multicollinearity (Hair et al., 2010). In the current study, the correlation coefficients among the seven major variables ranged from -0.46 to 0.53 (Table 23). Thus, the correlation coefficients indicated no multicollinearity. In addition, the tolerance value less than .1 or VIF value greater than 10 indicates significant multicollinearity (Hair et al., 2010). In the current study, the tolerance value ranged from 0.55 to 0.84 (not approaching 0) and VIF value ranged from 1.19 to 1.80 (not greater than 10) (Table 22). Thus, these results confirmed no violation for multicollinearity.

Table 22 Assessment for multicollinearity among the predicting variables (n = 405)

Variable	Collinearity Statistics	
	Tolerance	Variance Inflation Factor (VIF)
Job satisfaction	.555	1.801
Professional commitment	.705	1.419
Burnout	.607	1.649
Nurse practice environment	.692	1.445
Work-family conflict	.644	1.553
Employment opportunity	.841	1.188

Principal analysis

Regarding research question and research hypotheses, the model and hypothesis testing are described below.

1. The relationship among job satisfaction, professional commitment, burnout, nurse practice environment, work-family conflict, employment opportunity, and intention to leave nursing profession among registered nurses in governmental hospitals

To describe the relationship among factors influencing intention to leave nursing profession, bivariate pearson's correlations were used to evaluate. The magnitude of relationships was determined by the following criteria: $r < .30$ = weak or low relationship, $.30 \geq r \leq .50$ = moderate relationship and $r > .50$ = strong or high relationship (Burns & Grove, 2009).

The results showed that most of variables had a moderate correlation, at the statistical significance level of .01. The results showed that a moderate positive

correlation existed between job satisfaction and professional commitment ($r = .46$). Nurse practice environment had a moderate positive and professional commitment ($r = .37$). Burnout had a moderate negative correlation with job satisfaction and professional commitment ($r = -.46$ and $r = -.43$), respectively. Work-family conflict had a moderate negative correlation with job satisfaction ($r = -.40$) and had positive correlation with employment opportunity ($r = .38$). Intention to leave nursing profession had a moderate negative correlation with job satisfaction and professional commitment ($r = -.36$ and $r = -.39$), respectively. Nurse practice environment had a highest positive correlation with job satisfaction ($r = .53$). In contrast, employment opportunity had non-significant correlation with nurse practice environment and professional commitment ($r = -.02$ and $r = -.06$), respectively (Table 23).

Table 23 Pearson's relationships among variables (n = 405)

Variables	JS	PC	BO	NPE	WFC	EO	ITL
JS	1						
PC	.46**	1					
BO	-.46**	-.43**	1				
NPE	.53**	.37**	-.29**	1			
WFC	-.40**	-.26**	.51**	-.20**	1		
EO	-.16**	-.06	.26**	-.02	.38**	1	
ITL	-.36**	-.39**	.49**	-.23**	.40**	.30**	1

Note: **p < .01 JS = job satisfaction, PC = professional commitment, BO = burnout, NPE = nurse practice environment, WFC = work-family conflict, EO = employment opportunity, ITL = intention to leave nursing profession

2. The hypothesized model explain intention to leave nursing profession

2.1 Model testing

The model of intention to leave nursing profession was tested using a two-step approach. Firstly, the measurement model was tested, and followed by the structural equation model.

2.1.1 Assessment of measurement models

The measurement model determines how latent variables or construct are indicated by the observed variables. In this study, 7 variables were investigated to specify reliability and construct validity using confirmatory factor analysis (CFA). This section presents the fit indices of the measurement models along with the reliability (R^2) and standardized validity coefficient (λ^s) using confirmatory factor analysis.

The results of CFA show that the seven measurement models had a good overall model fit (Table 24). The second-order CFA shows that all measurements had the normed fit chi-square (χ^2/df) within the recommended values less than three; the goodness-of-fit index (GFI) and the Comparative Fit Index (CFI) values close to 1.00 (displays a range of 0–1, with an acceptable fit index value of >0.90 and >0.95 is an excellent fit index); and finally the RMSEA <0.05 (indicates a good fit when values of <0.05 are achieved) ranged from 0.03 to 0.06 (Hu & Bentler, 1999; Kline, 1998). These results indicated validity of measurement constructs (CFA Of the measurement model are presented in Appendix H, Figure 13-16).

Table 24 Statistical Overall Fitted Index values of measurement models (n = 405)

Variables	χ^2	df	χ^2/df	GFI	CFI	RMSEA
JS	1337.75	610	2.19	0.85	0.94	0.05
PC	277.65	102	2.72	0.93	0.98	0.06
BO	286.60	133	2.15	0.93	0.99	0.05
NPE	838.65	417	2.01	0.88	0.98	0.05
WFC	4.06	3	1.35	1.00	1.00	0.03
EO	1.18	1	1.18	1.00	1.00	0.03
ITL	4.54	2	2.27	0.99	0.99	0.05

Note: GFI = Goodness-of-Fit Index
 CFI = Comparative Fit Index
 RMSEA = Root Mean Square Error of Approximation
 JS = Job satisfaction
 PC = Professional commitment
 BO = Burnout
 NPE = Nurse practice environment
 WFC = Work-family conflict
 EO = Employment opportunity
 ITL = Intention to leave nursing profession

Based on an accepted level of .05, the t-value test statistic needs to be $> +1.96$ before the hypothesis could be rejected. The loading with t-values and squared multiple correlations among all observed variables were presented in Table 26. The results indicate that all sub-scales of the measurement had significant low to high parameter estimates which were related to their specific constructs and validated the relationships among observed variables and their constructs. Furthermore, the squared multiple correlations (R^2) for observed variables of the latent variables ranged from 0.28 to 1.00 (Table 25).

Table 25 Loading and reliability of indicators

Construct and Indicators	Factor loading	t-value	SE	R²
JS				
• PAY	0.55-0.64	6.73-9.13	0.10-0.15	0.28
• PROF	0.33-0.50	5.26-13.13	0.15-0.23	0.88
• INTERACT	0.21-0.79	3.73-13.58	0.08-0.14	0.65
• TASK	0.33-0.56	5.15-13.84	0.09-0.15	1.00
• ORG	0.26-0.57	3.73-13.88	0.10-0.23	0.82
• AUTO	0.32-0.63	4.65-13.60	0.08-0.13	0.74
PC				
• COMPLI	0.45-0.79	10.26-13.91	0.04-0.06	0.85
• INVOLVE	0.56-0.76	9.32-13.18	0.04-0.05	0.36
• RETENT	0.80-0.93	4.70-16.06	0.06-0.08	0.69
BO				
• PERSONAL	0.66-0.97	12.50-22.84	0.03-0.06	0.77
• WORK	0.75-0.83	12.56-21.21	0.03-0.06	1.00
• CLIENT	0.38-0.81	5.00-17.89	0.03-0.07	0.66
NPE				
• AFFAIR	0.55-0.76	9.59-16.55	0.02-0.05	0.55
• FOUNDA	0.46-0.77	7.03-13.52	0.02-0.05	0.52
• LEADER	0.65-0.79	11.85-14.45	0.02-0.03	0.46
• STAFF	0.67-0.96	8.02-12.82	0.05-0.08	0.39
• RELATION	0.82-0.93	12.06-23.41	0.01-0.02	0.35
WFC	0.76-0.90	17.23-22.81	0.04-0.06	1.00
EO	0.50-0.75	9.72-13.73	0.05-0.07	1.00
ITL	0.50-1.00	10.03-22.86	0.04-0.05	1.00

Note: R² = Square multiple correlation

JS = Job satisfaction

PAY = Pay

PROF = Professional status

TASK = Task

INTERACT = Interaction

ORG = Organizational policies

AUTO = Autonomy

PC = Professional commitment

COMPLI	= Compliance
INVOLVE	= Involvement
RETENT	= Retention
BO	= Burnout
PERSONAL	= Personal burnout
WORK	= Work burnout
CLIENT	= Client burnout
NPE	= Nurse practice environment
AFFAIR	= Nurse participation in hospital affairs
FOUNDA	= Nursing foundation for quality of care
LEADER	= Nurse manager ability, leadership, and support of nurses
STAFF	= Staffing and resource adequacy
RELATION	= Collegial nurse-physician relations
WFC	= Work-family conflict
EO	= Employment opportunity
ITL	= Intention to leave nursing profession

2.1.2 Assessment of structural model

Formerly the acceptable measurement models were determined; the structural equation modeling (SEM) was analyzed. Structural equation modeling (SEM) is a statistical methods designed to test a conceptual or theoretical model. In SEM, there are two main component that included the structural model which showing the potential causal dependencies between endogenous and exogenous variables, and the measurement model which showing the relations between latent variables and their indicators.

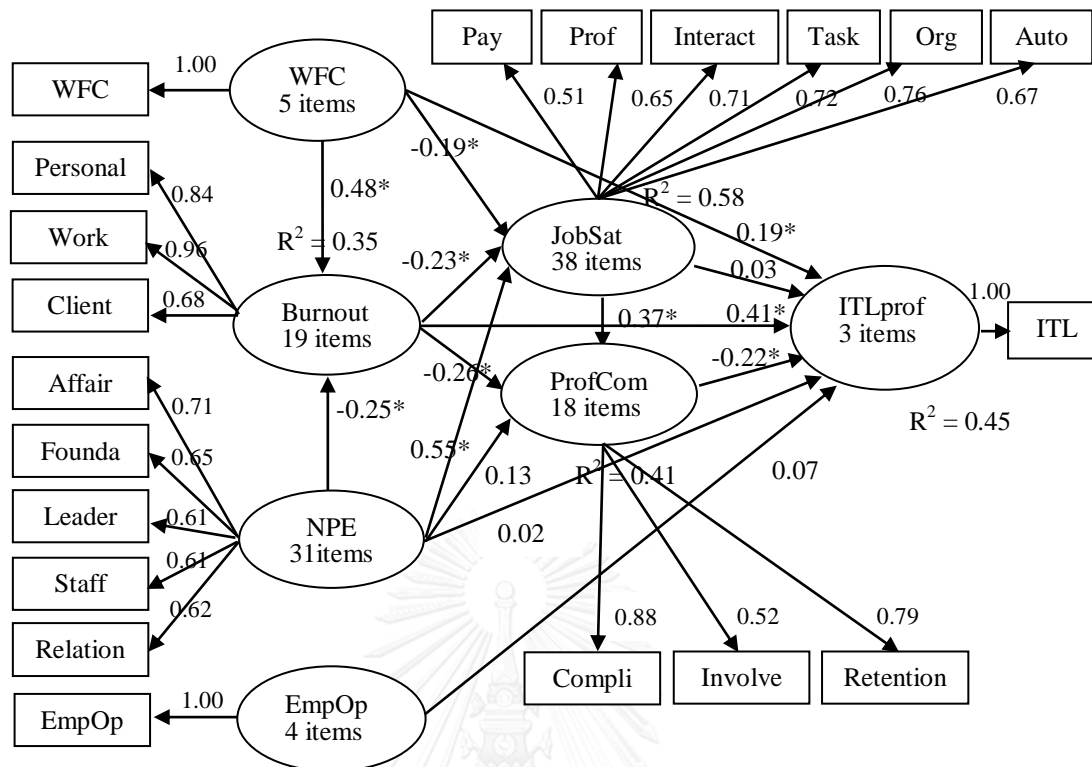
Model identification

In the present study, six statements of hypotheses were tested. Before testing hypotheses, the identification of the path model is required to examine because the computer program will run when the model is only over-identification (Hair et al., 2010). According to Hair et al. (2010), over-identification is one with

more data points than free parameters. The formula of number of data points is $\frac{p(p+1)}{2}$, where p equals the number of observed variables (Hair et al., 2010). In the hypothesized model, there were 20 measured variables with a total of 105 data points: $\frac{20(20+1)}{2} = 210$ and 57 parameters. This study the hypothesized model had 153 fewer parameters than data points. Therefore, this model was over-identification which meant that it could be identified.

Hypothesized model testing and model modification

The model was examined that whether the hypothesized path model (Figure 1) fit the data, the path coefficients and the variance of the model (R^2) were estimated. The effects of the independent variables (job satisfaction, professional commitment, burnout, nurse practice environment, work-family conflict, and employment opportunity) on the dependent variable (intention to leave nursing profession) were determined to reply the research questions and test the hypotheses. The results reveal that the hypothesized model did not fit the data using the following values $\chi^2=586.03$, $df=156$, $\chi^2/df=1.83$, $p=0.00$, $GFI=0.87$, $CFI=0.94$, and $RMSEA=0.08$. The initial hypothesized model accounted for 45% of variance of the intention to leave nursing profession among the study sample as presented in Figure 11. However, Chi-square tests show high values with p -value = 0.00 and the RMSEA values in the current study were higher than expected. The GFI values were less than the acceptable value of 0.90. These fit indices indicate the hypothesized model provided a bad fit with the data, the model need to re-specify. To decrease χ^2 values, the modification indices, standardized residuals, and expected value suggested through the Theta-Epsilon (TE), Theta-Delta- Epsilon (TH) and Theta-Delta (TD) were used.



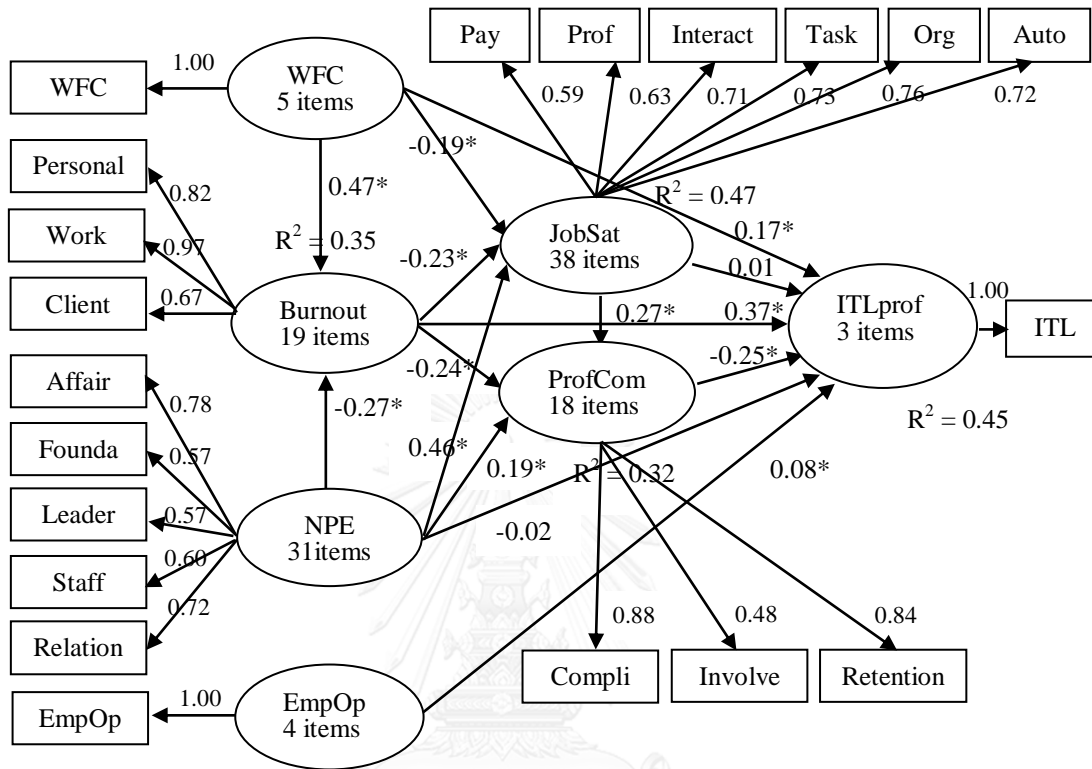
Goodness-of-fit indices: $\chi^2 = 586.03$, $df = 156$, $\chi^2/df = 1.83$, $p = 0.00$, $GFI = 0.87$, $CFI=0.94$, $RMSEA= 0.08$

Note: * $p < .05$

Figure 11 The proposed model of intention to leave nursing profession among registered nurses in governmental hospitals

The revised model shows a better value for goodness-of-fit than the initial model. The χ^2 test was non-significant ($\chi^2 = 152.67$, $df = 127$, $p = 0.06$), indicating a good fit. The ratio of χ^2 to the degrees of freedom was less than 2 ($\chi^2/df = 1.83$) which indicates the relative efficiency of the competing model in accounting for the data (Table 26). The revised model shows overall fit index were presented in acceptable ranged; the GFI and AGFI were greater than 0.90 ($GFI = 0.96$, $AGFI = 0.94$) and the RMSEA was less than 0.05 ($RMSEA = 0.02$). It indicates that the

revised model had a better fit with the empirical data as presented in Figure 12 and Table 27.



Goodness-of-fit indices: $\chi^2 = 152.67$, $df = 127$, $\chi^2/df = 1.20$, $p = 0.06$, GFI = 0.96, CFI = 1.00, RMSEA = 0.02

Note: * $p < .05$

Figure 12 The revised model of intention to leave nursing profession among registered nurses in governmental hospitals

Table 26 Standardized path coefficients, standard error (SE), and T-value of parameters of the final model of the intention to leave nursing profession among registered nurses (n = 405)

Path diagram	Standardized path coefficients	SE	T- value
Gamma			
WFC → ITL	0.17	0.05	3.74*
WFC → JS	-0.19	0.05	-3.9*
WFC → BO	0.47	0.05	9.87*
NPE → ITL	-0.02	0.06	-0.42
NPE → PC	0.19	0.06	3.34*
NPE → JS	0.46	0.06	7.39*
NPE → BO	-0.27	0.05	-5.67*
EO → ITL	0.08	0.04	2.17*
Beta			
PC → ITL	-0.25	0.06	-4.17*
JS → ITL	0.01	0.06	0.15
JS → PC	0.27	0.07	3.87*
BO → ITL	0.37	0.05	7.32*
BO → PC	-0.24	0.05	-4.75*
BO → JS	-0.23	0.05	-4.14*

*p < .05

Note: JS = Job satisfaction
 PC = Professional commitment
 BO = Burnout
 NPE = Nurse practice environment
 WFC = Work-family conflict
 EO = Employment opportunity
 ITL = Intention to leave nursing profession

Table 27 Comparison of the goodness-of-fit statistics in the initially-hypothesized model and the final model of the intention to leave nursing profession among registered nurses

Relative fit index	Initial model	Revised model	Criterion of Goodness-of-Fit
χ^2 -test	586.03 ($p = 0.00$)	152.67 ($p = 0.06$)	($p < .05$) non-significant
χ^2/df	586.03/156= 1.83	152.67/127=1.20	< 3.00
CFI	0.94	1.00	≥ 0.95
GFI	0.87	0.96	≥ 0.90
AGFI	0.83	0.94	≥ 0.80
NFI	0.92	0.98	≥ 0.90
RMSEA	0.08	0.02	< 0.05
SRMR	0.06	0.04	< 0.08
R^2	0.45	0.45	> 0.50

Note: χ^2 = Chi-square, df = degree of freedom, CFI = Comparative Fit Index, GFI = Goodness of Fit Index, AGFI = Adjust Goodness of Fit Index, NFI = Normed Fit Index, RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Square Residual

In account to measurement model, all indicators loading ranged from 0.48 to 1.00 suggesting that most indicators were sufficient to represent the constructs. For structural model, as for the path coefficient the most of dependence variables were statistically significantly predicted intention to leave nursing profession, except job satisfaction ($\beta = 0.01$) and nurse practice environment ($\beta = -0.02$), and path coefficients of burnout had the most impact on intention to leave nursing profession ($\beta = .37$) followed by professional commitment ($\beta = -0.25$). The R^2

for the structural equation was 0.45, indicating that the revised model accounted for 45% of the variance in intention to leave nursing profession by job satisfaction, professional commitment, burnout, nurse practice environment, work-family conflict, and employment opportunity. For other predictors, the model accounted for 47% of the variance in job satisfaction by work-family conflict, burnout, and nurse practice environment, 35% of the variance in burnout by work-family conflict and nurse practice environment, and 32% of the variance in professional commitment by job satisfaction, burnout, nurse practice environment, and work-family conflict. In conclusion, the study findings revealed that the revised hypothesized model fit the empirical data.

3. Hypothesis testing

Six hypotheses and direct and indirect effects of influencing factors on intention to leave nursing profession were evaluated. The results of the effects of influencing factors on intention to leave nursing profession were described as the following.

3.1 Effect of job satisfaction on intention to leave nursing profession

Job satisfaction had a significant positive direct effect on professional commitment ($\beta = 0.27, p < .05$) and a non-significant positive direct effect on intention to leave nursing profession ($\beta = 0.01, p > .05$). Job satisfaction had a significant negative indirect effect on intention to leave nursing profession through professional commitment ($\beta = -0.07, p < .05$). The total effect of job satisfaction on intention to leave nursing profession was $-0.06, p > .05$.

3.2 Effect of professional commitment on intention to leave nursing profession

Professional commitment had a significant negative direct effect on intention to leave nursing profession ($\beta = -0.25, p < .05$). The total effect of professional commitment on intention to leave nursing profession was $-0.25, p < .05$.

3.3 Effect of burnout on intention to leave nursing profession

Burnout had a significant negative direct effect on job satisfaction ($\beta = -0.23, p < .05$) and a significant positive direct effect on intention to leave nursing profession ($\beta = 0.37, p < .05$). Burnout had a significant negative direct effect on professional commitment ($\beta = -0.24, p < .05$). Burnout had a significant positive indirect effect on intention to leave nursing profession professional commitment through job satisfaction and professional commitment ($\beta = 0.07, p < .05$). The total effect of burnout on intention to leave nursing profession, job satisfaction, and professional commitment were $0.44, -0.23, -0.30$, respectively, $p < .05$.

3.4 Effect of work-family conflict on intention to leave nursing profession

Work-family conflict had a significant negative direct effect on job satisfaction ($\beta = -0.19, p < .05$) and a significant positive direct effect on burnout ($\beta = 0.47, p < .05$). Work-family conflict had a significant positive direct effect on intention to leave nursing profession ($\beta = 0.17, p < .05$). Work-family conflict had a significant negative indirect effect on job satisfaction ($\beta = -0.11, p < .05$) and a significant negative indirect effect on professional commitment ($\beta = -0.19, p < .05$). Work-family conflict had a significant negative indirect effect on intention to leave nursing profession through job satisfaction, burnout, and professional commitment

($\beta = 0.22, p < .05$). The total effect of work-family conflict on intention to leave nursing profession, job satisfaction, professional commitment, and burnout were 0.39, -0.30, -0.19, 0.47, respectively, $p < .05$.

3.5 Effect of nurse practice environment on intention to leave nursing profession

Nurse practice environment had a significant positive direct effect on job satisfaction ($\beta = 0.46, p < .05$) and a significant positive direct effect on professional commitment ($\beta = 0.19, p < .05$). Nurse practice environment had a significant negative direct effect on burnout ($\beta = -0.27, p < .05$) and had a non-significant negative direct effect on intention to leave nursing profession ($\beta = -0.02, p > .05$). Nurse practice environment had a significant positive indirect effect on job satisfaction ($\beta = 0.06, p < .05$) and a significant positive indirect effect on professional commitment ($\beta = 0.20, p < .05$). Nurse practice environment had a significant positive indirect effect on intention to leave nursing profession through job satisfaction and professional commitment ($\beta = -0.20, p < .05$). The total effect of nurse practice environment on intention to leave nursing profession, job satisfaction, professional commitment, and burnout were -0.22, 0.52, 0.39, -0.27, respectively, $p < .05$.

3.6 Effect of employment opportunity on intention to leave nursing profession

Employment opportunity had a significant positive direct effect on intention to leave nursing profession ($\beta = 0.08, p < .05$). The total effect of employment opportunity on intention to leave nursing profession was 0.08, $p < .05$.

Table 28 Summary of the total, direct, and indirect effects of the influencing variables on the affected variables (n=405)

Endogenous Variables	R²	Influencing Variables	TE	IE	DE
Intention to leave nursing profession	0.45	Job satisfaction	-0.06	-0.07*	0.01
		Professional commitment	-0.25*	-	-0.25*
		Burnout	0.44*	0.07*	0.37*
		Nurse practice environment	-0.22*	-0.20*	-0.02
		Work-family conflict	0.39*	0.22*	0.17*
		Employment opportunity	0.08*	-	0.08*
Job satisfaction	0.47	Work-family conflict	-0.30*	-0.11*	-0.19*
		Burnout	-0.23*	-	-0.23*
		Nurse practice environment	0.52*	0.06*	0.46*
Professional commitment	0.32	Job satisfaction	0.27*	-	0.27*
		Burnout	-0.30*	-0.06*	-0.24*
		Nurse practice environment	0.39*	0.20*	0.19*
		Work-family conflict	-0.19*	-0.19*	-
Burnout	0.35	Work-family conflict	0.47*	-	0.47*
		Nurse practice environment	-0.27*	-	-0.27*

*p < .05

Note: TE = Total effect, IE = Indirect effect, DE = Direct effect

The research hypotheses are listed in the followings:

Hypothesis 1: *Job satisfaction has negative direct effect on intention to leave nursing profession, and has negative indirect effect on intention to leave nursing profession through professional commitment.*

According to the revised model, job satisfaction had a non-significant direct effect on intention to leave nursing profession ($\beta = 0.01$, $p > .05$) (Table 28, Figure 12). On the other hand, job satisfaction had a significant negative indirect effect on intention to leave nursing profession through professional commitment ($\beta = -0.07$, $p < .05$). Therefore, hypothesis one is partially supported as proposed in the hypothesized model of intention to leave nursing profession among registered nurses in governmental hospitals.

Hypothesis 2: *Professional commitment has negative direct effect on intention to leave nursing profession.*

The parameter estimates reveal that professional commitment has a significant negative direct effect on intention to leave nursing profession ($\beta = -0.25$, $p < .05$) (Table 28, Figure 12). Therefore, hypothesis two is supported as proposed in the hypothesized model of intention to leave nursing profession among registered nurses in governmental hospitals.

Hypothesis 3: *Burnout has positive direct effect on intention to leave nursing profession, and has positive indirect effect on intention to leave nursing profession through job satisfaction and professional commitment.*

The parameter estimates reveal that burnout has a significant positive direct effect on intention to leave nursing profession ($\beta = 0.37$, $p < .05$) and a significant negative direct effect on job satisfaction ($\beta = -0.23$, $p < .05$) and

professional commitment ($\beta = -0.24, p < .05$) (Table 28, Figure 12). Burnout had a significant positive indirect effect on intention to leave nursing profession professional commitment through job satisfaction and professional commitment ($\beta = 0.07, p < .05$). Therefore, hypothesis three is supported as proposed in the hypothesized model of intention to leave nursing profession among registered nurses in governmental hospitals.

Hypothesis 4: *Work-family conflict has direct positive effect on intention to leave nursing profession, and burnout, and positive indirect effect on intention to leave nursing profession through job satisfaction and professional commitment.*

The parameter estimates reveal that work-family conflict has a significant positive direct effect on intention to leave nursing profession ($\beta = 0.17, p < .05$) and burnout ($\beta = 0.47, p < .05$) (Table 28, Figure 12). On the other hand, work-family conflict has a significant negative direct effect on job satisfaction ($\beta = -0.19, p < .05$) and a significant negative indirect effect on job satisfaction ($\beta = -0.11, p < .05$) and professional commitment ($\beta = -0.19, p < .05$). Work-family conflict had a significant negative indirect effect on intention to leave nursing profession through job satisfaction, burnout, and professional commitment ($\beta = 0.22, p < .05$). Therefore, hypothesis four is supported as proposed in the hypothesized model of intention to leave nursing profession among registered nurses in governmental hospitals.

Hypothesis 5: *Nurse practice environment has direct negative effect on intention to leave and burnout, and has positive indirect effect on intention to leave through job satisfaction and professional commitment.*

The parameter estimates reveal that nurse practice environment had a non-significant negative direct effect on intention to leave nursing profession ($\beta = -0.02,$

$p > .05$), but has a significant negative direct effect on burnout ($\beta = -0.27, p < .05$). On the other hand, nurse practice environment has a significant positive direct effect on job satisfaction ($\beta = 0.46, p < .05$) and professional commitment ($\beta = 0.19, p < .05$) (Table 28, Figure 12). Moreover, nurse practice environment has a significant positive indirect effect on job satisfaction ($\beta = 0.06, p < .05$) and professional commitment ($\beta = 0.20, p < .05$). Nurse practice environment has a significant negative indirect effect on intention to leave nursing profession through job satisfaction and professional commitment ($\beta = -0.20, p < .05$). Therefore, hypothesis five is partially supported as proposed in the hypothesized model of intention to leave nursing profession among registered nurses in governmental hospitals.

Hypothesis 6: *Employment opportunity has positive direct effect on intention to leave nursing profession.*

The parameter estimates reveal that employment opportunity has a significant positive direct effect on intention to leave nursing profession ($\beta = 0.08, p < .05$) (Table 28, Figure 12). Therefore, hypothesis six is supported as proposed in the hypothesized model of intention to leave nursing profession among registered nurses in governmental hospitals.

Summary

The descriptive statistical characteristics of the variables investigated in current study have been explained. The assumptions of the path analysis were tested and the results were acceptable. The revised hypothesized model of intention to leave nursing profession showed the goodness-of-fit was in the acceptable range. Therefore, the model was useful to explain the factor influencing intention to leave nursing

profession. All of the variables in the model explained 45% of the variance in the intention to leave nursing profession among registered nurses.



CHAPTER V

DISCUSSION

The aim of this study was to examine factor influencing intention to leave nursing profession among registered nurses in governmental hospitals and identify the direct and indirect relationships of job satisfaction, professional commitment, burnout, nurse practice environment, work-family conflict, employment opportunity on intention to leave nursing profession among registered nurses in governmental hospitals. This chapter provides the discussion of the study findings. It includes a discussion of the characteristics on the study sample, model and hypothesis testing, conclusion, implications for nursing, and recommendations for future research.

Characteristics of the study sample

The majority of participants in this study were between 30-39 years of age (38%). The work experience ranged between 11-20 years (36.3%). The majority of them was female (97%) and graduated with bachelor degree (89.1%). Most participants had salary between 20,000-29,999 baht (39.3%). The majority of them were married (52.9%). Civil servant was the majority group of employment status (71.1%). Most of them worked at medical and surgical unit (17.3% and 15.5%, respectively). The characteristics of the study sample were similar to those of previous studies. The primary data of nurse workforce from the Ministry of Public Health database shows the majority of registered nurse were between 30-39 years of age (42.64%) (Sawaengdee, 2009). In addition, the data from Thailand Nursing and Midwifery Councils shows nurses aged between 30-39 years were 57,207 of 142,669 (40.1%) and graduated with bachelor degree (80.8%). The majority of them were

married (60.7%) and employment status with civil servants (76.9%) (Khunthar, Kedcham, Sawaengdee, & Theerawit, 2013).

Regarding previous studies indicated demographic data such as, age; gender was significantly related to intention to leave the profession (Rudman et al., 2014). The current study reveals the mean difference of intention to leave nursing profession among group of age below 30 year, 30-39 year, 40-49 year, and age greater than 49 year has statistical significant at the 0.05 ($F = 6.197$, $df = 3, 401$, $p = 0.000$). The mean score of intention to leave nursing profession among difference group were different. The findings show that nurses who aged greater than 49 year were less likely intended to leave nursing profession when compare with those aged below 30 year, 30-39 year, and 40-49 year. This result was similar to the previous studies. Many studies were found that young nurses (those under 35 years old) had greater intentions to leave the profession compared with older nurses (Flinkman et al., 2008; O'Brien-Pallas et al., 2006; Salminen, 2012; Simon et al., 2010). The young nurses were mostly new graduates who had limited clinical experience. They were likely to encounter challenges during the transition from education to practice with which they will find it difficult to cope. For these nurses, a lack of workplace support may lead to burnout and increased intentions to leave the profession (Flinkman et al., 2010). Thus, there is a need to improve preceptorship, comprehensive orientations (Dyess & Sherman, 2009), and supportive environments (Lavoie-Tremblay, O'Brien-Pallas, Ge'linas, Desforages, & Marchionni, 2008) for younger nurses and new graduates.

Furthermore, the current study reveals the mean score of intention to leave nursing profession among difference group of work experience ($F = 2.787$, $df = 4$, 400 , $p = 0.026$) and difference group of salary were different ($F = 5.482$, $df = 2, 394$,

$p = 0.004$). These findings indicate that nurses who had high work experience (> 20 year) are less likely to leave the nursing profession. In addition, nurses who received high salary ($>30,000$ baht) also show low intention to leave from nursing profession. These findings are similar to previous evidence, nurses who had higher level of years of experience are the greater the RN occupational commitment which lead the lower intent to leave the nursing profession (Nogueras, 2006). Moreover, nurses' intentions to leave the profession were found to connect with the dissatisfaction on salary levels or poor salary (Flinkman et al., 2008; Li, 2012). Several studies indicated nurses who have highly intent to leave nursing profession, were perceived an imbalance between salary and responsibility and compared salary with nursing work demands (Flinkman et al., 2008).

However, the current study show the mean score of intention to leave nursing profession between difference group of education ($F = 0.015$, $df = 1, 403$, $p = 0.901$); gender ($F = 0.236$, $df = 1, 403$, $p = 0.627$); marital status ($F = 0.930$, $df = 3, 401$, $p = 0.426$); and employment status ($F = 0.313$, $df = 4, 400$, $p = 0.870$) were not different. In contrast, previous studies showed female nurses were less likely to intent to leave the profession (Heinen et al., 2013). And also educational level found to be significant factor of intention to leave (Heinen et al., 2013); nurse who have higher level of education lead the lower the RN intent to leave the nursing profession (Nogueras, 2006).

The prevalence of intention to leave nursing profession

The current study reveals nurses who had intended to leave the profession was 49.1% ($n = 199$), and the proportion of nurses who had no intended to leave the profession was 50.9% ($n = 206$). Regarding this finding, the prevalence rate of

intention to leave nursing profession in current study is higher than previous study. Thai nurse cohort study demonstrated that approximately 15.5% of RNs, or an estimated of 20,000 out of the population (142,699), had intent to leave nursing profession within the next 2 years. Additionally, the study showed nurses working in private sectors, civil servant, and government officers had high proportion of intention to leave that are 21.7%, 15.4%, and 12.7%, respectively (Sawaengdee et al., 2012). When compare with the prevalence rate in the other countries, the evidences showed the percentage of participants who intended to leave the nursing profession quite high in Taiwan (49.2%) (Lin et al., 2011). On the other hand, some of the studies reported the intensity of the participants' thoughts about leaving the nursing profession; Flinkman et al (2008) reported that 26% of newly graduated nurses had often thought of giving up nursing. One longitudinal, observational study monitored the development of the intention to leave during the first five years of employment. The results showed that the percentage of nurses with a strong intent to leave the profession increased from 9.1% to 18.1% during the first five years of employment (Rudman et al., 2014). Li et al (2010) conducted longitudinal study; the results showed that the intention to leave the nursing profession was 16.26% when they first entered the profession. At the one-year follow-up, 14.46% of the nurses who had no intention to leave the nursing profession at the baseline had developed an intention to leave.

Model and Hypotheses testing results

The causes of leaving nursing are multifaceted. Nurses' intention to leave nursing profession are likely to be the result of the process with numerous underlying causes, that is to say, both "push" and "pull" factors (Beehr et al., 2000). The push

factors (internal organizational factor) are involved adversely perceived aspects of jobs which drive employees want to end their employment and away from the career (Ali Shah et al., 2010; Beehr et al., 2000; Estryn-Behar et al., 2010; Sangpow, 1999). The other, the pull factors are those reasons that attract the employee to a new location, it could be called external organizational factors which is beyond the control of organizations (Ali Shah et al., 2010; Beehr et al., 2000; Estryn-Behar et al., 2010; Sangpow, 1999).

Previous literatures indicated push factors which are antecedent of intention to leave nursing profession can be classified into work-related factors and organizational factors. Work-related factors: job satisfaction, professional commitment, burnout, and work-family conflict has been shown that is significant predictors of nurses' intention to leave nursing profession in prior studies (Flinkman et al., 2008; Gurkova et al., 2013; Heinen et al., 2013; Jourdain & Chenevert, 2010; Nogueras, 2006; Russo & Buonocore, 2011; Simon et al., 2010).

Furthermore, organizational factors, although a variety of factors have been found to influence turnover and intention to leave nursing profession, nurse work environment is strongly related to turnover (Irvine & Evans, 1995). In addition, the pull factors which is attractive external organizational factors are present by economic factors (Irvine & Evans, 1995), it was found that the plentiful employment opportunity have relationship with intention to leave nursing profession (Irvine & Evans, 1995; Lum et al., 1998; Simon et al., 2010).

Regarding the findings of SEM in present study revealed that the hypothesized model fit the empirical data and could explain 45% ($R^2 = 0.45$) of the variance of intention to leave nursing profession by job satisfaction, professional commitment,

burnout, nurse practice environment, work-family conflict, and employment opportunity. Moreover, forty-seven percent ($R^2 = 0.47$) of the variance of job satisfaction by work-family conflict, burnout, and nurse practice environment. Thirty-two percent ($R^2 = 0.32$) of the variance of professional commitment by job satisfaction, burnout, nurse practice environment, and work-family conflict. Thirty-five percent ($R^2 = 0.35$) of the variance of burnout by work-family conflict and nurse practice environment.

In order to identify the direct and indirect relationships of job satisfaction, professional commitment, burnout, nurse practice environment, work-family conflict, employment opportunity on intention to leave nursing profession among registered nurses in governmental hospitals. The results of current study were described as the followings:

1) Effect of job satisfaction on intention to leave nursing profession

Job satisfaction had a non-significant direct effect on intention to leave nursing profession. On the other hand, job satisfaction had a significant negative indirect effect on intention to leave nursing profession through professional commitment. This finding is partially supported as proposed in the hypothesized number one that is job satisfaction had negative direct effect on intention to leave nursing profession, and had negative indirect effect on intention to leave nursing profession through professional commitment.

Job satisfaction had a non-significant direct effect on intention to leave nursing profession. This finding is not support the hypothesis. Previous studies indicated nurses who were less satisfied with their jobs were more likely to consider leaving their profession (Dotson et al., 2014; Flinkman et al., 2008; Gurkova et al.,

2013; Salminen, 2012; Simon et al., 2010). Job satisfaction is occurred from an individual's appraisal toward their job and viewed as a pleasurable or positive emotional state (Coomber & Barriball, 2007). On the other hand, negative feeling of dissatisfaction may also occur from the appraisal (Coomber & Barriball, 2007). However, satisfied or dissatisfied with job does not hinge on only the nature of the job, but also the expectations of individuals toward their job could be contributor (Lu et al., 2002). Based on the two-factor theory of job satisfaction (Hebzbeg et al., 1959), satisfaction and dissatisfaction were two separated phenomena. Intrinsic factors (motivators) referred to factors intrinsic to the nature and experience of doing work was found to be job satisfier that included achievement, recognition, work itself and responsibility. On the other hand, extrinsic factors (hygiene) were found to be job dissatisfier that included company policy, administration, supervision, salary, interpersonal relations and working conditions. Thus, job satisfaction has been drawn near the perspective of the affective orientation towards the job and considered as a related pattern of attitudes about various aspects of the job. Regarding the current study, the aspect of organizational policies that associated with advancement opportunities demonstrated as a significance of job satisfaction facets and could lead to job dissatisfaction.

Furthermore, the negative feeling on nurses' job could come from burnout. Burnout is also connected to the affective orientation perspective of individual. Burnout is referred to the physical, emotional, and intellectual exhaustion syndrome. Burnout was pointed out to have strong relationship with job satisfaction and could lead to intention to leave (Aiken & Patrician, 2000; Shields & Ward, 2001). Similarly, (Van Bogaert et al., 2010) found that burnout associated with job satisfaction and

intention to leave nursing profession. Although nurses feel satisfied in their job, nurses have high level of burnout could have high impact on intention to leave nursing profession rather than job satisfaction. As in the present study reveal that burnout has a greatest impact on intention to leave nursing profession.

Interestingly, although job satisfaction had a non-significant direct effect on intention to leave nursing profession, job satisfaction was found to have a significant negative indirect effect on intention to leave nursing profession through professional commitment which congruence with hypothesis one. Job satisfaction was positively correlated with professional commitment and negatively correlatively correlated with intention to leave the profession (Lu et al., 2002). Nurse who feel dissatisfy in their job could affect to a commitment of nurses toward their profession that make nurses are consider to leave from nursing career (Irving et al., 1997). Professional commitment or dedication could be a basic source of motivation since a person is more likely to perform when they are committed to the profession. This finding supports previous studied that job satisfaction was positively correlated with professional commitment and negatively correlated with intention to leave the profession (Lu et al., 2002). Similarly, job satisfaction was significant positively related to professional commitment (Fang, 2001). van der Heijden and colleague determine predictors of nurses' intention to leave the nursing profession among registered nurses, the study found that occupational commitment had a significant negative relationship with occupational turnover intention. These could summarize that job satisfaction had a significant negative indirect effect on intention to leave nursing profession through professional commitment.

2) Effect of professional commitment on intention to leave nursing profession

Professional commitment was found to have a significant negative direct effect on intention to leave nursing profession. This finding is supported hypothesis 2. Commitment is a force that obligates an individual to the relevance target (Meyer & Herscovitch, 2001). Employees who are committed to the organization will develop dedication to the goals and values of the organization and will devote their efforts to fulfilling the mission of the organization (Lu et al., 2002; Zangaro, 2001). Additionally, nurses who had high commitment to the profession would present the personal involvement in the work role, dedication to the profession, desire to stay in a profession, a definite desire to be a membership in the profession, and unwillingness to change career (Friss, 1983; Lin et al., 2007; Meyer et al., 1993). Thus, commitment to one's profession indicates an employee's intention to remain in the profession (Blau, 1998).

This finding supports previous studies that there was a strong association between occupational commitment and occupational turnover intention for professional employees (Lee et al., 2000). Flinkman et al (2008) found that the professional commitment had a significant correlation to intention to leave nursing profession among registered nurses in Finland. Similarly, van der Heijden and colleagues (2009) found that the occupational commitment had a significant negative relationship with occupational turnover intention. This indicates that a high commitment to one's professional work was associated with low intentions to leave the profession.

3) Effect of burnout on intention to leave nursing profession

Burnout was found to have a significant positive direct effect on intention to leave nursing profession, and have a significant positive indirect effect on intention to leave nursing profession through job satisfaction and professional commitment. This finding is supported hypothesis 3.

Burnout had positive direct effect on intention to leave nursing profession, this indicate that nurses who experienced burnout were those who most often considered leaving the profession (Flinkman et al., 2008). Burnout was identified as a factor associated with the intention to leave the profession. Burnout has been described as a syndrome commonly affects workers in service occupations (Maslach et al., 2001), particularly those with prolonged exposure to stressors, such as nursing (Borritz et al., 2006; Poghosyan et al., 2009). Burnout symptoms are manifested as emotional exhaustion, a loss of energy, and withdrawal from work (Borritz et al., 2006). Work-related burnout has been found to be a significance aspect on the current study. This referred to the degree of physical and psychological exhaustion that perceived by nurses as related to their works. Sources of work stress among nurses had been investigated; the empirical study indicated that the nurse's role has long been regarded as stress-filled based upon the physical labor, human suffering, work hours, staffing, and interpersonal relationships that are central to the work nurses do (Jennings, 2008). In addition, role ambiguity and role conflict seemed to be the burnout antecedent (Gilmonete, Valcaárcel, & Zornoza, 1993). Moreover, the study showed that social support from supervisors and colleagues is influenced on both role stress and burnout; hence the people who perceive higher work social support had been demonstrated lower in role stress and burnout than those who perceived lower social support.

This finding supports previous studies that personal burnout had a significant correlation to intention to leave nursing profession (Flinkman et al., 2008). Rudman et al. (2014) conducted a longitudinal observational study on the impact of burnout on the development of intention to leave the profession of nurses who had been in the field for less than one year, results reveal the percentage of them reported high burnout and intended to leave the profession was 27% after one year, 45% after three years, and 43% after five years of employment. It was evident that nurses who felt high levels of burnout were related to an increase in intention to leave nursing profession. Similarly, Heinen et al. (2013) investigated factors associated with intention to leave the profession among nurses in 10 European countries. The results reveal that burnout is a significant correlate of intention to leave in all ten countries.

Burnout had a significant positive indirect effect on intention to leave nursing profession through job satisfaction and professional commitment. This finding supports previous studies that the lower levels of the burnout predicted more favorable outcomes which are job satisfaction and no intention to leave the nursing profession. Van Bogaert et al.'s (2010) study found that there are significant associations between job satisfaction, burnout, and intention to leave profession. Furthermore, Jourdain and Chenevert (2010) mentioned in their studies, emotional exhaustion has an effect on professional commitment, and eventually leads to nurses' greater intention to end their career.

4) Effect of work-family conflict on intention to leave nursing profession

Work-family conflict was found to have a significant positive direct effect on intention to leave nursing profession and burnout, and have a significant positive

indirect effect on intention to leave nursing profession through job satisfaction. This finding is supported hypothesis 4.

Work-family conflict had positive direct effect on intention to leave nursing profession. This indicates that nurses who have role interfere between family role and work role are likely to have intention to leave nursing profession. Work and family are the two most important domains of an adult's life. It is expected that adults will find a balance between the two domains (Wang et al., 2012). Work-family conflict occurs when obligations in one domain cannot be met because of responsibilities in the other domain (Simon et al., 2004). For many nurses, their present the need to combine work and demands, with balancing work and family responsibilities, but when they become harder to handle, work-family conflict will be occurred (Luk & Shaffer, 2005). The interference of these two domains could be the factor affecting nurses intended to leave the profession. This finding supports previous studied that nurses who reported demands of work are incompatible with a fulfilling home life are likely leaving nursing (Morrell, 2005). Simon, Müller, and Hasselhorn (2010) conducted a secondary analysis of data of the German part of the European Nurses' Early Exit Study. The results reveal intentions to leave the profession were strongly associated with the work/home interface. Similarly, Simon et al. (2004) found Intentions to leave the profession was strongly associated with work-family conflicts.

Work-family conflict had positive direct effect on burnout. Work-family conflict as a source of job stress for nurses (Mauno & Kinnunen, 1999) is associated with work demands, such as the number of hours worked, the workload, and the need to perform shift work (Yildirim & Aycan, 2008). Regarding the current study, nurses had high score that mention on the conflict between their job and family role. They

have to change plan for family activities due to their job. This conflict consequently leads to negative outcomes, such as poor mental health and negative organizational attitudes (Yildirim & Aycan, 2008). Job stress is also associated with burnout (Khamisa, Oldenburg, Peltzer, & Ilic, 2015). This finding supports previous studied; Wang et al (2012) investigate the relationship between work-family conflict and burnout among Chinese female nurses. The results reveal WFC was significantly correlated with burnout.

Work-family conflict has a significant positive indirect effect on intention to leave nursing profession through job satisfaction. This finding was support previous study that high work-to-home interference results in lower job satisfaction, which, in turn, predicts nurses' intention to leave the profession (van der Heijden, van Dam, & Hasselhorn, 2009). Furthermore, previous study reveals that WFC decreased the perception of job satisfaction (Cortese et al., 2010).

5) Effect of nurse practice environment on intention to leave nursing profession

Nurse practice environment had a non-significant direct effect on intention to leave nursing profession. On the other hand, nurse practice environment has a significant negative direct effect on burnout. Nurse practice environment has a significant negative indirect effect on intention to leave nursing profession through job satisfaction and professional commitment. This finding is partially supported as proposed in the hypothesized number five that is nurse practice environment has direct negative effect on intention to leave and burnout, and has positive indirect effect on intention to leave through job satisfaction and professional commitment.

Nurse practice environment had a non-significant direct effect on intention to leave nursing profession. This finding is not support the hypothesis. Previous studies indicated poor work environments were found to be associated with high intentions to leave the profession (van der Heijden, van Dam, & Hasselhorn, 2009). The nursing practice environment refers to the organizational characteristics of a work setting that facilitate or constrain professional nursing practice (Lake, 2002), and it has been recognized as a significant factor in retaining nurses. Nurses who perceived their practice environment as unsatisfactory were more likely to leave the profession (Lin et al., 2011). Although nurses in current study perceived nurse practice environment as a favorable environment, this kind of perception could not affecting on the intention to leave the profession. This could occur from the perception on nurse practice environment has highly correlated with job satisfaction ($r = .53, p < .01$), meanwhile burnout which is a negative affective shows a greatest impact on intention to leave nursing profession ($\beta = 0.37; p < .001$). Thus, nurse practice environment had a non-significant direct effect on intention to leave nursing profession. Furthermore, nurse practice environment was found to have a significant negative direct effect on burnout. This could support from previous study; Friese's (2005) study found the emotional exhaustion was significantly lower among oncology nurses working in magnet hospitals.

On the other hand, nurse practice environment has a significant negative indirect effect on intention to leave nursing profession through job satisfaction and professional commitment. This finding supports previous studied that supportive work environment were related to job satisfaction. Moreover, job satisfaction was negatively related to turnover intentions (Irvine & Evans, 1995). Manojlovich (2005)

investigates direct and indirect relationships among the practice environment, nurse-physician communication, and job satisfaction. The findings reveal practice environment were highly correlated with job satisfaction. Additionally, unsupportive work environment is resulting in lower occupational commitment and job satisfaction, and leading to intention to leave the profession (van der Heijden et al., 2007).

6) Effect of employment opportunity on intention to leave nursing profession

Employment opportunity was found to have a significant positive direct effect on intention to leave nursing profession. This finding is supported hypothesis 6. The perception of alternatives employment opportunities have been highlighted the impact of job market on the intention to leave the profession. Plentiful alternative employment opportunities in the job market positively predicted nurses' intentions to leave the profession (Li et al., 2013).

Regarding, the changes in Thailand environmental context contribute directly affected on the health service system such as becoming aging society; complexity pattern of illness that link to increase an advanced technologies. Furthermore, Thai health policies have aimed to promote Thailand to be a medical hub in Asia and initiating AEC. The consequences of these policies make supplementary expansion of the private and commercialize medical service. Moreover, the country quickly becomes Asia's center for health treatments and attracting patients from around the globe seeking cosmetic and medical services (Department of International Trade Promotion, 2015). This resulted in a huge brain drain from the public to the private sector with high remuneration. Regarding this an opportunity for employment could

be expanded, it produces a big challenge for healthcare system in planning workforce policy.

This could summarize that the availability of other employment opportunities significantly predicted nurses' intention to leave the nursing profession. It has been shown that nurses in 'locked-in' situations (areas with high unemployment rates and a lack of alternative jobs) tended to stay in their current profession. In contrast, nurses who reported that other employment opportunities were readily available had relatively higher intentions to leave the profession (Li et al., 2013).

Implications for nursing knowledge and nursing practice

Based on the results of this study, it demonstrated that the highest impact factors influencing intention to leave nursing profession was burnout followed by professional commitment and work-family conflict, respectively. Burnout and work-family conflict has been conceptualized as work-related characteristics on push factor. Burnout relatively common affect the chronic stress in human service occupation (Maslach et al., 2001). Nurses have been found to susceptible in developing burnout because of confronted incessantly with a high level of demands and insufficient resources linked to the work itself within the profession (Jourdain & Chênevert, 2007). The job demands in nursing also include role ambiguity, role conflict, work overtime, work overload, work-family conflict, lack of opportunities for advancement, lack of support, and staffing (Jourdain & Chênevert, 2007; Khamisa et al., 2015).

Therefore, nursing administrators and policy makers should deliberate to develop fit strategies such as task restructuring and better managing of shifts and flexible work schedules to reduce job demand in nursing. Furthermore, given

sufficient job resources such as autonomy, social support, and opportunities for professional development could be compensate for burnout from excessive job demand (Xanthopoulou et al., 2007). With the respect to work-family conflict, the effort to enhance the work-life balance concerning to flexible scheduling could reduce long working hours. Giving good management on this could allow nurses to spend leisure time with their family and friends (Shader et al., 2001).

Regarding the finding on professional commitment, another push factor that demonstrated high effect on intention to leave nursing profession; the commitment was recognized as organizational effects accompanying with intrinsic motivation. Profession commitment is a psychological link between person and nursing profession. High commitment toward nursing profession can enhance individual's efforts to advance the professional value, and make decision continuing as a member of the profession. To enhance professional commitment, a need to reinforce professional values in undergraduate, postgraduate, and in-service education is taking to account. Values are conceptualized as attitudes, beliefs, and priorities that bind individuals together in nursing profession. Therefore, strategies underpinning professional values can strengthen professional commitment and also maintain the sustainability of the profession. Nursing professional association, nurse administrator, and nurse educator play the important role to enhance nursing members committed to professional development activities.

Recommendation for future research

Based on the findings of the present study, the following recommendations for future research can be made as follows:

1) In this study used cross-sectional design, the findings indicate the impact of factors influencing intention to leave nursing profession. This could make in-depth insight on these factors for nurse administrator and policy makers to tailor strategic plan or intervention to prevent early leaving from nursing profession. However, the causal explanation results remain tentative in nature among this research design. To achieve causally valid explanations, the best ways in which experimental and quasi-experimental research designs are recommended for future research.

2) The finding in current study demonstrated the model accounted for 45% of the variance in intention to leave nursing profession. This recommend for future study to include other significant factor in the model.

3) Burnout, professional commitment, and work-family conflict were found to have high impact on intention to leave nursing profession. Antecedents of these variables are recommended for future investigation.

4) The traditional important factors such job satisfaction and nurse practice environment had been illustrated as significant factor on intention to leave nursing profession. Remarkably, these factors did not propose direct effect on intention to leave nursing profession in the current study. Therefore, the further investigation on these predictors needs to be discovered.

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APPENDICES



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Appendix A Approval of dissertation proposal

3

นิสิตผู้ทำวิจัยและอาจารย์ที่ปรึกษาคุณุภินิพนธ์
 รหัสนิสิต 5377975336
 ชื่อ-นามสกุล นางสาวภัทรา เมือกพันธ์
 สาขาวิชา พยาบาลศาสตร์ (นานาชาติ)
 อาจารย์ที่ปรึกษา รองศาสตราจารย์ ร.ต.อ.หญิง ดร. ยูพิน อังสุโรจน์
 อาจารย์ที่ปรึกษาร่วม รองศาสตราจารย์ ดร. จินตนา ยูนิพันธุ์
 ประธานกรรมการสอบฯ รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์
 กรรมการสอบฯ ดร. กฤษดา แสงวงศ์
 กรรมการสอบฯ รองศาสตราจารย์ ดร. ศิริเดช สุชีวะ
 กรรมการสอบฯ ผู้ช่วยศาสตราจารย์ ดร. สุวิณี วิวัฒน์วานิช
 ชื่อหัวข้อคุณุภินิพนธ์ ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ
 FACTORS INFLUENCING INTENTION TO LEAVE NURSING PROFESSION AMONG REGISTERED NURSES, GOVERNMENTAL HOSPITALS

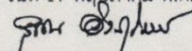
ครั้งที่อนุมัติ 3/2555
 ระดับ ปริญญาเอก

นิสิตผู้ทำวิจัยและอาจารย์ที่ปรึกษาคุณุภินิพนธ์
 รหัสนิสิต 5377977636
 ชื่อ-นามสกุล นาวาตรีหญิง อรวรรณ ช้องด้อย
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 ประธานกรรมการสอบฯ รองศาสตราจารย์ ร.ต.อ.หญิง ดร. ยูพิน อังสุโรจน์
 กรรมการสอบฯ พันเอก นายแพทย์ พิชัย แสงชาญชัย
 กรรมการสอบฯ ดร. กฤษดา แสงวงศ์
 กรรมการสอบฯ รองศาสตราจารย์ ดร. สิริพรรณ สุวรรณมรรคา
 กรรมการสอบฯ รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์
 ชื่อหัวข้อคุณุภินิพนธ์ ปัจจัยทำนายความพยายามเลิกบุหรี่และสถานภาพการสูบบุหรี่ของผู้ป่วยโรคจิตเภท
 ที่สูบบุหรี่
 PREDICTING FACTORS OF QUIT ATTEMPT AND SMOKING STATUS IN SCHIZOPHRENIC SMOKERS

ครั้งที่อนุมัติ 3/2555
 ระดับ ปริญญาเอก

จากมติคณะกรรมการบริหารคณะพยาบาลศาสตร์ ครั้งที่ 9/2556 วันที่ 14 พฤษภาคม 2556

ประกาศ ณ วันที่ 17 พฤษภาคม พ.ศ. 2556


 (รองศาสตราจารย์ ร.ต.อ.หญิง ดร. ยูพิน อังสุโรจน์)
 คณบดีคณะพยาบาลศาสตร์

Appendix B Approval of ethical review committee

AF 02-12



The Ethics Review Committee for Research Involving Human Research Subjects,
Health Science Group, Chulalongkorn University
Institute Building 2, 4 Floor, Soi Chulalongkorn 62, Phyat hai Rd., Bangkok 10330, Thailand,
Tel: 0-2218-8147 Fax: 0-2218-8147 E-mail: eccur@chula.ac.th

COA No. 001/2015

Certificate of Approval

Study Title No.125.1/57 : **FACTORS INFLUENCING INTENTION TO LEAVE NURSING PROFESSION AMONG REGISTERED NURSES, GOVERNMENTAL HOSPITALS**

Principal Investigator : MISS PATRA PHUEKPHAN

Place of Proposed Study/Institution : Faculty of Nursing,
Chulalongkorn University

The Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University, Thailand, has approved constituted in accordance with the International Conference on Harmonization – Good Clinical Practice (ICH-GCP) and/or Code of Conduct in Animal Use of NRCT version 2000.

Signature: Prida Tasanapradit Signature: Nuntaree Chaichanawongsoj
(Associate Professor Prida Tasanapradit, M.D.) (Assistant Professor Nuntaree Chaichanawongsoj, Ph.D.)
Chairman Secretary

Date of Approval : 12 January 2015 **Approval Expire date** : 11 January 2016

The approval documents including

- 1) Research proposal
- 2) Patient/Participant Information Sheet and Informed Consent Form
- 3) Researcher  Protocol No. 125.1/57
- 4) Questionnaire Date of Approval 12 JAN 2015
Approval Expire Date 11 JAN 2016

The approved investigator must comply with the following conditions:

1. The research/project activities must end on the approval expired date of the Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University (ECCU). In case the research/project is unable to complete within that date, the project extension can be applied one month prior to the ECCU approval expired date.
2. Strictly conduct the research/project activities as written in the proposal.
3. Using only the documents that bearing the ECCU's seal of approval with the subjects/volunteers (including subject information sheet, consent form, invitation letter for project/research participation (if available)).
4. Report to the ECCU for any serious adverse events within 5 working days
5. Report to the ECCU for any change of the research/project activities prior to conduct the activities.
6. Final report (AF 03-12) and abstract is required for a one year (or less) research/project and report within 30 days after the completion of the research/project. For thesis, abstract is required and report within 30 days after the completion of the research/project.
7. Annual progress report is needed for a two-year (or more) research/project and submit the progress report before the expire date of certificate. After the completion of the research/project processes as No. 6]



COA No. 557/2014

IRB No. 320/57

INSTITUTIONAL REVIEW BOARD

Faculty of Medicine, Chulalongkorn University

1873 Rama 4 Road, Patumwan, Bangkok 10330, Thailand, Tel 662-256-4493 ext 14, 15

Certificate of Approval

The Institutional Review Board of the Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand, has approved the following study which is to be carried out in compliance with the International guidelines for human research protection as Declaration of Helsinki, The Belmont Report, CIOMS Guideline and International Conference on Harmonization in Good Clinical Practice (ICH-GCP)

Study Title : FACTORS INFLUENCING INTENTION TO LEAVE NURSING PROFESSION AMONG REGISTERED NURSES, GOVERNMENTAL HOSPITAL.

Study Code : -

Principal Investigator : Miss Patra Phuekphan

Affiliation of PI : Faculty of Nursing, Chulalongkorn University.

Review Method : Expedited

Continuing Report : At least once annually or submit the final report if finished.

Document Reviewed :

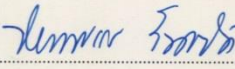
1. Protocol Version 2.0 Date 11/8/2557
2. Protocol Synopsis Version 2.0 Date 11/8/2557
3. Information sheet for research participant Version 2.0 Date 13/8/2557
4. Informed Consent Form Version 2.0 Date 11/8/2557
5. Questionnaire Version 1.0 Date 7/3/2014
6. Principal Investigator's CV Version 1.0 Date 7/3/2014

Signature: 

(Emeritus Professor Tada Sueblinwong MD)

Chairperson

The Institutional Review Board

Signature: 

(Assistant Professor Prapapan Rajatapiti MD, PhD)

Member and Secretary

Secretary The Institutional Review Board

Date of Approval : August 21, 2014

Approval Expire Date : August 20, 2015

Approval granted is subject to the following conditions: (see back of this Certificate)



คณะกรรมการวิจัยและจริยธรรมวิจัย
โรงพยาบาลพรัตนราชธานี

ใบรับรองโครงการวิจัยผ่านการพิจารณาจากคณะกรรมการวิจัยและจริยธรรมวิจัย
โรงพยาบาลพรัตนราชธานี

ชื่อโครงการ(ไทย) ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ
ชื่อโครงการ(อังกฤษ) Factors influencing intention to leave nursing profession among
registered nurses, governmental
ชื่อผู้วิจัย : นางสาวภัทรา เมือกพันธ์
เลขที่ใบรับรอง : 23/2557 รหัสโครงการวิจัย : 57-2-019 -0
หน่วยงานที่สังกัด : คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
ประเภทโครงการวิจัย โครงการวิจัยภายใน โครงการวิจัยภายนอก
ผลการพิจารณาของคณะกรรมการวิจัย :

คณะกรรมการจริยธรรมการวิจัยได้พิจารณารายละเอียดโครงการวิจัย เรื่องดังกล่าว
ข้างต้นแล้ว ในประเด็นที่เกี่ยวข้องกับ

- 1) การเคารพในศักดิ์ศรี และสิทธิของมนุษย์ที่เป็นกลุ่มตัวอย่างในโครงการวิจัย
- 2) วิธีการวิจัยที่เหมาะสมและได้รับความยินยอมจากกลุ่มตัวอย่างก่อนเข้าร่วม
โครงการวิจัย (Informed consent) รวมทั้งการปกป้องสิทธิประโยชน์ และรักษา
ความลับของกลุ่มตัวอย่างในโครงการวิจัย
- 3) การดำเนินงานวิจัยเหมาะสม ไม่ก่อความเสียหายต่อกลุ่มตัวอย่างของการศึกษาวิจัย

ออกให้ ณ วันที่ 5 สิงหาคม 2557

หมดอายุวันที่ 4 สิงหาคม 2558

เอกสารนี้ให้ไว้เพื่อแสดงว่าโครงการวิจัยนี้ ได้ผ่านการตรวจสอบและมีมติจากคณะกรรมการวิจัย
และจริยธรรมวิจัยของโรงพยาบาลพรัตนราชธานี ให้ดำเนินการเก็บข้อมูลในโรงพยาบาลพรัตนราชธานีได้ ตาม
เงื่อนไขและแนวทางที่เจ้าของโครงการเสนอมา

ลงนาม.....

(นายแพทย์กิตติวัฒน์ มะโนจันทร์)

ประธานคณะกรรมการวิจัยและจริยธรรมวิจัย

หมายเหตุ : ใบรับรองนี้เป็นใบรับรองที่จัดทำขึ้นชั่วคราวเท่านั้น ศูนย์วิจัยคลินิกจะดำเนินการออกเอกสารใบรับรองฉบับจริงให้ เมื่อ
ผู้วิจัยนำรูปแบบงานวิจัยฉบับสมบูรณ์ มาส่งที่ศูนย์วิจัยเพื่อเผยแพร่ผลการศึกษาวิจัยต่อไป



คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล
 ๒๗๐ ถนนพระราม ๖ แขวงทุ่งพญาไท เขตราชเทวี กทม. ๑๐๔๐๐
 โทร. (๐๒) ๒๐๑-๑๐๐๐

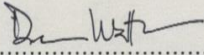
Faculty of Medicine Ramathibodi Hospital, Mahidol University.
 270 Rama VI Road, Ratchathewi, Bangkok 10400, Thailand
 Tel. (662) 201-1000

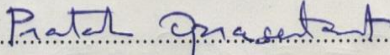
Documentary Proof of Ethical Clearance
Committee on Human Rights Related to Research Involving Human Subjects
Faculty of Medicine Ramathibodi Hospital, Mahidol University

MURA2014/397

Title of Project	Factors Influencing Intention to Leave Nursing Profession among Registered Nurses, Governmental Hospitals
Protocol Number	ID 07-57-43
Principal Investigator	Miss. Patra Phuekphan
Education Address	Faculty of Nursing Chulalongkorn University

The aforementioned project has been reviewed and approved by the Committee on Human Rights Related to Research Involving Human Subjects, based on the Declaration of Helsinki.

Signature of Secretary Committee on Human Rights Related to Research Involving Human Subjects	 Prof. Duangrudee Wattanasirichaigoon, M.D.
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Signature of Chairman Committee on Human Rights Related to Research Involving Human Subjects	 Prof. Pratak O-Prasertsawat, M.D.
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Date of Approval	July 25, 2014
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Duration of Study	11 Months
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เอกสารรับรองโครงการวิจัย

โดย

คณะกรรมการจริยธรรมและวิจัยของโรงพยาบาลตำรวจ

เลขที่หนังสือรับรอง.ฉ.49./2557...

ชื่อโครงการ/ภาษาไทย	- ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ
ชื่อโครงการ/ภาษาอังกฤษ	-
ชื่อหัวหน้าโครงการ / หน่วยงานที่สังกัด	นางสาว กัทธา เมือกพันธ์ คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
รหัสโครงการ	-
สถานที่ทำการวิจัย	โรงพยาบาลตำรวจ
เอกสารรับรอง	<ol style="list-style-type: none"> 1. รายละเอียดโครงการวิจัย ฉบับที่ 1.0 ลงวันที่ 29 กรกฎาคม พ.ศ.2557 (Version 1.0 Date 29 July 2014) (ฉบับภาษาไทย) 2. แบบฟอร์มการให้ข้อมูลแก่ผู้เข้าร่วมการวิจัย ฉบับที่ 1.0 ลงวันที่ 29 กรกฎาคม พ.ศ.2557 (Version 1.0 Date 29 July 2014) (ฉบับภาษาไทย) 3. เอกสารชี้แจงข้อมูลและเอกสารลงนามยินยอม ฉบับที่ 1.0 ลงวันที่ 29 กรกฎาคม พ.ศ.2557 (Version 1.0 Date 29 July 2014) (ฉบับภาษาไทย) 4. แบบฟอร์มการเก็บข้อมูลและการวิเคราะห์ข้อมูล ฉบับที่ 1.0 ลงวันที่ 29 กรกฎาคม พ.ศ.2557 (Version 1.0 Date 29 July 2014) (ฉบับภาษาไทย) 5. ข้อตกลงวิจัย
รับรองโดย	คณะกรรมการจริยธรรมและวิจัยของโรงพยาบาลตำรวจ
วันที่รับรอง	29 กรกฎาคม พ.ศ.2557
วันหมดอายุ	28 กรกฎาคม พ.ศ.2558

หนังสือรับรองฉบับนี้ออกโดยความเห็นชอบในการพิจารณาจากคณะกรรมการจริยธรรมและวิจัยของ
โรงพยาบาลตำรวจ ตามกฎเกณฑ์สากล

ผู้วิจัยสามารถเข้าเก็บข้อมูลเพื่อทำการวิจัยได้ตั้งแต่วันที่ออกเอกสารรับรองโครงการวิจัย

พันตำรวจเอก

(เสรี ชีรพงษ์)

รองประธานคณะกรรมการจริยธรรมและวิจัย
ของโรงพยาบาลตำรวจ

พลตำรวจตรี

(อนา จูระเจน)

ประธานคณะกรรมการจริยธรรมและวิจัย
ของโรงพยาบาลตำรวจ

	เอกสารรับรองโครงการวิจัย (Certificate of Approval, COA) โดย คณะกรรมการวิจัยและจริยธรรมการวิจัย กรมแพทยทหารเรือ	
	สำนักงานวิจัยและจริยธรรมการวิจัยในมนุษย์ พ.ร.	เลขที่ : RLM 035/57
วัตถุประสงค์ : อนุมัติการวิจัยโครงการวิจัยในมนุษย์ที่ดำเนินการในสถานพยาบาลของ หรือดำเนินการโดยข้าราชการแพทย์ หรือดำเนินการโดยบุคลากรทางการแพทย์ในสถาน เป็นโรงพยาบาลของ พ.ร./หน่วย พ.ร./ คณะกรรมการวิจัยและจริยธรรมการวิจัยในมนุษย์ พ.ร. อนุมัติโครงการวิจัยจริยธรรมการวิจัย		
ชื่อโครงการ	ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ	
ชื่อหัวหน้าโครงการ/ หน่วยงานที่สังกัด	นางสาว กัทธา เมื่อกพันธ์ คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย	
รหัสโครงการ	RP 042/57	
สถานที่ทำวิจัย	โรงพยาบาลสมเด็จพระปิ่นเกล้า กรมแพทยทหารเรือ	
รายการเอกสารที่รับรอง	1) โครงการวิจัย 2) เอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย 3) หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย	
วันที่รับรอง	14 พฤศจิกายน 2557	
วันหมดอายุ	13 พฤศจิกายน 2558	

พลเรือตรีหญิง *กัทธา เมื่อกพันธ์*
 (พิมพ์ชื่อ-นามสกุล)
 ประธานคณะกรรมการวิจัยจริยธรรม พ.ร./
 รพ. จ.ร.พ.
 14 พ.ย. 57



18 ถนนเทศบาล 4
สามยอดเมือง จังหวัดสระบุรี



โทรศัพท์ 036-316555
โทรสาร 036-211624

เอกสารรับรองโครงการ
คณะกรรมการจริยธรรมการวิจัยในคน โรงพยาบาลสระบุรี

หมายเลข 029 /2014

ชื่อโครงการภาษาไทย : ปิ่จ้อที่มีอิทธิพลต่อความตั้งใจในการลาออกหาวิชาชีพของโรงพยาบาลโม
โรงพยาบาลรัฐ
รหัสโครงการ : EC044/02/2014
หัวหน้าโครงการ / หน่วยงานที่สังกัด : นางสาวกัทรา เดือกพันธ์
สถานที่ทำวิจัย : โรงพยาบาลสระบุรี

เอกสารที่รับรอง :

1. แบบเสนอ โครงการวิจัยเพื่อขอรับการพิจารณาจากคณะกรรมการจริยธรรมการวิจัยในคน
2. โครงร่างการวิจัย
3. แบบสอบถาม
4. ประวัติผู้วิจัย

วันที่รับรอง : 30 ตุลาคม 2557

วันหมดอายุ : 30 ตุลาคม 2558

คณะกรรมการจริยธรรมการวิจัยในคน โรงพยาบาลสระบุรี ดำเนินการให้การรับรองโครงการวิจัยตามแนวทาง
หลังจริยธรรมการวิจัยในคนที่เป็นสากล ได้แก่ Declaration of Helsinki, The Belmont Report, CIOMS Guidelines and The
International Conference on Harmonization in Good Clinical Practice (ICH-GCP)

ลงนาม



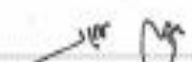
(นายแพทย์ณรงค์ศักดิ์ ไร่โรจน)

ประธานคณะกรรมการจริยธรรมการวิจัยในคน

02 พ.ย. 2557

วันที่

ลงนาม



(นายแพทย์สุวิทย์ คำว่าวณิช)

ผู้อำนวยการโรงพยาบาลสระบุรี

02 พ.ย. 2557

วันที่

เอกสารเลขที่ ๕๓ /๒๕๖๗



เอกสารรับรองโครงการวิจัย
โดย คณะกรรมการวิจัย โรงพยาบาลชลบุรี

- โครงการวิจัย : ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากราชการของพยาบาล
ในโรงพยาบาลรัฐ
Factors influencing intention to leave nursing profession among
registered nurses, governmental hospitals
- ผู้ดำเนินการวิจัยหลัก : นายแพทย์ไพโรจน์ ต้อยพันธ์
- หน่วยงานที่รับผิดชอบ : คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

คณะกรรมการวิจัยโรงพยาบาลชลบุรีได้พิจารณาแล้วเห็นว่าการขอไว้ดำเนินการวิจัยในข้อกล่าวของ
โครงการวิจัยที่เสนอได้ ตั้งแต่วันที่ ๑๓ พฤศจิกายน ๒๕๖๗ จนถึงวันที่ ๓๐ พฤศจิกายน ๒๕๖๗

ออกหนังสือ ณ วันที่ ๒๕ พฤศจิกายน ๒๕๖๗

ลงนาม

(นายแพทย์พงษ์เทพ โสภโณชิตชัย)
ประธานคณะกรรมการวิจัย

ลงนาม

(นายแพทย์อัครฤกษ์ ต้อยพันธ์)
นายแพทย์ทรงคุณวุฒิ
รักษาการในตำแหน่ง ผู้อำนวยการโรงพยาบาลชลบุรี



งานแผนงาน การการ วิจัย และนวัตกรรมที่ศูนย์ฯ โรงเรียนราชภัฏสุราษฎร์ธานี
 ๑-๖ ของแผนงานที่ ๑๖ ของแผนงานที่ ๑๖ ของแผนงานที่ ๑๖ ของแผนงานที่ ๑๖ ของแผนงานที่ ๑๖ ของแผนงานที่ ๑๖
 โทรศัพท์ ๐๗๖-๖๒๖๖๒๒๒ โทร โฟนแฟกซ์ ๐๗๖-๖๒๖๖๒๒๒

แบบรายงานผลการพิจารณาจริยธรรมการวิจัยในคน
 โรงพยาบาลสุราษฎร์ธานี

เลขที่ ๑๕ / ๒๕๖๗


ชื่อโครงการวิจัย : ปัจจัยที่มีอิทธิพลหรือความตั้งใจ ในการลาออกจากราชการของพยาบาลในโรงพยาบาลรัฐ
 ภาษาอังกฤษ : Factors influencing intention to leave nursing profession among registered nurses, governmental hospitals
 ชื่อหัวหน้าโครงการ : นางสาวภัทรา เข็กกพันธ์
 หน่วยงานที่สังกัด : คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

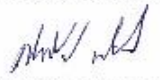
ผลการพิจารณาของคณะกรรมการจริยธรรมการวิจัยในคน โรงพยาบาลสุราษฎร์ธานี
 คณะกรรมการฯ ได้พิจารณารายละเอียดโครงการวิจัยเรื่องดังกล่าวข้างต้นแล้วในประเด็นเกี่ยวกับ

- ๑) การเคารพในศักดิ์ศรี และสิทธิทางมนุษยชาติใช้เป็นตัวอย่างผลการวิจัย
- ๒) วิธีการที่เหมาะสมในการได้รับความยินยอมจากกลุ่มผู้เข้าร่วมโครงการวิจัย รวมถึงการปกป้องสิทธิประโยชน์และรักษาความลับของข้อมูลตัวอย่าง
- ๓) การดำเนินการวิจัยอย่างเหมาะสม เพื่อไม่ให้เกิดความเสียหายต่อสิ่งที่ยุทธการวิจัย

คณะกรรมการจริยธรรมการวิจัยในคนมีมติเห็นชอบ รับรองโครงการวิจัย

วันที่ ที่ให้การรับรอง ๒๗ พฤศจิกายน ๒๕๖๗

ลงนาม.....
 (นายแพทย์หญิงวิมลวรา จันทน์ศรีศิริคุณ) 
 ประธานคณะกรรมการจริยธรรมการวิจัยในคน

ลงนาม.....
 (นายแพทย์ศักดิ์ชัย นิลวัชรารัตน์) 
 ผู้อำนวยการโรงพยาบาลสุราษฎร์ธานี



เอกสารรับรองโครงการวิจัยในมนุษย์
คณะกรรมการจริยธรรมเกี่ยวกับการวิจัยในมนุษย์
โรงพยาบาลพุทธชินราช พิษณุโลก

109/57

ชื่อโครงการ วัคซีนที่มีอีพิตอปความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ

ชื่อหัวหน้าโครงการ นางสาวกัทธา เมื่อกพันธ์

เลขที่โครงการ/รหัส -

หน่วยงานที่รับผิดชอบ คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

การรับรอง ขอรับรองโครงการวิจัยดังกล่าวข้างต้นนี้ได้ผ่านการพิจารณาและรับรองจาก
คณะกรรมการจริยธรรมเกี่ยวกับการวิจัยในมนุษย์โรงพยาบาลพุทธชินราช พิษณุโลก
เมื่อวันที่ 11 ต.ค. 2557

ลงนาม

(แพทย์หญิงศิริลักษณ์ อธิ์รุ่งรงค์)
ประธานคณะกรรมการจริยธรรมเกี่ยวกับการวิจัยในมนุษย์

รหัสเอกสารรับรอง 060/2557



เอกสารรับรองจริยธรรมโครงการวิจัยในมนุษย์

คณะกรรมการจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลสรรพสิทธิประสงค์ อุบลราชธานี

ชื่อโครงการ ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ

Factors influencing intention to leave nursing profession among registered nurses, governmental hospitals

ผู้วิจัยหลัก นางสาวทพภก เมื่อดอกใจน๊ะ

หน่วยงาน/สถาบัน คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

คณะกรรมการจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลสรรพสิทธิประสงค์ อุบลราชธานี ได้พิจารณาและเห็นชอบของโครงการวิจัย เอกสารขออนุญาตสำหรับอาสาสมัคร เอกสารแสดงความยินยอมเข้าร่วมการวิจัยภาษาไทยแล้ว มีมติสมควรให้ดำเนินการวิจัยในขอบเขตของโครงการที่เสนอได้

(Signature)
(นายแพทย์จิรวัฒน์ บุลาสาสตร์)
ประธานคณะกรรมการการวิจัยในมนุษย์

(Signature)
(นายแพทย์ชนิด ทองโรประยูร)
ผู้อำนวยการโรงพยาบาลสรรพสิทธิประสงค์

วันที่รับรอง : 21 มี.ย. 2557

วันหมดอายุของการรับรอง : 20 มี.ย. 2558

- เอกสารที่รับรองรวมถึง
1. ใบบอกกล่าววิจัย
 2. ใบบัญชีอาสาสมัครอาสาสมัคร
 3. คู่มืออาสาสมัครวิจัย
 4. แบบสอบถาม/แบบบันทึกข้อมูล



- ผู้วิจัยที่ได้รับการรับรองต้องปฏิบัติตามเงื่อนไขดังต่อไปนี้
1. ผู้วิจัยต้องปฏิบัติตามเงื่อนไขของโครงการวิจัยที่คณะกรรมการจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลสรรพสิทธิประสงค์ อุบลราชธานี
 2. ศึกษารายละเอียดโครงการวิจัยดังกล่าวกับระบบตลาดการรับรอง ค่าตอบแทนอาสาสมัคร ผู้ลงนามแสดงความยินยอมก่อนอายุ 20 ปี
 3. ผู้วิจัยต้องจัดทำรายงานผลการวิจัยส่งคืนให้คณะกรรมการจริยธรรมการวิจัยในมนุษย์
 4. ใช้เพื่อเผยแพร่หรือตีพิมพ์โครงการวิจัยที่ได้รับรอง (ในชื่อของนายแพทย์จิรวัฒน์ บุลาสาสตร์, นายแพทย์ชนิด ทองโรประยูร และ คณะกรรมการจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลสรรพสิทธิประสงค์) ได้ตลอดชีพ
 5. โครงการนี้ศึกษาเฉพาะในช่วงเดือนเมษายน ถึง พฤษภาคม และกลุ่มอาสาสมัครวิจัยรวมอายุ 5 ปีขึ้นไป
 6. ใบคำขออนุญาตเปลี่ยนแปลงโครงการในภายหลังได้รับรองไว้ ต้องรายงานคณะกรรมการจริยธรรมการวิจัยในมนุษย์ ก่อนที่จะเริ่มทำการวิจัย
 7. ระยะเวลาการวิจัยฉบับสมบูรณ์ของโครงการวิจัยส่งคืนแล้ว จำนวน 1 ฉบับ



เอกสารรับรองจริยธรรมการวิจัยในมนุษย์

เอกสารฉบับนี้ เพื่อแสดงว่าโครงการวิจัย

เรื่อง ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ

ผู้วิจัยหลัก/เจ้าของผลงาน คือ นางสาวภัทรา เผือกพันธ์

สถาบัน / หน่วยงาน นิสิตหลักสูตรพยาบาลศาสตรดุษฎีบัณฑิต คณะพยาบาลศาสตร์
จุฬาลงกรณ์มหาวิทยาลัย

ได้ผ่านการพิจารณาจากคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์โรงพยาบาลศรีสะเกษแล้ว
เห็นชอบ ให้ผ่านการพิจารณารับรองด้านจริยธรรมการวิจัยในมนุษย์ สามารถดำเนินการวิจัยได้ และเห็นว่า
ผู้วิจัยต้องดำเนินการตามโครงการวิจัยที่กำหนดไว้ หากจะมีการปรับเปลี่ยนหรือแก้ไขใดๆ ควรผ่านความ
เห็นชอบจากคณะกรรมการพิจารณาจริยธรรมการวิจัยอีกครั้ง

ออกให้ ณ วันที่ ๒๗ เดือน มกราคม พ.ศ. ๒๕๕๘

ลงชื่อ

(นายสุที วงศ์ละคร)

ประธานกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์
โรงพยาบาลศรีสะเกษ

ลงชื่อ

(นายอุดม เพชรภูวดี)

ผู้อำนวยการโรงพยาบาลศรีสะเกษ



เอกสารรับรองจริยธรรมทางการวิจัย

เอกสารฉบับนี้ เพื่อแสดงว่า โครงการวิจัย
เรื่อง ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ

ผู้วิจัย คือ นางสาวภัทรา เผือกพันธ์
หน่วยงาน คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
ได้ผ่านการพิจารณาจากคณะกรรมการจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลสุราษฎร์ธานีแล้ว และเห็นว่าผู้วิจัยต้องดำเนินการตามโครงการวิจัยที่ได้กำหนดไว้แล้ว หากมีการปรับเปลี่ยนหรือแก้ไขใด ๆ ควรผ่านความเห็นชอบหรือแจ้งต่อคณะกรรมการจริยธรรมทางการวิจัยอีกครั้ง

ออกให้ ณ วันที่ ๒๑ เดือนตุลาคม พ.ศ. ๒๕๕๗

ลงชื่อ

(นายคตมพ์ มุกต์มณี)

นายแพทย์ ระดับชำนาญการ

ประธานคณะกรรมการจริยธรรมการวิจัยในมนุษย์

ลงชื่อ

(นายอดิเกียรติ เอี่ยมวรนิรันดร์)

ผู้อำนวยการ

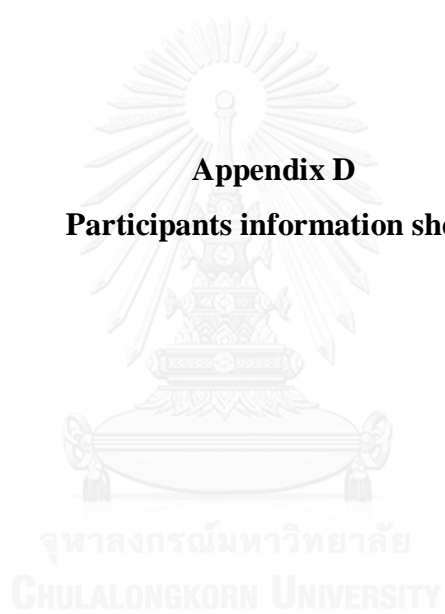
ลำดับที่ ๒๙/๒๕๕๗

คณะกรรมการจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลสุราษฎร์ธานี ถ.ศรีวิชัย อ.เมือง จ.สุราษฎร์ธานี ๘๔๐๐๐
โทร. (๐๗๗) ๒๗๒๒๓๑ ต่อ๒๔๖๔, โทรสาร (๐๗๗) ๒๘๓๒๕๗

Appendix C
List of the experts

1. Associate Professor Dr. Suchitra Luangamonlert
Vice President of Thailand Midwifery and Nursing Council
2. Professor Dr. Wipada Kunaviktikul
Dean and Director of Nursing Policy and Outcomes Center, Faculty of Nursing,
Chiang Mai University
3. LTC. Dr. Wassana Naiyapatana
Nursing lecturer, The Royal Thai Army Nursing College
4. Laddawan Ruammake
Director of Thailand Nursing and Midwifery Service Standard Center
5. Dr. Somsamai Sutherasan
Deputy Director of HRH Princess Maha Chakri Sirindhorn Medical Center,
Srinakharinwirot University

Appendix D
Participants information sheet



ข้อมูลสำหรับผู้มีส่วนร่วมในงานวิจัย

ชื่อ โครงการวิจัย “ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลใน
โรงพยาบาลรัฐ”

ชื่อผู้วิจัย นางสาว ภัทรา เผือกพันธ์ ตำแหน่ง นิสิตคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
สถานที่ติดต่อผู้วิจัย คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย หรือ 39/404 สุขุมวิท 5 ซอย 82
แขวงสามวาตะวันตก เขตคลองสามวา กรุงเทพฯ 10510

โทรศัพท์มือถือ 081-2551198 E-mail: patraphk@gmail.com

ข้าพเจ้า นางสาว ภัทรา เผือกพันธ์ นิสิตปริญญาเอก คณะพยาบาลศาสตร์ จุฬาลงกรณ์
มหาวิทยาลัย กำลังทำวิจัยเรื่องปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาล
ในโรงพยาบาลรัฐ เนื่องจากความตั้งใจในการลาออกจากวิชาชีพพยาบาล เป็นจุดเริ่มต้นที่จะนำไปสู่
การลาออกจากวิชาชีพพยาบาล ซึ่งทำให้ประสบกับปัญหาการขาดแคลนพยาบาลวิชาชีพ และส่งผล
กระทบต่อการให้บริการสุขภาพแก่ประชาชนและคุณภาพของการให้บริการทางสุขภาพ สำหรับ
ประเทศไทย พยาบาลยังมีแนวโน้มการลาออกที่เพิ่มมากขึ้น และยังทราบไม่แน่ชัดว่ามีปัจจัยใดบ้าง
ที่มีผลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐบาล ด้วยเหตุนี้ผู้วิจัยจึง
ทำวิจัยเรื่องนี้ขึ้น

ก่อนที่ผู้มีส่วนร่วมในการวิจัยจะตัดสินใจเข้าร่วมในการวิจัยนี้ มีความจำเป็นที่จะต้องทราบ
ว่างานวิจัยนี้ทำเพราะเหตุใด และเกี่ยวข้องกับอะไร ดังนั้นผู้วิจัยจึงจัดทำเอกสารฉบับนี้ขึ้นเพื่อบอก
เล่าข้อมูลของผู้วิจัยและการดำเนินการวิจัย ซึ่งผู้มีส่วนร่วมในการวิจัยสามารถนำข้อมูลในเอกสาร
ฉบับนี้ไปใช้ประกอบการตัดสินใจว่าจะเข้าร่วมหรือไม่เข้าร่วมในการวิจัยครั้งนี้ กรุณาอ่านข้อมูล
ต่อไปนี้อย่างละเอียด และสอบถามข้อมูลเพิ่มเติมหรือข้อมูลที่ไม่ชัดเจนจากผู้วิจัยได้ตลอดเวลา

(1) การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจาก
วิชาชีพของพยาบาลในโรงพยาบาลรัฐ

ประโยชน์ของการวิจัยนี้ ช่วยให้ผู้บริหารทางการพยาบาลและผู้กำหนดนโยบายมีความ
เข้าใจปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ โดย
สามารถนำผลการศึกษาไปเป็นแนวทางในการกำหนดแนวทางในการวางแผนด้านอัตรากำลัง
บุคลากรพยาบาล และปรับปรุงพัฒนารูปแบบของการบริหารบุคลากรพยาบาลให้มีประสิทธิภาพ
มากยิ่งขึ้นอันจะนำไปสู่คุณภาพการพยาบาลที่ดี โดยมีเป้าหมายในการลดจำนวนการลาออกและ
สร้างกลยุทธ์ในการธำรงพยาบาลให้คงอยู่ในวิชาชีพพยาบาลต่อไป ซึ่งในงานวิจัยครั้งนี้มีความ
เสี่ยงเพียงเล็กน้อย (minimal risks) โดยผู้เข้าร่วมวิจัยอาจจะเสียเวลาในการตอบแบบสอบถามซึ่ง

อาจจะทำให้ท่านเกิดความไม่สะดวก และหากท่านมีข้อสงสัยใดๆ เกี่ยวกับความเสี่ยงที่อาจได้รับจากการเข้าร่วมในโครงการวิจัย ท่านสามารถสอบถามจากผู้ทำวิจัยได้ตลอดเวลา

(3) ในการวิจัยครั้งนี้ มีเกณฑ์ในการคัดเลือกผู้มีส่วนร่วมในการวิจัยดังนี้ 1. เป็นพยาบาลวิชาชีพ 2. ปฏิบัติงานเต็มเวลาในโรงพยาบาลรัฐ 3. ไม่จำแนกเพศศึกษาทั้งในพยาบาลชายและหญิง 4. ประสบการณ์ทำงานไม่น้อยกว่า 3 เดือน และ 5. ยินดีเข้าร่วมการวิจัย หากผู้มีส่วนร่วมในการวิจัยอยู่ในระหว่างการลาคลอด ลาป่วย หรือลาศึกษาต่อ, มีประสบการณ์การทำงานน้อยกว่า 3 เดือน, ไม่ยินดีเข้าร่วมในงานวิจัยหรือ ถอนตัวระหว่างตอบแบบสอบถาม จะถือว่าผู้นั้นไม่ได้เป็นผู้มีส่วนร่วมในการวิจัย

หลังจากได้รับอนุมัติให้เก็บรวบรวมข้อมูลจากโรงพยาบาลต่างๆแล้ว ผู้วิจัยจะสอบถามรายชื่อพยาบาลวิชาชีพที่ปฏิบัติงานอยู่ในโรงพยาบาลนั้นๆ เพื่อทำการสุ่มพยาบาลผู้ที่เข้าร่วมในงานวิจัย หลังจากนั้นผู้วิจัยจะสอบถามถึงความสมัครใจและความยินยอมในการเข้าร่วมวิจัยก่อนหลังได้รับการยินยอมแล้ว ผู้วิจัยจึงจะให้ผู้มีส่วนร่วมในการวิจัยตอบแบบสอบถาม

(4) ผู้มีส่วนร่วมในการวิจัยจะได้รับการชี้แจงจากผู้วิจัยถึงวัตถุประสงค์ และกระบวนการเก็บรวบรวมข้อมูล เริ่มจากผู้มีส่วนร่วมในการวิจัยจะได้รับทราบว่า ข้อมูลที่จะตอบในแบบสอบถามจะเป็นความลับ จะไม่มีผู้ใดรู้ว่าแบบสอบถามนี้เป็นของใคร ผู้มีส่วนร่วมในการวิจัยไม่ต้องกรอกชื่อ-นามสกุล เมื่อทำเสร็จแล้วให้นำแบบสอบถามใส่ซองที่เตรียมไว้ให้ทันทีโดยไม่ให้ผู้ใดเห็นคำตอบในแบบสอบถาม และปิดผนึกให้เรียบร้อย นอกจากนี้ผู้มีส่วนร่วมในการวิจัยจะได้รับการแจ้งว่าการตอบคำถามแต่ละข้อ ไม่มีข้อใดถูกหรือผิด คำตอบจะเป็นเพียงความคิดเห็นของผู้มีส่วนร่วมในการวิจัยเท่านั้น จะไม่มีผลต่อการพิจารณาประเมินผลการปฏิบัติงาน แบบสอบถามมีทั้งหมด 8 ชุดคำถาม ประกอบไปด้วย 1.แบบสอบถามความตั้งใจในการลาออกจากวิชาชีพ จำนวน 3 ข้อ 2.แบบสอบถามความพึงพอใจในงาน จำนวน 38 ข้อ 3.แบบสอบถามความผูกพันต่อวิชาชีพ จำนวน 18 ข้อ 4. แบบสอบถามความเหน็ดเหนื่อยจำนวน 19 ข้อ 5.แบบสอบถามความขัดแย้งระหว่างงานกับครอบครัว จำนวน 5 ข้อ 6.แบบสอบถามสภาพแวดล้อมการปฏิบัติงานพยาบาล จำนวน 31 ข้อ 7. แบบสอบถาม โอกาสการจ้างงาน จำนวน 4 ข้อ และ 8. แบบสอบถามข้อมูลทั่วไป จำนวน 10 ข้อ รวมทั้งสิ้น 128 ข้อ ซึ่งจะใช้เวลาในการตอบแบบสอบถามประมาณ 60 นาที ซึ่งกระบวนการเก็บข้อมูลทั้งหมดจะดำเนินการในห้องที่เป็นส่วนตัว โดยมีเพียงผู้วิจัยและผู้มีส่วนร่วมในการวิจัยเท่านั้น

(5) การเข้าร่วมในการวิจัยของผู้มีส่วนร่วมในการวิจัยเป็นโดยสมัครใจ และมีสิทธิในการปฏิเสธหรือสามารถถอนตัวจากการศึกษาได้ตลอดเวลา ทั้งนี้การปฏิเสธหรือถอนตัวจะไม่มีผลกระทบใดๆต่อผู้มีส่วนร่วมในการวิจัยทั้งสิ้น

(6) หากผู้มีส่วนร่วมในการวิจัยมีข้อสงสัยให้สอบถามเพิ่มเติมได้จากผู้วิจัย โดยสามารถติดต่อผู้วิจัยได้ตลอดเวลาที่ นางสาวภัทรา เพ็ญพันธ์ คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย หรือทางโทรศัพท์ 081-255-1198 และหากผู้วิจัยมีข้อมูลเพิ่มเติมที่เป็นประโยชน์หรือโทษ เกี่ยวกับการวิจัย ผู้วิจัยจะแจ้งให้ผู้มีส่วนร่วมในการวิจัยทราบอย่างรวดเร็ว เพื่อให้ผู้มีส่วนร่วมในการวิจัย ทบทวนว่ายังสมัครใจที่จะเป็นผู้มีส่วนร่วมในการวิจัยต่อไปหรือไม่

(7) ข้อมูลที่ได้จากการตอบแบบสอบถามของผู้มีส่วนร่วมในการวิจัยจะถูกนำไปรวมกับ ข้อมูลของคนอื่นๆ โดยข้อมูลจะถูกเก็บเป็นความลับและผู้วิจัยจะใช้รหัสแทนชื่อ-นามสกุลในแบบ บันทึกรายข้อมูล หากผู้วิจัยตีพิมพ์ผลการศึกษา ผู้วิจัยจะไม่มีภาระระบุชื่อของผู้มีส่วนร่วมในการวิจัยไม่ ว่ากรณีใดๆ

(8) การวิจัยครั้งนี้มีการมอบปากกา 1 ด้าม และซองใส่เอกสาร 1 ใบ เป็นของที่ระลึกแก่ผู้มีส่วนร่วมในการวิจัยเมื่อสิ้นสุดการตอบแบบสอบถาม หรือเมื่อผู้มีส่วนร่วมในการวิจัยถอนตัว

(9) หากผู้มีส่วนร่วมในการวิจัยไม่ได้รับการปฏิบัติตามข้อมูลดังกล่าว สามารถร้องเรียนได้ที่ คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ชั้น 4 อาคารสถาบัน 2 ซอยจุฬาลงกรณ์ 62 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์ 0-2218-8147 หรือ 0-2218-8141 โทรสาร 0-2218-8147 E-mail: eccu@chula.ac.th



Appendix E
Research instruments



แบบสอบถามในงานวิจัยเรื่อง
ปัจจัยที่มีอิทธิพลต่อความตั้งใจในการลาออกจากวิชาชีพของพยาบาลในโรงพยาบาลรัฐ

ทุกคำตอบในแบบสอบถามนี้จะเป็นความลับ จะไม่มี
ผู้ใดเห็นคำตอบของคุณ

อ่านข้อความแต่ละข้อ แล้วตอบตามความจริง ไม่มีข้อ
ไหนถูกและไม่มีข้อไหนผิด

ซึ่งในแบบสอบถามนี้มีทั้งหมด 8 ส่วน มีข้อคำถามทั้งสิ้น
128 ข้อ

เมื่อพร้อมแล้ว.....เปิดหน้าต่อไป แล้วเริ่มตอบ
แบบสอบถามได้เลยค่ะ



ตัวอย่างแบบสอบถามความพึงพอใจในงาน

คำชี้แจง ข้อความต่อไปนี้เกี่ยวข้องกับความพึงพอใจในงานของพยาบาลที่ท่านปฏิบัติ
อยู่ กรุณาโปรดตอบคำถามทุกข้อ โดยพิจารณาเลือกตอบตามความคิดหรือรู้สึกที่แท้จริง
และทำเครื่องหมาย ✓ ลงในช่องความคิดเห็นที่ตรงกับความคิดหรือรู้สึกของท่านมาก
ที่สุดเพียงข้อเดียว

โดยที่

1 = ไม่เห็นด้วยมากที่สุด 2 = ไม่เห็นด้วยมาก 3 = ค่อนข้างไม่เห็นด้วย 4 = ไม่แน่ใจ
5 = ค่อนข้างเห็นด้วย 6 = เห็นด้วยมาก 7 = เห็นด้วยมากที่สุด

ข้อคำถาม	ไม่เห็นด้วย มากที่สุด	ระดับความคิดเห็น					เห็นด้วย มากที่สุด
		←				→	
1. ฉันพึงพอใจในเงินเดือนที่ได้รับใน ขณะนี้	①	②	③	④	⑤	⑥	⑦
2. คนส่วนใหญ่เห็นความสำคัญของการ พยาบาลที่มีต่อผู้ป่วยในโรงพยาบาล เพียงเล็กน้อย	①	②	③	④	⑤	⑥	⑦
3. บุคลากรพยาบาลผู้ร่วมงานของฉัน ร่วมมือช่วยเหลือกันเมื่อมีงานเร่งรีบ	①	②	③	④	⑤	⑥	⑦
4. หน่วยงานของฉันสามารถให้พยาบาล กำหนดตารางเวรของตนเองได้	①	②	③	④	⑤	⑥	⑦
5. โดยทั่วไปในหน่วยงานของฉันแพทย์ กับพยาบาลให้ความร่วมมือกันดี	①	②	③	④	⑤	⑥	⑦
6.	①	②	③	④	⑤	⑥	⑦
7.	①	②	③	④	⑤	⑥	⑦

ตัวอย่างแบบสอบถามความผูกพันต่อวิชาชีพ

คำชี้แจง ข้อความต่อไปนี้เกี่ยวข้องกับความผูกพันต่อวิชาชีพพยาบาล กรุณาโปรดตอบคำถามทุกข้อ โดยพิจารณาเลือกตอบตามความคิดหรือรู้สึกที่แท้จริงและทำเครื่องหมาย ✓ ลงในช่องความคิดเห็นที่ตรงกับความคิดหรือรู้สึกของท่านมากที่สุดเพียงข้อเดียว

โดยที่

เห็นด้วยน้อยที่สุด = 1

เห็นด้วยน้อย = 2 เห็นด้วยปานกลาง = 3

เห็นด้วยมาก = 4

เห็นด้วยมากที่สุด = 5

ข้อคำถาม	เห็นด้วยน้อยที่สุด	ระดับความคิดเห็น			เห็นด้วยมากที่สุด
		←		→	
1. งานการพยาบาลเป็นงานที่น่าสนใจที่สุดสำหรับฉัน	①	②	③	④	⑤
2. การเป็นพยาบาลมีความหมายมากสำหรับฉัน	①	②	③	④	⑤
3. ฉันอยากเป็นพยาบาลไปตลอดชีวิตการทำงาน	①	②	③	④	⑤
4. ฉันภูมิใจที่จะสนทนาเรื่องการพยาบาลกับคนอื่น ๆ เมื่อมีโอกาส	①	②	③	④	⑤
5.	①	②	③	④	⑤
6.	①	②	③	④	⑤
7.	①	②	③	④	⑤
8.	①	②	③	④	⑤

ตัวอย่าง แบบสอบถามความเหนื่อยล้า

คำชี้แจง ข้อความต่อไปนี้เกี่ยวข้องกับคำถามความเหนื่อยล้า กรุณาโปรดตอบคำถามทุกข้อ โดยพิจารณาเลือกตอบตามความคิดหรือรู้สึกที่แท้จริงและทำเครื่องหมาย ✓ ลงในช่องความคิดเห็นที่ตรงกับความคิดหรือรู้สึกของท่านมากที่สุดเพียงข้อเดียว

ไม่เคย	นานๆครั้ง	บางครั้ง	บ่อยๆ	เสมอ
= 1	= 2	= 3	= 4	= 5
0%ของเวลา	25%ของเวลา	50%ของเวลา	75%ของเวลา	100%ของเวลา

ข้อคำถามเหล่านี้เกิดขึ้นบ่อยเพียงไร	ไม่เคย	นานๆครั้ง	บางครั้ง	บ่อยๆ	เสมอ
ความเหนื่อยล้าส่วนบุคคล					
1. คุณรู้สึกเหนื่อยบ่อยแค่ไหน	①	②	③	④	⑤
2. คุณรู้สึกหมดแรงกายบ่อยแค่ไหน	①	②	③	④	⑤
3. คุณรู้สึกหมดแรงใจบ่อยแค่ไหน	①	②	③	④	⑤
4.	①	②	③	④	⑤
5.	①	②	③	④	⑤
6.	①	②	③	④	⑤
ความเหนื่อยล้าจากงาน					
7.	①	②	③	④	⑤
8.	①	②	③	④	⑤

ตัวอย่าง แบบสอบถามสภาพแวดล้อมการปฏิบัติงานพยาบาล

คำชี้แจง ข้อความต่อไปนี้เกี่ยวข้องกับสภาพแวดล้อมการปฏิบัติงานพยาบาล กรุณา
โปรดตอบคำถามทุกข้อ โดยพิจารณาเลือกตอบตามความคิดหรือรู้สึกที่แท้จริงและทำ
เครื่องหมาย ✓ ลงในช่องความคิดเห็นที่ตรงกับความคิดหรือรู้สึกของท่านมากที่สุดเพียง
ข้อเดียว

โดยที่

ไม่เห็นด้วยมากที่สุด = 1

ไม่เห็นด้วย = 2

เห็นด้วย = 3

เห็นด้วยมากที่สุด = 4

ข้อคำถาม	ไม่เห็นด้วยมากที่สุด	ไม่เห็นด้วย	เห็นด้วย	เห็นด้วยมากที่สุด
1. บุคลากรพยาบาลมีส่วนร่วมในการบริหารจัดการงานของโรงพยาบาล	①	②	③	④
2. บุคลากรพยาบาลมีโอกาสเข้ามามีส่วนร่วมในการตัดสินใจดำเนินนโยบายของโรงพยาบาล	①	②	③	④
3. บุคลากรพยาบาลมีโอกาสมากมายที่จะก้าวหน้าในงานของโรงพยาบาล	①	②	③	④
4.	①	②	③	④
5.	①	②	③	④
6.	①	②	③	④
7.	①	②	③	④
8.	①	②	③	④

ตัวอย่างแบบสอบถามความขัดแย้งระหว่างงานและครอบครัว

คำชี้แจง ข้อความต่อไปนี้เกี่ยวข้องกับความสัมพันธ์ระหว่างงานและครอบครัว กรุณาโปรดตอบคำถามทุกข้อโดยพิจารณาเลือกตอบตามความคิดหรือรู้สึกที่แท้จริงและทำเครื่องหมาย ✓ ลงในช่องความคิดเห็นที่ตรงกับความคิดหรือรู้สึกของท่านมากที่สุดเพียงข้อเดียว

โดยที่

เห็นด้วยน้อยที่สุด = 1 เห็นด้วยน้อย = 2 เห็นด้วยปานกลาง = 3
เห็นด้วยมาก = 4 เห็นด้วยมากที่สุด = 5

ข้อความ	เห็นด้วยน้อยที่สุด	ระดับความคิดเห็น			เห็นด้วยมากที่สุด
		←		→	
1. หน้าที่และงานที่มอบหมายของฉันมีผลกระทบต่อชีวิตทางบ้านและครอบครัวของฉัน	①	②	③	④	⑤
2. งานของฉันใช้ปริมาณเวลาทำให้ยากที่จะทำสิ่งที่ต้องรับผิดชอบต่อครอบครัว	①	②	③	④	⑤
3.	①	②	③	④	⑤
4.	①	②	③	④	⑤
5.	①	②	③	④	⑤

ตัวอย่างแบบสอบถาม โอกาสการจ้างงาน

คำชี้แจง ข้อความต่อไปนี้เกี่ยวข้องกับโอกาสในการจ้างงาน กรุณาโปรดตอบคำถามทุกข้อโดยพิจารณาเลือกตอบตามความคิดหรือรู้สึกที่แท้จริงและทำเครื่องหมาย ✓ ลงในช่องความคิดเห็นที่ตรงกับความคิดหรือรู้สึกของท่านมากที่สุดเพียงข้อเดียว

โดยที่

เห็นด้วยน้อยที่สุด = 1

เห็นด้วยน้อย = 2

เห็นด้วยปานกลาง = 3

เห็นด้วยมาก = 4

เห็นด้วยมากที่สุด = 5

ข้อคำถาม	เห็นด้วยน้อยที่สุด	ระดับความคิดเห็น			เห็นด้วยมากที่สุด
		←		→	
1. ถ้าฉันลาออกจากรางานปัจจุบัน ฉันคิดว่ามีโอกาสมากที่จะได้งานพยาบาลใหม่ซึ่งดีเท่ากับหรือดีกว่างานที่ทำอยู่ในปัจจุบัน	①	②	③	④	⑤
2. ฉันคิดว่า เป็นเรื่องง่ายที่พยาบาลจะมีโอกาสได้รับการจ้างงาน	①	②	③	④	⑤
3.	①	②	③	④	⑤
4.	①	②	③	④	⑤

ใกล้จบแล้วค่ะ ต่อไปเป็นคำถามง่ายๆ เกี่ยวกับความคิดและข้อมูลเกี่ยวกับตัวคุณ

ตัวอย่าง แบบสอบถามเกี่ยวกับความตั้งใจในการลาออกจากวิชาชีพของพยาบาล

คำชี้แจง แบบสอบถามนี้ต้องการทราบถึงความต้องการในการลาออกจากวิชาชีพ ให้ท่านทบทวนความคิดในข้อความต่อไปนี้และทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับความเป็นจริงมากที่สุดเพียงข้อเดียว

โดยที่

ไม่เคย = 1

ปีละครั้ง = 2

เดือนละครั้ง = 3

สัปดาห์ละครั้ง = 4

ทุกวัน = 5

ข้อความนี้เกิดขึ้นบ่อยเพียงไร	ไม่เคย	ปีละครั้ง	เดือนละครั้ง	สัปดาห์ละครั้ง	ทุกวัน
1. คุณมีความคิดที่จะเลิกทำงานพยาบาล โดยสิ้นเชิงบ่อยแค่ไหน ในช่วง 1 ปีที่ผ่านมา	①	②	③	④	⑤
2.	①	②	③	④	⑤
3.	①	②	③	④	⑤

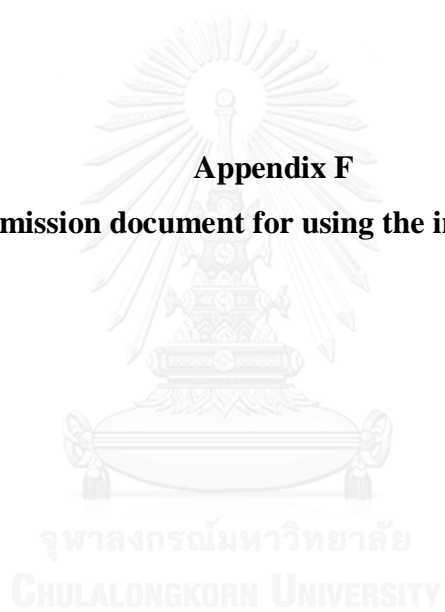
ตัวอย่างแบบสอบถามข้อมูลส่วนบุคคล

คำชี้แจง แบบสอบถามนี้มี 10 ข้อ ต้องการทราบถึงข้อมูลทั่วไปของพยาบาลและ
 โรงพยาบาล กรุณาทำเครื่องหมาย ✓ ลงในช่องหน้าข้อความที่ตรงกับข้อเท็จจริงของ
 ท่าน หรือเติมข้อความให้สมบูรณ์

1. อายุ.....ปี
2. เพศ ชาย หญิง
3. คุณวุฒิการศึกษา
 ปริญญาตรีหรือเทียบเท่า ปริญญาโท ปริญญาเอก
4. เงินเดือน.....บาท
5. สถานภาพ โสด สมรส หม้าย หย่าร้าง
6. ระยะเวลาการทำงานในองค์กรปัจจุบัน
 ต่ำกว่า 5 ปี ตั้งแต่ 5-10 ปี ตั้งแต่ 11-15 ปี
 ตั้งแต่ 16-20 ปี มากกว่า 20 ปีขึ้นไป
7. ลักษณะการจ้างงาน
 ข้าราชการพลเรือน ข้าราชการ ลูกจ้างชั่วคราว ลูกจ้างประจำ
 อื่นๆ(ระบุ).....
8. ตำแหน่งงาน พยาบาลประจำการ อื่นๆ(ระบุ).....
9. แผนก/หน่วยงาน.....
10. โรงพยาบาล.....

เสร็จแล้วค่ะ ข้อมูลของคุณในการตอบแบบสอบถามจะถูกเก็บเป็นความลับ
 ขอบคุณมากค่ะที่ให้ความร่วมมือในการตอบแบบสอบถาม

Appendix F
Permission document for using the instruments





January 9, 2015

Ms. Patra Phuekphan
Chulalongkorn University, Faculty of Nursing
Boromarajonani Srisatapat Building, Floor 11th, Rama 1 Road, Pathumwan
Bangkok, Thailand

To Whom It May Concern:

This letter gives Patra Phuekphan permission to use the copyrighted Index of Work Satisfaction. It may be re-published in its original form or a modified form.

Sincerely,

A handwritten signature in black ink that reads "Michelle O'Shepa".

Michelle O'Shepa
Executive Assistant
Market Street Research

31 Trumbull Rd. Northampton MA 01060 tel 413.582.1200 fax 413.582.1206
www.marketstreetresearch.com contact@marketstreetresearch.com

Solicited questionnaires consent letter

I intend to use Huang Li-Chi, et al., (2007) "Nurses' Professional Commitment Scale" on the research project: Factors influencing intention to leave nursing profession among registered nurses, governmental hospitals, and also agree to identify the sources in the study report.

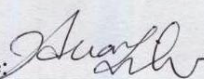
Principle Investigator Signature: Patra Phuekphan

Date: 8/1/2014

Consent Agreement

I agree with the above researchers used "Nurses' Professional Commitment Scale" to collection the data and translate the language under a psychometric procedure as needed.

Sincerely wish the study success completely!

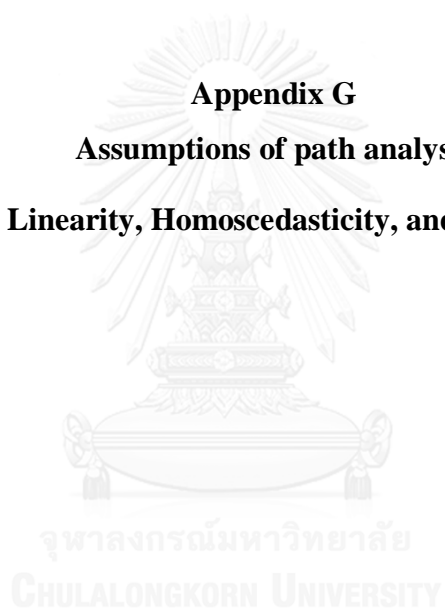
Signature: 

Date: Jan, 9, 2014

Appendix G

Assumptions of path analysis

Normality, Linearity, Homoscedasticity, and Multicollinearity



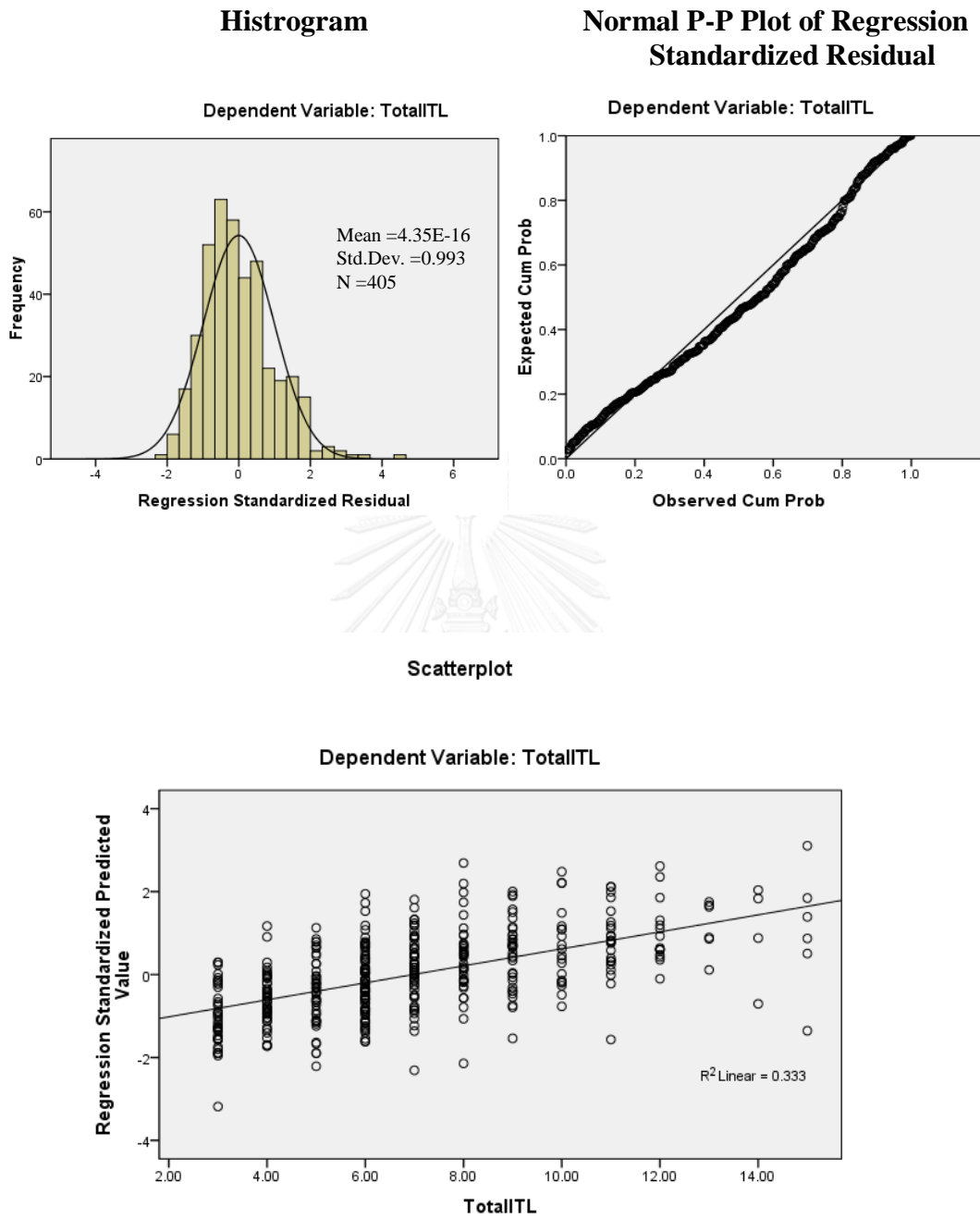
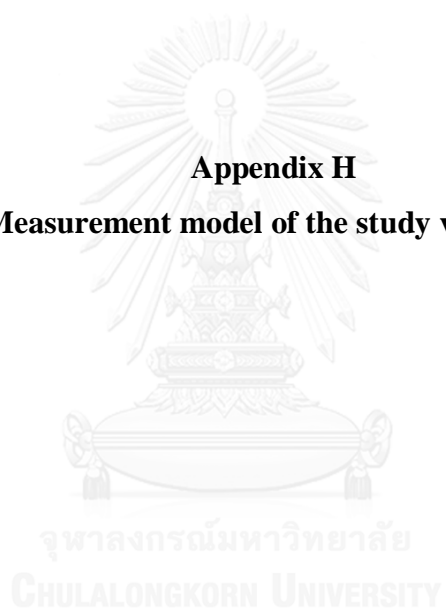
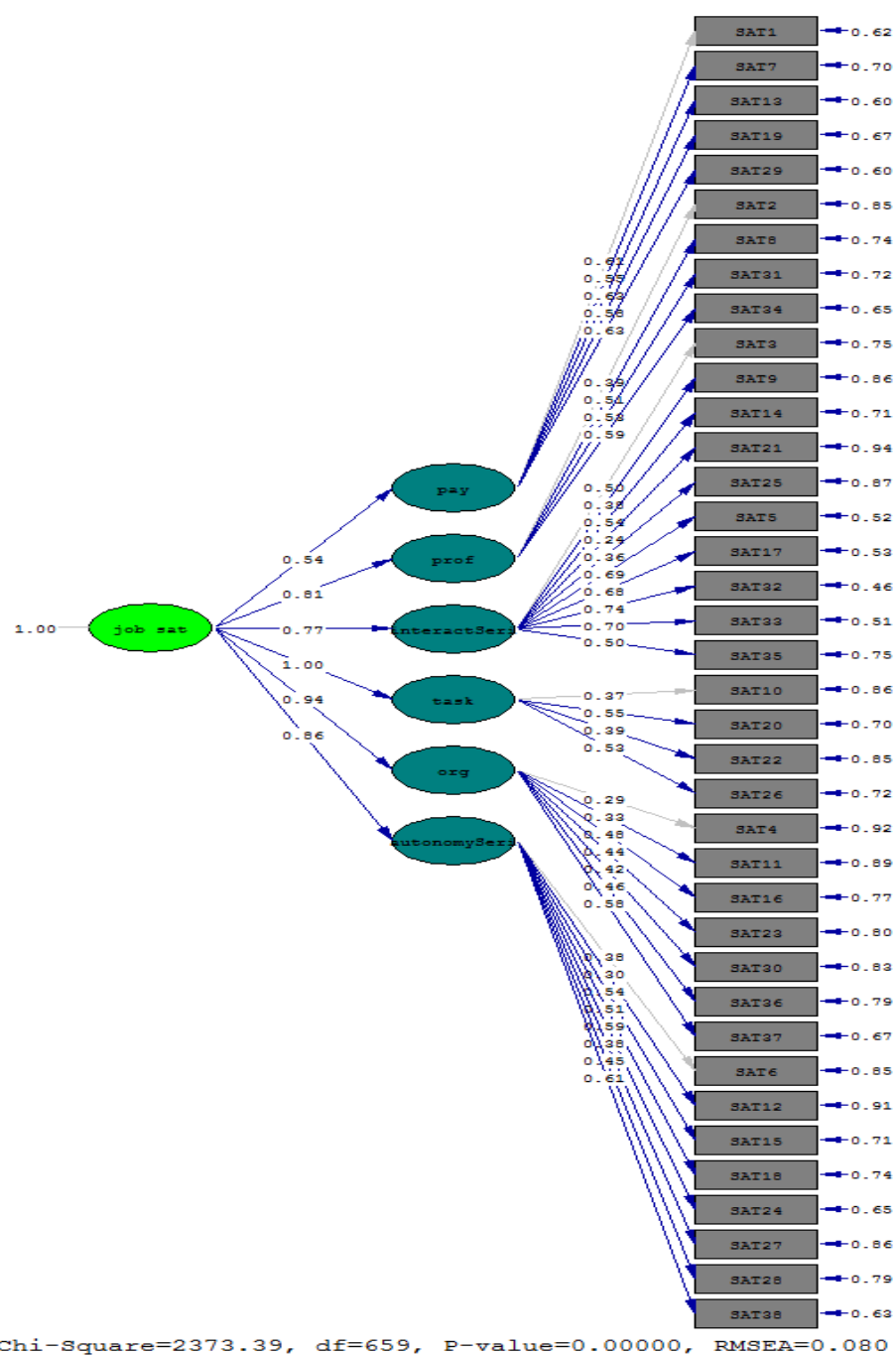


Figure 13 Assumption testing: Normality, linearity, and homoscedasticity

Appendix H
Measurement model of the study variables

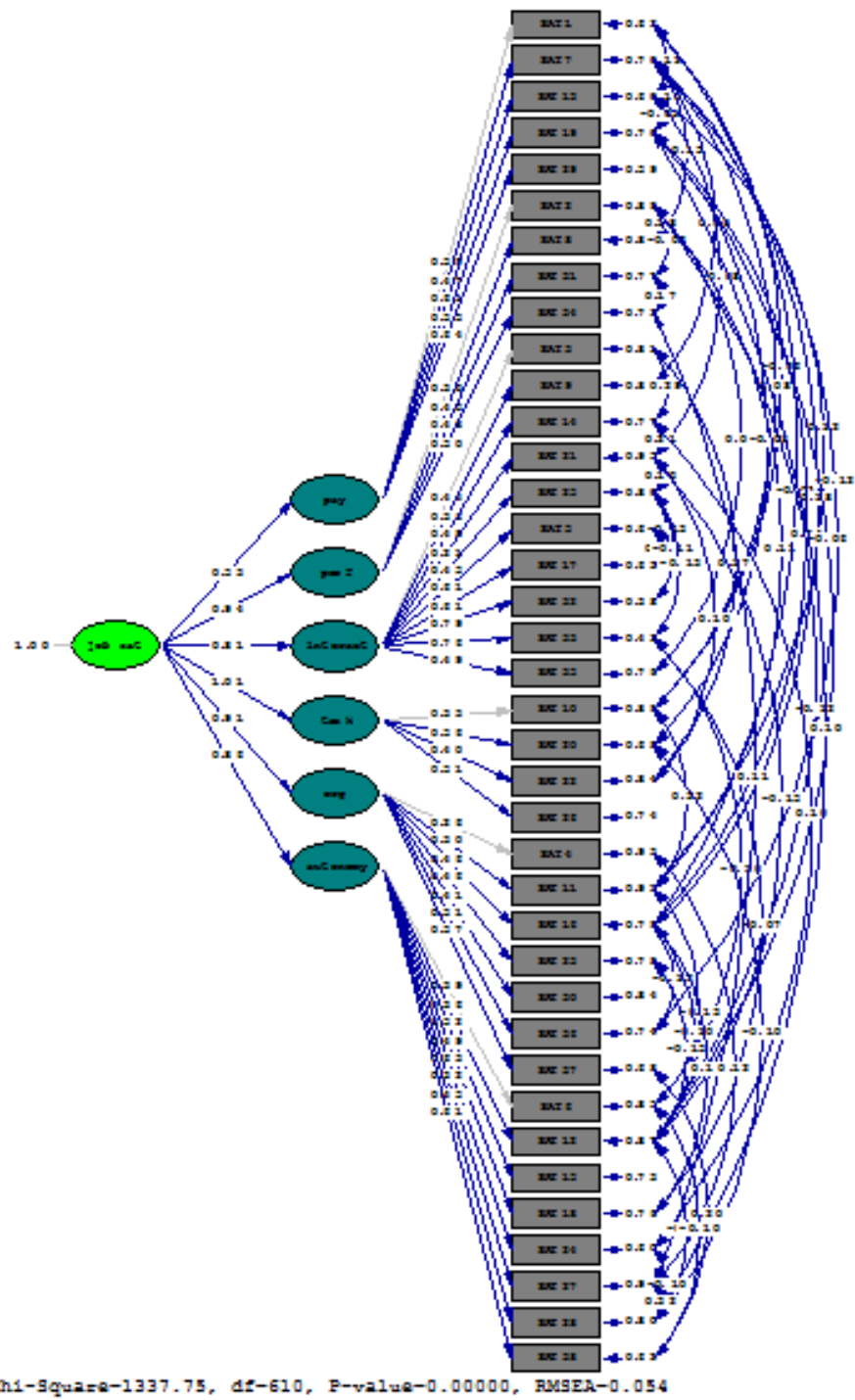


Measurement model testing of Job satisfaction



$\chi^2 = 2373.39$, $df = 659$, $\chi^2/df = 3.60$, GFI=0.76, CFI= 0.88, RMSEA= 0.080, SRMR= 0.077

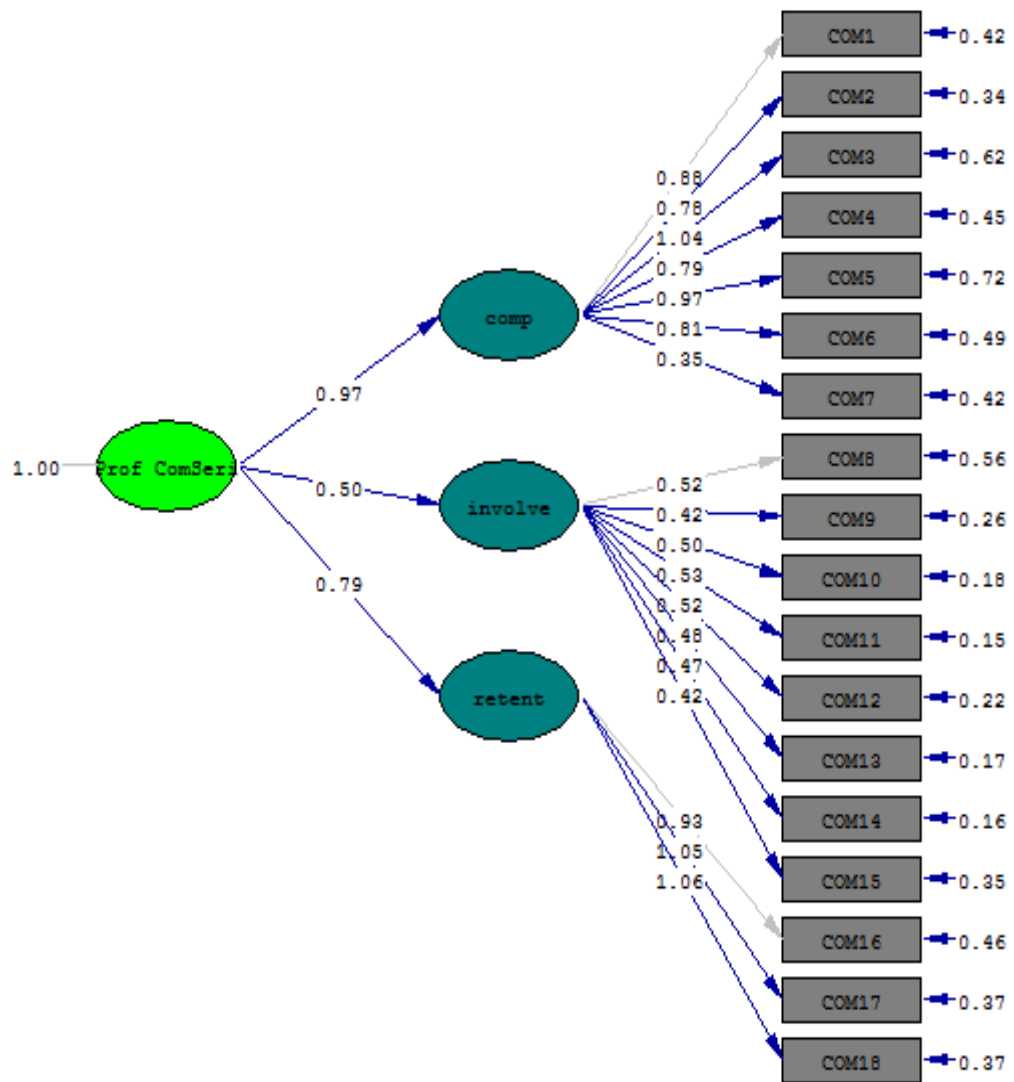
Figure 14 the measurement model of the JS: Initial model



$\chi^2 = 1337.75$, $df = 610$, $\chi^2/df = 2.19$, $GFI = 0.85$, $CFI = 0.94$, $RMSEA = 0.05$, $SRMR = 0.06$

Figure 15 the measurement model of the JS: Revised model

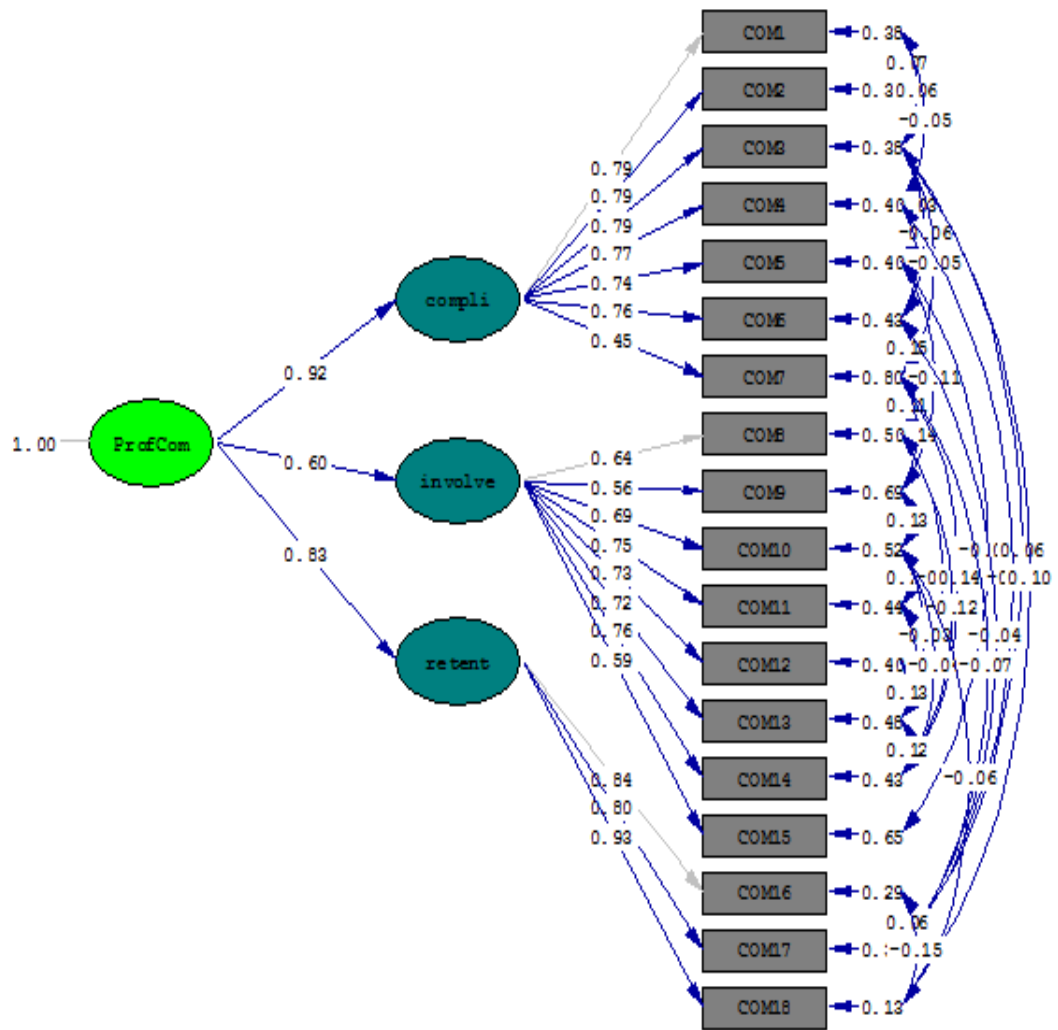
Measurement model testing of Professional commitment



Chi-Square=712.38, df=132, P-value=0.00000, RMSEA=0.104

$\chi^2 = 712.38$, $df = 132$, $\chi^2/df = 5.39$, GFI=0.84, CFI= 0.95, NFI= 0.94, RMSEA= 0.104

Figure 16 the measurement model of the PC: Initial model

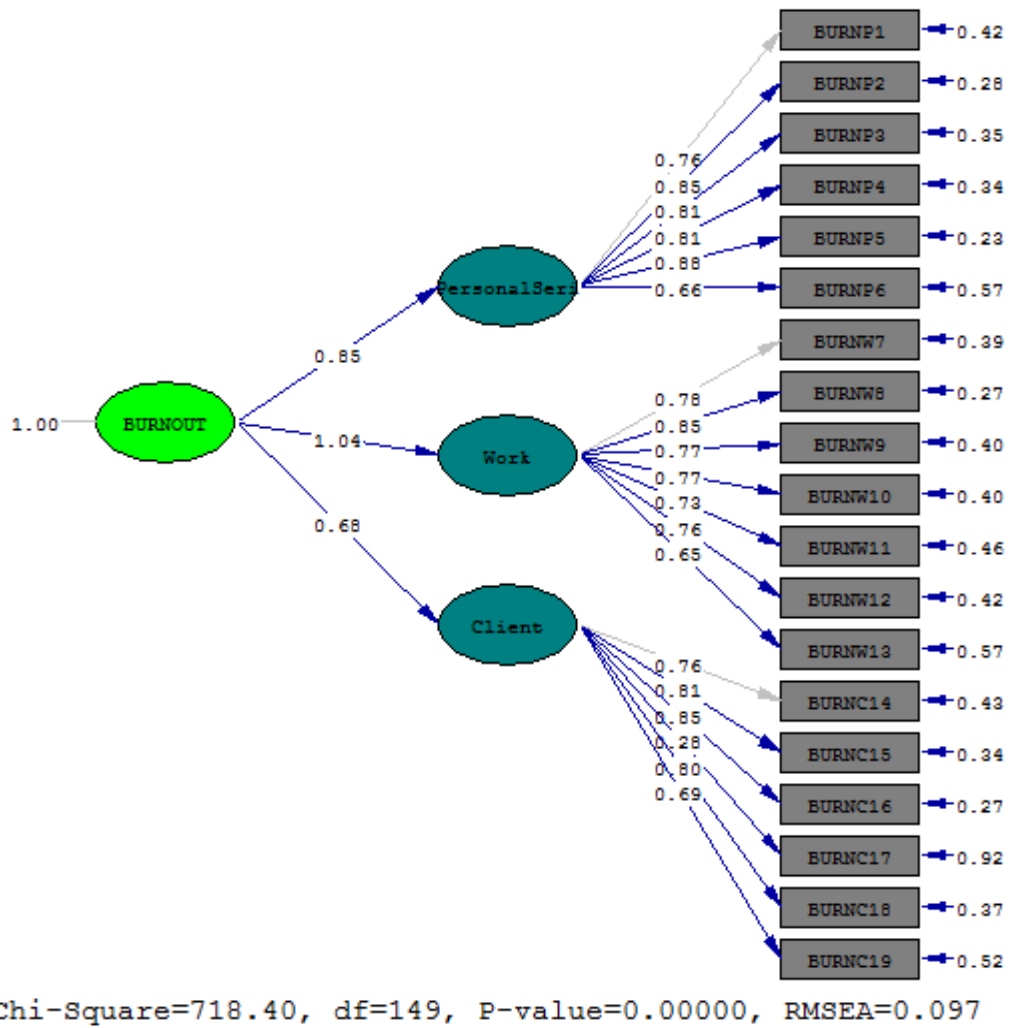


Chi-Square=277.65, df=102, P-value=0.00000, RMSEA=0.065

$\chi^2 = 277.65$, $df = 102$, $\chi^2/df = 2.72$, $GFI = 0.93$, $CFI = 0.98$, $NFI = 0.97$, $RMSEA = 0.06$

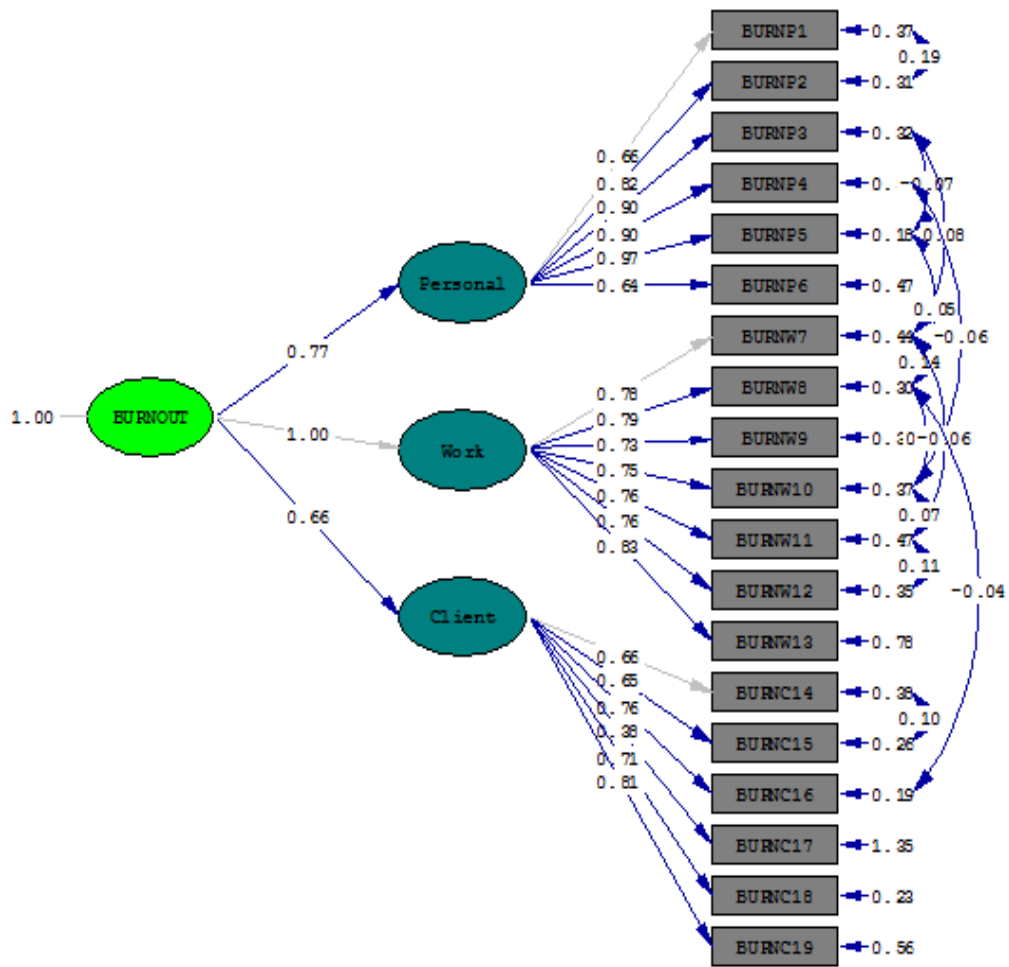
Figure 17 the measurement model of the PC: Revised model

Measurement model testing of Burnout



$\chi^2 = 718.40$, $df = 149$, $\chi^2/df = 4.82$, GFI=0.84, CFI= 0.97, AGFI = 0.80, SRMR = 0.05, RMSEA= 0.097

Figure 18 the measurement model of the BO: Initial model



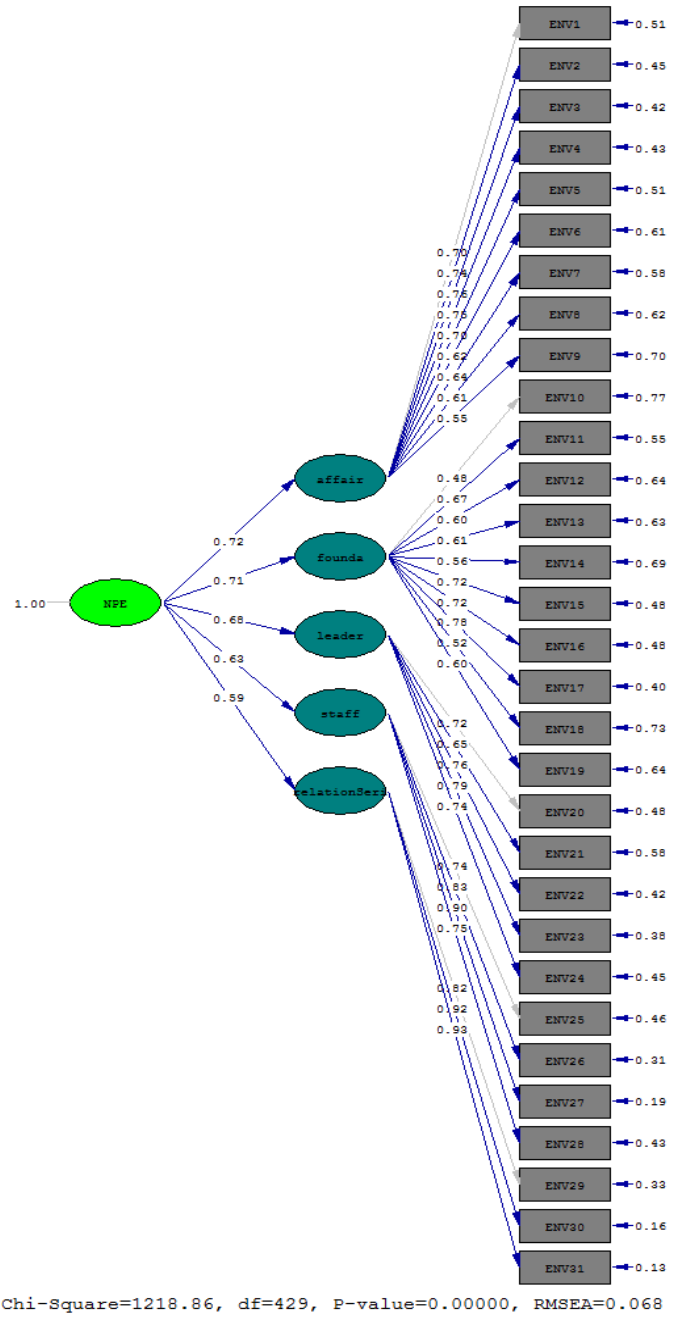
Chi-Square=296.97, df=138, P-value=0.00000, RMSEA=0.053

CHULALONGKORN UNIVERSITY

$\chi^2 = 296.97$, $df = 138$, $\chi^2/df = 2.15$, $GFI = 0.93$, $CFI = 0.99$, $AGFI = 0.90$, $SRMR = 0.05$, $RMSEA = 0.05$

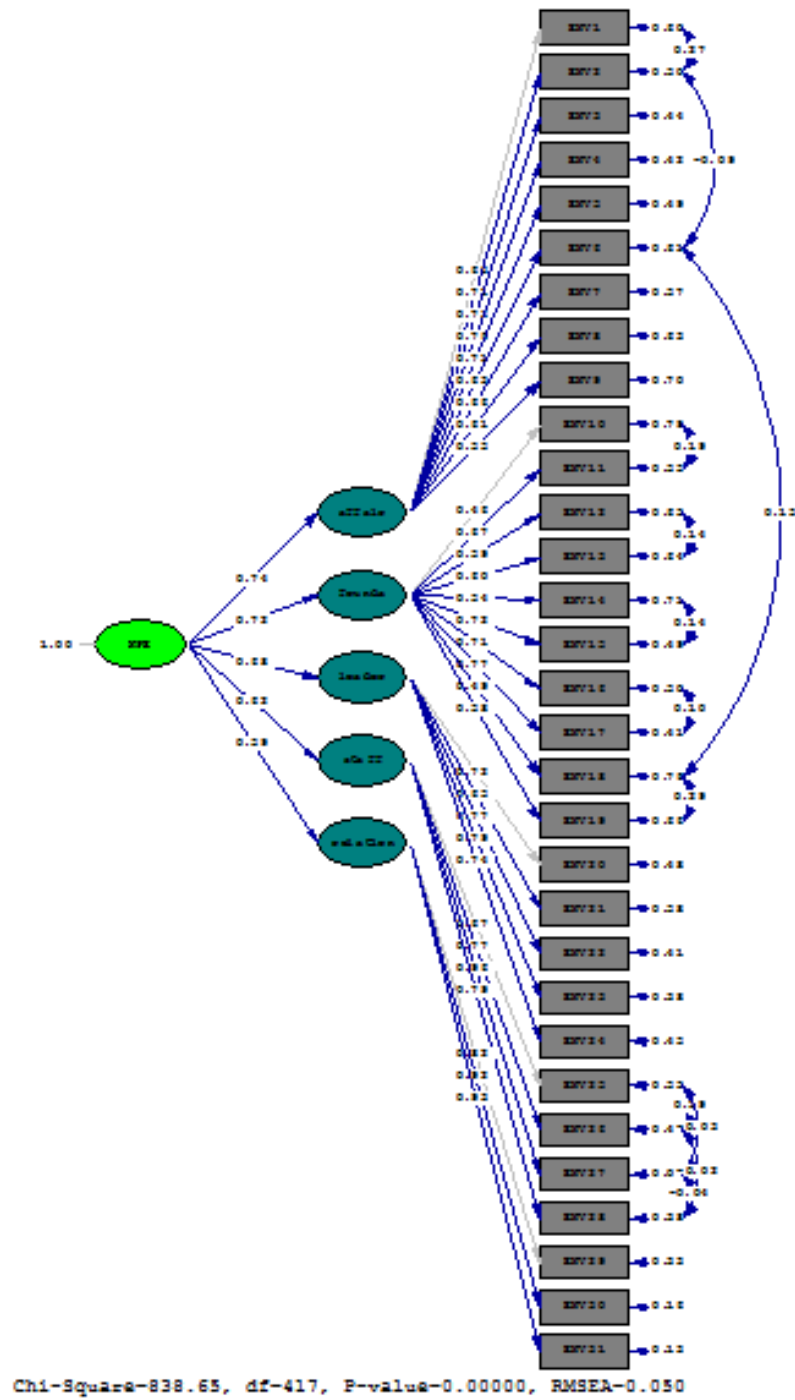
Figure 19 the measurement model of the BO: Revised model

Measurement model testing of Nurse practice environment



$\chi^2 = 1218.86, df = 429, \chi^2/df = 2.84, GFI=0.84, CFI=0.96, NFI= 0.94, RMSEA=0.06$

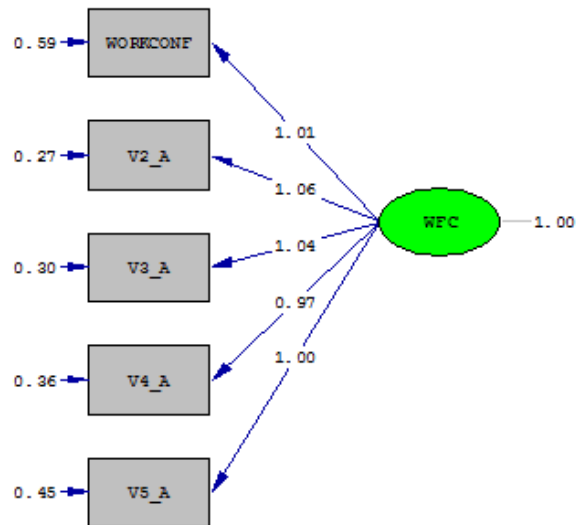
Figure 20 the measurement model of the NPE: Initial model



$\chi^2 = 838.65$, $df = 417$, $\chi^2/df = 2.01$, $GFI=0.88$, $CFI=0.98$, $NFI= 0.96$, $RMSEA=0.05$

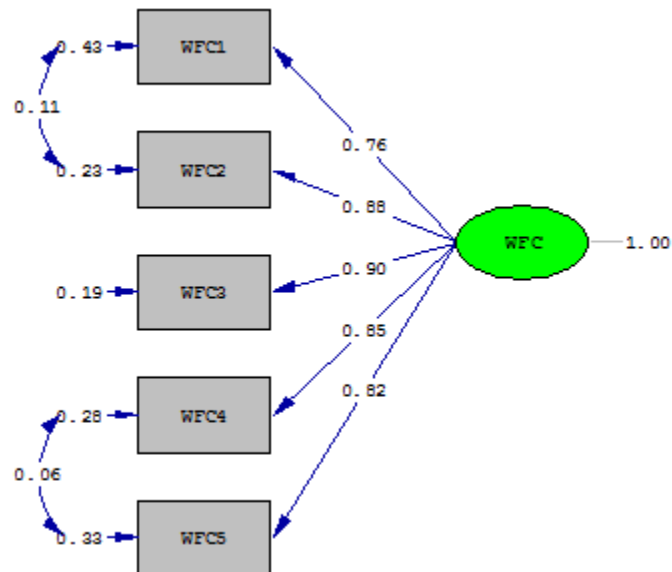
Figure 21 the measurement model of the NPE: Revised model

Measurement model testing of Work-family conflict



$\chi^2 = 57.62$, $df = 5$, $\chi^2/df = 11.52$, GFI=0.95, CFI= 0.98, RMSEA= 0.16, SRMR= 0.039

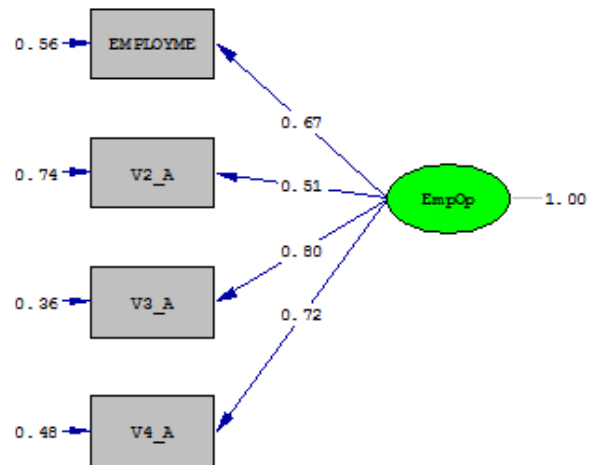
Figure 22 the measurement model of the WFC: Initial model



$\chi^2 = 4.06$, $df = 3$, $\chi^2/df = 1.35$, GFI=1.00, CFI=1.00, RMSEA= 0.03, SRMR=0.01

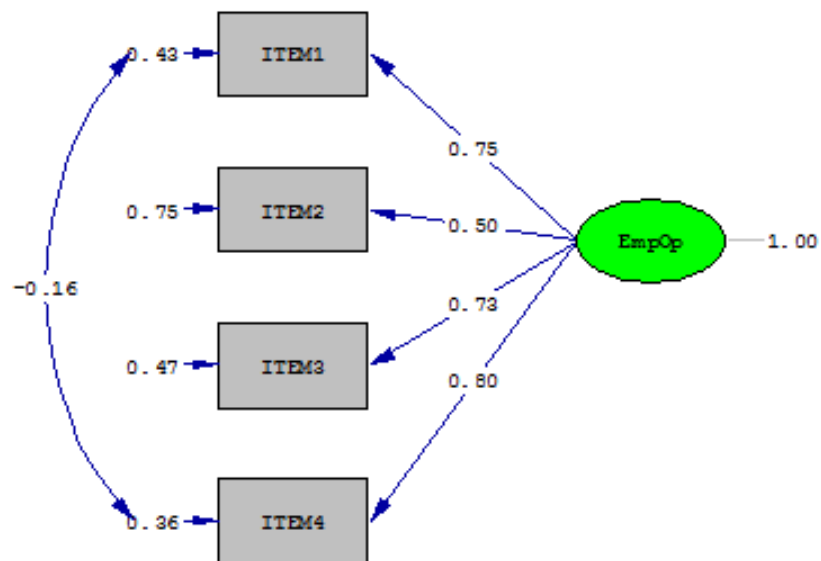
Figure 23 the measurement model of the WFC: Revised model

Measurement model testing of Employment opportunity



$\chi^2 = 9.11$, $df = 2$, $\chi^2/df = 4.55$, $GFI = 0.95$, $CFI = 0.98$, $RMSEA = 0.16$, $SRMR = 0.094$

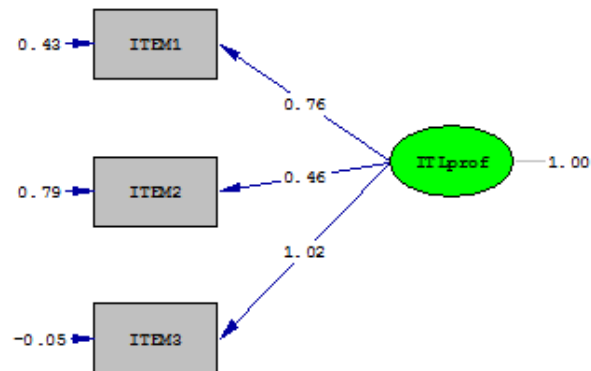
Figure 24 the measurement model of the EO: Initial model



$\chi^2 = 1.18$, $df = 1$, $\chi^2/df = 1.18$, $GFI = 1.00$, $CFI = 1.00$, $RMSEA = 0.03$, $SRMR = 0.02$

Figure 25 the measurement model of the EO: Revised model

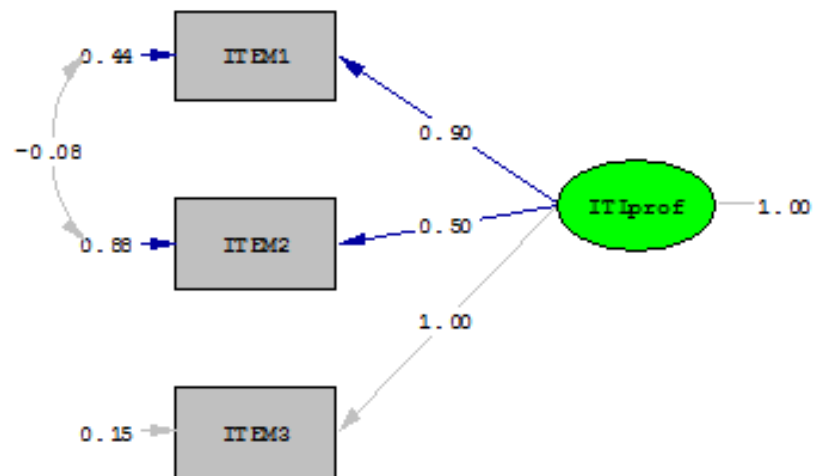
Measurement model testing of Intention to leave nursing profession



Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

$$\chi^2 = 0.00, df = 0, \chi^2/df = 0, RMSEA = 0.00$$

Figure 26 the measurement model of the ITL: Initial model



$$\chi^2 = 4.54, df = 2, \chi^2/df = 2.27, GFI=0.99, CFI=0.99, RMSEA= 0.05$$

Figure 13 the measurement model of the ITL: Revised model



Appendix I

LISREL printout for model testing of the structural equation model

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

DATE: 5/21/2015

TIME: 12:03

L I S R E L 8.53

BY

Karl G. Joreskog & Dag Sörbom

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The following lines were read from file C:\Users\master\Desktop\SEM
 2\SEM2.pr2:

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PS=DI,FR TE=SY TD=SY
LE
ITLprof ProfCom JobSat Burnout
LK
WFC NPE EmpOp
FI LY(1,1) TE 1 1
VA 1.00 LY 1 1
FR LY(2,2) LY(3,2) LY(4,2) LY(5,3) LY(6,3) LY(7,3) LY(8,3) LY(9,3)
FR LY(10,3) LY(11,4) LY(12,4) LY(13,4)
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TD 7 3 TH 5 10 TE 5 3 TE 9 2 TH 4 3 TE 10 5 TH 5 3 TE 5 1 TE 2 4 TH 2 4 TE 7
2 TH 6 10 TH 4 1 TH 7 1 TE 7 5 TE 13 2 TE 13 3 TE 8 5 TD 7 5
PD OU EF FS SS SC AD=OFF MI

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TI SEM2

```

Number of Input Variables 20
Number of Y - Variables 13
Number of X - Variables 7
Number of ETA - Variables 4
Number of KSI - Variables 3
Number of Observations 405

```

TI SEM2

Covariance Matrix

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
ITLPROF	1.00					
COMPLIAN	-0.39	1.00				
INVOLVE	-0.17	0.48	1.00			
RETENTIO	-0.43	0.69	0.39	1.00		
PAY	-0.18	0.28	0.01	0.33	1.00	
PROF	-0.25	0.61	0.25	0.50	0.37	1.00
INTERACT	-0.25	0.37	0.19	0.30	0.29	0.48
TASK	-0.28	0.32	0.21	0.32	0.34	0.49
ORG	-0.34	0.38	0.07	0.30	0.45	0.44
AUTO	-0.28	0.22	0.17	0.25	0.26	0.37
PERSONAL	0.58	-0.31	-0.16	-0.34	-0.27	-0.31
WORK	0.58	-0.41	-0.20	-0.41	-0.33	-0.40
CLIENT	0.40	-0.40	-0.25	-0.32	-0.21	-0.35
WFC	0.49	-0.26	-0.10	-0.29	-0.27	-0.27
EMPOP	0.27	-0.06	0.05	-0.17	-0.17	-0.12
AFFAIR	-0.23	0.28	0.12	0.25	0.32	0.29
FOUNDATI	-0.06	0.27	0.27	0.22	0.18	0.22
LEADER	-0.15	0.20	0.23	0.19	0.19	0.15
STAFF	-0.20	0.26	0.07	0.25	0.35	0.24
RELATION	-0.15	0.33	0.17	0.26	0.19	0.30

Covariance Matrix

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
INTERACT	1.00					
TASK	0.52	1.00				
ORG	0.53	0.53	1.00			
AUTO	0.54	0.52	0.55	1.00		
PERSONAL	-0.25	-0.30	-0.29	-0.29	1.00	
WORK	-0.30	-0.37	-0.37	-0.31	0.80	1.00
CLIENT	-0.27	-0.28	-0.29	-0.25	0.53	0.66
WFC	-0.22	-0.36	-0.34	-0.33	0.45	0.52
EMPOP	-0.05	-0.18	-0.14	-0.12	0.21	0.25
AFFAIR	0.36	0.29	0.52	0.31	-0.20	-0.28
FOUNDATI	0.31	0.22	0.31	0.19	-0.09	-0.17
LEADER	0.24	0.22	0.30	0.31	-0.09	-0.13
STAFF	0.26	0.38	0.32	0.16	-0.21	-0.25
RELATION	0.54	0.35	0.34	0.27	-0.21	-0.30

Covariance Matrix

	CLIENT	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER
CLIENT	1.00					
WFC	0.38	1.00				
EMPOP	0.22	0.38	1.00			
AFFAIR	-0.24	-0.19	-0.06	1.00		
FOUNDATI	-0.14	-0.11	0.02	0.46	1.00	
LEADER	-0.10	-0.09	-0.03	0.46	0.50	1.00
STAFF	-0.16	-0.18	-0.02	0.45	0.34	0.35
RELATION	-0.23	-0.15	0.03	0.36	0.43	0.31

Covariance Matrix

	STAFF	RELATION
STAFF	1.00	
RELATION	0.44	1.00

TI SEM2

Parameter Specifications

LAMBDA-Y

	ITLprof	ProfCom	JobSat	Burnout
ITLPROF	0	0	0	0
COMPLIAN	0	0	0	0
INVOLVE	0	1	0	0
RETENTIO	0	2	0	0
PAY	0	0	0	0
PROF	0	0	3	0
INTERACT	0	0	4	0
TASK	0	0	5	0
ORG	0	0	6	0
AUTO	0	0	7	0
PERSONAL	0	0	0	0
WORK	0	0	0	8
CLIENT	0	0	0	9

LAMBDA-X

	WFC	NPE	EmpOp
WFC	0	0	0
EMPOP	0	0	0
AFFAIR	0	10	0
FOUNDATI	0	11	0
LEADER	0	12	0
STAFF	0	13	0
RELATION	0	14	0

BETA

	ITLprof	ProfCom	JobSat	Burnout
ITLprof	0	15	16	17
ProfCom	0	0	18	19
JobSat	0	0	0	20
Burnout	0	0	0	0

GAMMA

	WFC	NPE	EmpOp
ITLprof	21	22	23
ProfCom	0	24	0
JobSat	25	26	0
Burnout	27	28	0

PHI

	WFC	NPE	EmpOp
--	-----	-----	-------

WFC	29					
NPE	30	0				
EmpOp	31	32	33			
PSI						
	ITLprof	ProfCom	JobSat	Burnout		
	34	35	36	37		
THETA-EPS						
	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
ITLPROF	0					
COMPLIAN	0	38				
INVOLVE	0	0	39			
RETENTIO	0	40	0	41		
PAY	42	0	43	0	44	
PROF	0	45	0	46	0	47
INTERACT	0	48	0	0	49	0
TASK	0	0	0	0	51	0
ORG	0	53	54	0	0	0
AUTO	0	0	0	0	56	0
PERSONAL	58	0	0	0	0	0
WORK	0	0	0	0	0	0
CLIENT	0	61	62	0	0	0
THETA-EPS						
	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
INTERACT	50					
TASK	0	52				
ORG	0	0	55			
AUTO	0	0	0	57		
PERSONAL	0	0	0	0	59	
WORK	0	0	0	0	0	60
CLIENT	0	0	0	0	0	0
THETA-EPS						
CLIENT						
CLIENT	63					
THETA-DELTA-EPS						
	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
WFC	0	0	0	0	0	0
EMPOP	0	0	0	64	0	0
AFFAIR	0	0	0	0	0	0
FOUNDATI	68	0	69	0	0	0
LEADER	0	0	71	0	0	0
STAFF	0	0	0	0	75	0
RELATION	79	0	0	0	0	0
THETA-DELTA-EPS						
	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK

	-----	-----	-----	-----	-----	-----
WFC	0	0	0	0	0	0
EMPOP	0	0	0	0	0	0
AFFAIR	0	0	65	0	66	0
FOUNDATI	0	0	0	0	0	0
LEADER	0	0	0	72	0	0
STAFF	0	76	0	77	0	0
RELATION	80	0	0	0	0	0

THETA-DELTA-EPS
CLIENT

WFC	0
EMPOP	0
AFFAIR	0
FOUNDATI	0
LEADER	0
STAFF	0
RELATION	0

THETA-DELTA

	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER	STAFF
-----	-----	-----	-----	-----	-----	-----
WFC	0					
EMPOP	0	0				
AFFAIR	0	0	67			
FOUNDATI	0	0	0	70		
LEADER	0	0	0	73	74	
STAFF	0	0	0	0	0	78
RELATION	0	0	81	0	82	0

THETA-DELTA
RELATION

RELATION	83

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

TI SEM2

Number of Iterations = 22

LISREL Estimates (Maximum Likelihood)

	LAMBDA-Y			
	ITLprof	ProfCom	JobSat	Burnout
-----	-----	-----	-----	-----
ITLPROF	1.00	- -	- -	- -
COMPLIAN	- -	0.87	- -	- -
INVOLVE	- -	0.48 (0.07) 6.60	- -	- -
RETENTIO	- -	0.83 (0.05) 15.45	- -	- -
PAY	- -	- -	0.59	- -
PROF	- -	- -	0.63	- -

			(0.07)	
			9.50	
INTERACT	- -	- -	0.71	- -
			(0.07)	
			9.89	
TASK	- -	- -	0.73	- -
			(0.07)	
			10.01	
ORG	- -	- -	0.76	- -
			(0.07)	
			10.52	
AUTO	- -	- -	0.72	- -
			(0.07)	
			9.67	
PERSONAL	- -	- -	- -	0.82
WORK	- -	- -	- -	0.97
				(0.04)
				21.91
CLIENT	- -	- -	- -	0.67
				(0.04)
				15.21
LAMBDA-X				
	WFC	NPE	EmpOp	
	-----	-----	-----	
WFC	1.00	- -	- -	
EMPOP	- -	- -	1.00	
AFFAIR	- -	0.77	- -	
		(0.05)		
		15.45		
FOUNDATI	- -	0.58	- -	
		(0.05)		
		11.61		
LEADER	- -	0.58	- -	
		(0.05)		
		10.87		
STAFF	- -	0.59	- -	
		(0.05)		
		12.30		
RELATION	- -	0.72	- -	
		(0.05)		
		13.65		
BETA				
	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	-0.25	0.01	0.37
		(0.06)	(0.06)	(0.05)
		-4.17	0.15	7.32
ProfCom	- -	- -	0.27	-0.24
			(0.07)	(0.05)
			3.87	-4.75
JobSat	- -	- -	- -	-0.23

				(0.05)
				-4.14
Burnout	- -	- -	- -	- -

GAMMA

	WFC	NPE	EmpOp
	-----	-----	-----
ITLprof	0.17 (0.05)	-0.02 (0.06)	0.08 (0.04)
ProfCom	3.74	-0.42 0.19 (0.06)	2.17
JobSat	-0.19 (0.05)	0.46 (0.06)	- -
Burnout	-3.98 0.47 (0.05)	7.39 -0.27 (0.05)	- -
	9.87	-5.67	

Covariance Matrix of ETA and KSI

	ITLprof	ProfCom	JobSat	Burnout	WFC	NPE
	-----	-----	-----	-----	-----	-----
ITLprof	1.00					
ProfCom	-0.48	1.00				
JobSat	-0.41	0.50	1.00			
Burnout	0.60	-0.45	-0.51	1.00		
WFC	0.48	-0.29	-0.43	0.53	1.00	
NPE	-0.32	0.44	0.59	-0.39	-0.25	1.00
EmpOp	0.24	-0.09	-0.13	0.18	0.37	-0.04

Covariance Matrix of ETA and KSI
EmpOp

EmpOp 0.99

PHI

	WFC	NPE	EmpOp
	-----	-----	-----
WFC	1.00 (0.07)		
	14.21		
NPE	-0.25 (0.05)	1.00	
	-4.70		
EmpOp	0.37 (0.05)	-0.04 (0.05)	0.99 (0.07)
	7.03	-0.83	14.24

PSI

Note: This matrix is diagonal.

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
	0.55 (0.04)	0.68 (0.13)	0.53 (0.10)	0.65 (0.07)

13.72 5.31 5.56 9.71

Squared Multiple Correlations for Structural Equations

ITLprof	ProfCom	JobSat	Burnout
0.45	0.32	0.47	0.35

Squared Multiple Correlations for Reduced Form

ITLprof	ProfCom	JobSat	Burnout
0.28	0.23	0.44	0.35

Reduced Form

	WFC	NPE	EmpOp
ITLprof	0.39 (0.05) 8.66	-0.22 (0.05) -4.35	0.08 (0.04) 2.17
ProfCom	-0.19 (0.03) -6.34	0.39 (0.05) 7.52	- -
JobSat	-0.30 (0.05) -6.31	0.52 (0.06) 8.14	- -
Burnout	0.47 (0.05) 9.87	-0.27 (0.05) -5.67	- -

THETA-EPS

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
ITLPROF	- -					
COMPLIAN	- -	0.21 (0.09) 2.24				
INVOLVE	- -	- -	0.77 (0.06) 12.63			
RETENTIO	- -	-0.06 (0.09) -0.66	- -	0.29 (0.09) 3.12		
PAY	0.11 (0.03) 3.44	- -	-0.16 (0.04) -4.31	- -	0.65 (0.05) 11.87	
PROF	- -	0.31 (0.03) 9.14	- -	0.20 (0.03) 5.75	- -	0.61 (0.05) 13.04
INTERACT	- -	0.06 (0.02) 2.52	- -	- -	-0.10 (0.03) -3.05	- -
TASK	- -	- -	- -	- -	-0.09 (0.04) -2.51	- -
ORG	- -	0.08	-0.14	- -	- -	- -

		(0.02)	(0.03)			
		3.85	-4.51			
AUTO	- -	- -	- -	- -	-0.15	- -
					(0.04)	
					-4.28	
PERSONAL	0.08	- -	- -	- -	- -	- -
	(0.02)					
	3.55					
WORK	- -	- -	- -	- -	- -	- -
CLIENT	- -	-0.07	-0.08	- -	- -	- -
		(0.02)	(0.03)			
		-3.06	-2.62			
THETA-EPS						
	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
	-----	-----	-----	-----	-----	-----
INTERACT	0.49					
	(0.04)					
	11.72					
TASK	- -	0.47				
		(0.04)				
		11.63				
ORG	- -	- -	0.43			
			(0.04)			
			11.49			
AUTO	- -	- -	- -	0.49		
				(0.04)		
				11.76		
PERSONAL	- -	- -	- -	- -	0.32	
					(0.03)	
					10.77	
WORK	- -	- -	- -	- -	- -	0.05
(0.03)						
CLIENT	- -	- -	- -	- -	- -	1.82
						- -

THETA-EPS
CLIENT

CLIENT 0.55
(0.04)
13.30

Squared Multiple Correlations for Y - Variables

ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
-----	-----	-----	-----	-----	-----
1.00	0.78	0.23	0.71	0.35	0.40

Squared Multiple Correlations for Y - Variables

INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
-----	-----	-----	-----	-----	-----
0.51	0.53	0.58	0.52	0.68	0.95

Squared Multiple Correlations for Y - Variables

CLIENT						

0.45						
THETA-DELTA-EPS						
	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF

WFC	- -	- -	- -	- -	- -	- -
EMPOP	- -	- -	- -	-0.09 (0.03) -2.70	- -	- -
AFFAIR	- -	- -	- -	- -	- -	- -
FOUNDATI	0.09 (0.03) 3.13	- -	0.15 (0.04) 4.16	- -	- -	- -
LEADER	- -	- -	0.14 (0.04) 3.87	- -	- -	- -
STAFF	- -	- -	- -	- -	0.11 (0.04) 3.15	- -
RELATION	0.08 (0.03) 2.55	- -	- -	- -	- -	- -
THETA-DELTA-EPS						
	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK

WFC	- -	- -	- -	- -	- -	- -
EMPOP	- -	- -	- -	- -	- -	- -
AFFAIR	- -	- -	0.13 (0.03) 4.49	- -	0.02 (0.02) 0.71	- -
FOUNDATI	- -	- -	- -	- -	- -	- -
LEADER	- -	- -	- -	0.12 (0.03) 3.66	- -	- -
STAFF	- -	0.12 (0.03) 3.69	- -	-0.08 (0.03) -2.63	- -	- -
RELATION	0.21 (0.03) 6.18	- -	- -	- -	- -	- -
THETA-DELTA-EPS						
CLIENT						

WFC	- -					
EMPOP	- -					
AFFAIR	- -					

FOUNDATI - -
 LEADER - -
 STAFF - -
 RELATION - -

THETA-DELTA						
	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER	STAFF
	-----	-----	-----	-----	-----	-----
WFC	- -					
EMPOP	- -	- -				
AFFAIR	- -	- -	0.39 (0.05) 7.44			
FOUNDATI	- -	- -	- -	0.67 (0.05) 12.75		
LEADER	- -	- -	- -	0.19 (0.04) 4.48	0.69 (0.06) 11.94	
STAFF	- -	- -	- -	- -	- -	0.64 (0.05) 12.62
RELATION	- -	- -	-0.21 (0.04) -5.44	- -	-0.09 (0.04) -2.38	- -

THETA-DELTA
 RELATION

 RELATION 0.47
 (0.06)
 8.18

Squared Multiple Correlations for X - Variables

	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER	STAFF
	-----	-----	-----	-----	-----	-----
	1.00	1.00	0.60	0.33	0.33	0.35

Squared Multiple Correlations for X - Variables

RELATION

 0.52

Goodness of Fit Statistics

Degrees of Freedom = 127

Minimum Fit Function Chi-Square = 153.43 (P = 0.055)

Normal Theory Weighted Least Squares Chi-Square = 152.67 (P = 0.060)

Estimated Non-centrality Parameter (NCP) = 25.67

90 Percent Confidence Interval for NCP = (0.0; 60.89)

Minimum Fit Function Value = 0.38

Population Discrepancy Function Value (F0) = 0.064

90 Percent Confidence Interval for F0 = (0.0; 0.15)

Root Mean Square Error of Approximation (RMSEA) = 0.022

90 Percent Confidence Interval for RMSEA = (0.0; 0.034)

P-Value for Test of Close Fit (RMSEA < 0.05) = 1.00

Expected Cross-Validation Index (ECVI) = 0.79

90 Percent Confidence Interval for ECVI = (0.73; 0.88)
 ECVI for Saturated Model = 1.04
 ECVI for Independence Model = 19.65
 Chi-Square for Independence Model with 190 Degrees of Freedom = 7897.47
 Independence AIC = 7937.47
 Model AIC = 318.67
 Saturated AIC = 420.00
 Independence CAIC = 8037.55
 Model CAIC = 733.99
 Saturated CAIC = 1470.82
 Normed Fit Index (NFI) = 0.98
 Non-Normed Fit Index (NNFI) = 0.99
 Parsimony Normed Fit Index (PNFI) = 0.66
 Comparative Fit Index (CFI) = 1.00
 Incremental Fit Index (IFI) = 1.00
 Relative Fit Index (RFI) = 0.97
 Critical N (CN) = 440.69
 Root Mean Square Residual (RMR) = 0.038
 Standardized RMR = 0.038
 Goodness of Fit Index (GFI) = 0.96
 Adjusted Goodness of Fit Index (AGFI) = 0.94
 Parsimony Goodness of Fit Index (PGFI) = 0.58

TI SEM2

Modification Indices and Expected Change

Modification Indices for LAMBDA-Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	- -	- -	- -	- -
COMPLIAN	1.64	- -	1.94	0.82
INVOLVE	1.77	- -	1.34	0.35
RETENTIO	3.98	- -	0.79	0.45
PAY	1.27	1.92	- -	0.28
PROF	0.03	3.31	- -	9.08
INTERACT	1.50	0.06	- -	6.20
TASK	0.08	0.02	- -	0.14
ORG	2.50	0.24	- -	0.00
AUTO	0.33	2.46	- -	0.62
PERSONAL	0.08	0.44	0.18	- -
WORK	0.00	0.03	0.29	- -
CLIENT	0.04	0.56	2.20	- -

Expected Change for LAMBDA-Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	- -	- -	- -	- -
COMPLIAN	0.07	- -	-0.09	0.05
INVOLVE	0.10	- -	0.10	-0.04
RETENTIO	-0.10	- -	0.05	-0.03
PAY	-0.10	0.07	- -	-0.03
PROF	0.01	0.16	- -	-0.15
INTERACT	0.05	-0.01	- -	0.11
TASK	0.01	0.01	- -	-0.02
ORG	-0.06	-0.02	- -	0.00
AUTO	0.02	-0.07	- -	0.04
PERSONAL	-0.03	0.02	0.02	- -

WORK	0.00	0.01	0.02	- -
CLIENT	0.01	-0.04	-0.07	- -

Standardized Expected Change for LAMBDA-Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	- -	- -	- -	- -
COMPLIAN	0.07	- -	-0.09	0.05
INVOLVE	0.10	- -	0.10	-0.04
RETENTIO	-0.10	- -	0.05	-0.03
PAY	-0.10	0.07	- -	-0.03
PROF	0.01	0.16	- -	-0.15
INTERACT	0.05	-0.01	- -	0.11
TASK	0.01	0.01	- -	-0.02
ORG	-0.06	-0.02	- -	0.00
AUTO	0.02	-0.07	- -	0.04
PERSONAL	-0.03	0.02	0.02	- -
WORK	0.00	0.01	0.02	- -
CLIENT	0.01	-0.04	-0.07	- -

Completely Standardized Expected Change for LAMBDA-Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	- -	- -	- -	- -
COMPLIAN	0.07	- -	-0.09	0.05
INVOLVE	0.10	- -	0.10	-0.04
RETENTIO	-0.10	- -	0.05	-0.03
PAY	-0.10	0.07	- -	-0.03
PROF	0.01	0.16	- -	-0.15
INTERACT	0.05	-0.01	- -	0.11
TASK	0.01	0.01	- -	-0.02
ORG	-0.06	-0.02	- -	0.00
AUTO	0.02	-0.07	- -	0.04
PERSONAL	-0.03	0.02	0.02	- -
WORK	0.00	0.01	0.02	- -
CLIENT	0.01	-0.04	-0.07	- -

Modification Indices for LAMBDA-X

	WFC	NPE	EmpOp
	-----	-----	-----
WFC	- -	- -	4.67
EMPOP	- -	- -	- -
AFFAIR	0.03	- -	0.65
FOUNDATI	0.01	- -	0.80
LEADER	1.50	- -	0.21
STAFF	0.57	- -	0.60
RELATION	0.00	- -	0.55

Expected Change for LAMBDA-X

	WFC	NPE	EmpOp
	-----	-----	-----
WFC	- -	- -	-0.19
EMPOP	- -	- -	- -
AFFAIR	-0.01	- -	-0.03
FOUNDATI	0.00	- -	0.03
LEADER	0.05	- -	-0.02

STAFF	-0.03	- -	0.03
RELATION	0.00	- -	0.03

Standardized Expected Change for LAMBDA-X

	WFC	NPE	EmpOp
	-----	-----	-----
WFC	- -	- -	-0.19
EMPOP	- -	- -	- -
AFFAIR	-0.01	- -	-0.03
FOUNDATI	0.00	- -	0.03
LEADER	0.05	- -	-0.02
STAFF	-0.03	- -	0.03
RELATION	0.00	- -	0.03

Completely Standardized Expected Change for LAMBDA-X

	WFC	NPE	EmpOp
	-----	-----	-----
WFC	- -	- -	-0.19
EMPOP	- -	- -	- -
AFFAIR	-0.01	- -	-0.03
FOUNDATI	0.00	- -	0.03
LEADER	0.05	- -	-0.02
STAFF	-0.03	- -	0.03
RELATION	0.00	- -	0.03

Modification Indices for BETA

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	- -	- -	- -
ProfCom	0.17	- -	- -	- -
JobSat	0.00	1.41	- -	- -
Burnout	0.06	1.41	- -	- -

Expected Change for BETA

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	- -	- -	- -
ProfCom	-0.09	- -	- -	- -
JobSat	-0.02	-0.23	- -	- -
Burnout	0.08	0.12	- -	- -

Standardized Expected Change for BETA

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	- -	- -	- -
ProfCom	-0.09	- -	- -	- -
JobSat	-0.02	-0.23	- -	- -
Burnout	0.08	0.12	- -	- -

Modification Indices for GAMMA

	WFC	NPE	EmpOp
	-----	-----	-----
ITLprof	- -	- -	- -
ProfCom	1.41	- -	1.43
JobSat	- -	- -	0.68
Burnout	- -	- -	4.04

Expected Change for GAMMA

	WFC	NPE	EmpOp
	-----	-----	-----
ITLprof	- -	- -	- -
ProfCom	-0.06	- -	0.05
JobSat	- -	- -	-0.03
Burnout	- -	- -	0.09

Standardized Expected Change for GAMMA

	WFC	NPE	EmpOp
	-----	-----	-----
ITLprof	- -	- -	- -
ProfCom	-0.06	- -	0.05
JobSat	- -	- -	-0.03
Burnout	- -	- -	0.09

No Non-Zero Modification Indices for PHI

Modification Indices for PSI

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	- -	- -	- -
ProfCom	- -	- -	- -	- -
JobSat	- -	1.41	- -	- -
Burnout	- -	1.41	- -	- -

Expected Change for PSI

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	- -	- -	- -
ProfCom	- -	- -	- -	- -
JobSat	- -	-0.16	- -	- -
Burnout	- -	0.08	- -	- -

Standardized Expected Change for PSI

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	- -	- -	- -
ProfCom	- -	- -	- -	- -
JobSat	- -	-0.16	- -	- -
Burnout	- -	0.08	- -	- -

Modification Indices for THETA-EPS

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
	-----	-----	-----	-----	-----	-----
ITLPROF	- -	- -	- -	- -	- -	- -
COMPLIAN	0.82	- -	- -	- -	- -	- -
INVOLVE	0.75	2.77	- -	- -	- -	- -
RETENTIO	1.82	- -	2.77	- -	- -	- -
PAY	- -	0.03	- -	2.62	- -	- -
PROF	2.68	- -	3.14	- -	0.56	- -
INTERACT	0.16	- -	0.98	0.34	- -	0.82
TASK	1.08	0.04	1.11	0.11	- -	1.51
ORG	3.75	- -	- -	2.15	0.08	0.16
AUTO	0.01	2.98	0.21	0.42	- -	4.10
PERSONAL	- -	0.90	0.17	0.39	0.07	0.00
WORK	0.08	0.23	0.35	1.00	0.21	3.06
CLIENT	0.08	- -	- -	0.05	1.07	2.52

Modification Indices for THETA-EPS

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
	-----	-----	-----	-----	-----	-----
INTERACT	- -					
TASK	0.50	- -				
ORG	1.11	0.86	- -			
AUTO	4.56	0.01	1.59	- -		
PERSONAL	0.48	0.33	1.64	2.12	- -	
WORK	4.64	0.44	0.23	2.24	1.59	- -
CLIENT	1.46	0.14	0.02	0.02	0.77	0.00

Modification Indices for THETA-EPS

CLIENT	-----
CLIENT	- -

Expected Change for THETA-EPS

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
	-----	-----	-----	-----	-----	-----
ITLPROF	- -					
COMPLIAN	0.03	- -				
INVOLVE	0.03	0.07	- -			
RETENTIO	-0.04	- -	-0.07	- -		
PAY	- -	0.00	- -	0.05	- -	
PROF	0.05	- -	0.07	- -	-0.03	- -
INTERACT	-0.01	- -	-0.03	0.02	- -	0.03
TASK	0.03	0.01	0.03	-0.01	- -	0.03
ORG	-0.05	- -	- -	-0.04	0.01	-0.01
AUTO	0.00	-0.04	0.02	0.02	- -	-0.06
PERSONAL	- -	0.02	-0.01	-0.01	-0.01	0.00
WORK	0.01	-0.01	-0.01	0.02	-0.01	-0.03
CLIENT	-0.01	- -	- -	-0.01	0.03	-0.05

Expected Change for THETA-EPS

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
	-----	-----	-----	-----	-----	-----
INTERACT	- -					
TASK	-0.02	- -				
ORG	-0.03	-0.03	- -			
AUTO	0.06	0.00	0.04	- -		
PERSONAL	-0.01	0.01	0.03	-0.03	- -	
WORK	0.04	-0.01	-0.01	0.03	0.06	- -
CLIENT	-0.03	0.01	0.00	0.00	-0.02	0.00

Expected Change for THETA-EPS

CLIENT	-----
CLIENT	- -

Completely Standardized Expected Change for THETA-EPS

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
	-----	-----	-----	-----	-----	-----
ITLPROF	- -					
COMPLIAN	0.03	- -				
INVOLVE	0.03	0.07	- -			

RETENTIO	-0.04	- -	-0.07	- -		
PAY	- -	0.00	- -	0.05	- -	
PROF	0.05	- -	0.07	- -	-0.03	- -
INTERACT	-0.01	- -	-0.03	0.02	- -	0.03
TASK	0.03	0.01	0.03	-0.01	- -	0.03
ORG	-0.05	- -	- -	-0.04	0.01	-0.01
AUTO	0.00	-0.04	0.01	0.02	- -	-0.06
PERSONAL	- -	0.02	-0.01	-0.01	-0.01	0.00
WORK	0.01	-0.01	-0.01	0.02	-0.01	-0.03
CLIENT	-0.01	- -	- -	-0.01	0.03	-0.05

Completely Standardized Expected Change for THETA-EPS

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
INTERACT	- -					
TASK	-0.02	- -				
ORG	-0.03	-0.03	- -			
AUTO	0.06	0.00	0.04	- -		
PERSONAL	-0.01	0.01	0.03	-0.03	- -	
WORK	0.04	-0.01	-0.01	0.03	0.06	- -
CLIENT	-0.03	0.01	0.00	0.00	-0.02	0.00

Completely Standardized Expected Change for THETA-EPS

CLIENT	- -
CLIENT	- -

Modification Indices for THETA-DELTA-EPS

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
WFC	- -	1.27	1.45	0.93	0.29	3.16
EMPOP	- -	1.12	1.12	- -	1.32	1.02
AFFAIR	0.16	0.29	0.27	0.23	1.51	0.40
FOUNDATI	- -	0.13	- -	0.30	0.35	0.23
LEADER	0.48	0.14	- -	0.01	0.00	1.62
STAFF	0.04	0.08	2.52	0.58	- -	0.32
RELATION	- -	1.20	0.16	2.11	3.68	0.11

Modification Indices for THETA-DELTA-EPS

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
WFC	2.44	1.36	0.01	2.43	0.78	2.46
EMPOP	0.80	2.32	0.03	0.33	0.17	0.92
AFFAIR	0.74	1.06	- -	0.01	- -	0.16
FOUNDATI	4.23	1.17	0.84	1.57	1.79	0.00
LEADER	0.43	0.00	1.02	- -	0.07	0.53
STAFF	0.30	- -	0.81	- -	1.57	0.19
RELATION	- -	2.95	0.00	2.12	1.89	5.67

Modification Indices for THETA-DELTA-EPS

CLIENT	- -
WFC	0.00
EMPOP	2.25
AFFAIR	1.87
FOUNDATI	0.07

LEADER	0.19
STAFF	0.54
RELATION	0.06

Expected Change for THETA-DELTA-EPS

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
WFC	- -	-0.03	0.04	-0.03	0.02	0.05
EMPOP	- -	0.03	0.04	- -	-0.04	-0.03
AFFAIR	0.01	-0.01	-0.02	-0.01	0.04	0.02
FOUNDATI	- -	0.01	- -	0.01	-0.02	-0.01
LEADER	-0.02	0.01	- -	0.00	0.00	-0.04
STAFF	0.01	0.01	-0.05	0.02	- -	-0.02
RELATION	- -	0.03	0.01	-0.04	-0.07	0.01

Expected Change for THETA-DELTA-EPS

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
WFC	0.04	-0.03	0.00	-0.04	0.02	-0.04
EMPOP	0.03	-0.05	0.01	0.02	-0.01	0.02
AFFAIR	0.02	-0.03	- -	0.00	- -	0.01
FOUNDATI	0.06	-0.03	0.03	-0.04	0.03	0.00
LEADER	-0.02	0.00	0.03	- -	0.01	0.01
STAFF	-0.02	- -	0.03	- -	-0.03	0.01
RELATION	- -	0.05	0.00	-0.04	0.03	-0.05

Expected Change for THETA-DELTA-EPS

	CLIENT
WFC	0.00
EMPOP	0.05
AFFAIR	-0.04
FOUNDATI	-0.01
LEADER	0.01
STAFF	0.02
RELATION	0.01

Completely Standardized Expected Change for THETA-DELTA-EPS

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
WFC	- -	-0.03	0.04	-0.03	0.02	0.05
EMPOP	- -	0.03	0.04	- -	-0.04	-0.03
AFFAIR	0.01	-0.01	-0.02	-0.01	0.04	0.02
FOUNDATI	- -	0.01	- -	0.02	-0.02	-0.01
LEADER	-0.02	0.01	- -	0.00	0.00	-0.04
STAFF	0.01	0.01	-0.05	0.02	- -	-0.02
RELATION	- -	0.03	0.01	-0.04	-0.07	0.01

Completely Standardized Expected Change for THETA-DELTA-EPS

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
WFC	0.04	-0.03	0.00	-0.04	0.02	-0.04
EMPOP	0.03	-0.05	0.01	0.02	-0.01	0.02
AFFAIR	0.03	-0.03	- -	0.00	- -	0.01
FOUNDATI	0.06	-0.03	0.02	-0.04	0.03	0.00
LEADER	-0.02	0.00	0.03	- -	0.01	0.01

STAFF	-0.02	- -	0.03	- -	-0.03	0.01
RELATION	- -	0.05	0.00	-0.04	0.03	-0.05

Completely Standardized Expected Change for THETA-DELTA-EPS

CLIENT

WFC	0.00
EMPOP	0.05
AFFAIR	-0.04
FOUNDATI	-0.01
LEADER	0.01
STAFF	0.02
RELATION	0.01

Modification Indices for THETA-DELTA

	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER	STAFF
WFC	4.67					
EMPOP	4.67	- -				
AFFAIR	0.12	0.71	- -			
FOUNDATI	0.44	0.85	0.07	- -		
LEADER	0.49	0.80	0.27	- -	- -	
STAFF	0.84	1.23	1.09	0.01	0.47	- -
RELATION	0.26	0.63	- -	0.20	- -	0.05

Modification Indices for THETA-DELTA

RELATION

RELATION	- -
----------	-----

Expected Change for THETA-DELTA

	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER	STAFF
WFC	0.42					
EMPOP	-0.16	- -				
AFFAIR	0.01	-0.03	- -			
FOUNDATI	-0.02	0.03	0.01	- -		
LEADER	0.02	-0.03	0.02	- -	- -	
STAFF	-0.03	0.04	-0.05	0.00	0.02	- -
RELATION	0.02	0.03	- -	-0.02	- -	-0.01

Expected Change for THETA-DELTA

RELATION

RELATION	- -
----------	-----

Completely Standardized Expected Change for THETA-DELTA

	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER	STAFF
WFC	0.42					
EMPOP	-0.16	- -				
AFFAIR	0.01	-0.03	- -			
FOUNDATI	-0.02	0.03	0.01	- -		
LEADER	0.02	-0.03	0.02	- -	- -	
STAFF	-0.03	0.04	-0.05	0.00	0.02	- -

RELATION 0.02 0.03 - - -0.02 - - -0.01

Completely Standardized Expected Change for THETA-DELTA

RELATION

RELATION - -

Maximum Modification Index is 9.08 for Element (6, 4) of LAMBDA-Y

TI SEM2

Factor Scores Regressions

ETA

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
	-----	-----	-----	-----	-----	-----
ITLprof	1.11	0.01	0.00	0.03	-0.17	0.02
ProfCom	-0.02	0.80	0.01	0.43	0.11	-0.49
JobSat	-0.08	-0.16	0.13	0.02	0.24	0.17
Burnout	0.02	0.00	0.00	-0.01	-0.01	0.00

ETA

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
	-----	-----	-----	-----	-----	-----
ITLprof	0.06	0.00	0.04	-0.01	-0.27	0.14
ProfCom	0.01	0.12	-0.06	0.12	0.00	-0.06
JobSat	0.20	0.19	0.23	0.22	0.02	-0.04
Burnout	0.00	0.00	0.00	0.00	0.10	0.82

ETA

	CLIENT	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER
	-----	-----	-----	-----	-----	-----
ITLprof	0.01	-0.02	0.00	0.03	-0.13	0.06
ProfCom	0.10	-0.04	0.05	0.04	0.01	-0.02
JobSat	0.00	-0.02	0.01	0.02	0.03	-0.03
Burnout	0.05	0.03	0.00	-0.01	0.00	0.00

ETA

	STAFF	RELATION
	-----	-----
ITLprof	0.08	-0.12
ProfCom	-0.02	0.02
JobSat	-0.01	0.00
Burnout	0.00	0.00

KSI

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
	-----	-----	-----	-----	-----	-----
WFC	0.00	0.00	0.00	0.00	0.00	0.00
NPE	-0.10	0.04	-0.04	0.00	0.04	0.03
EmpOp	0.02	-0.10	-0.03	0.19	-0.01	-0.01

KSI

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
	-----	-----	-----	-----	-----	-----
WFC	0.00	0.00	0.00	0.00	0.00	0.00
NPE	-0.12	0.06	-0.08	0.07	0.00	0.00
EmpOp	0.01	-0.01	0.01	-0.01	0.00	0.02

KSI						
	CLIENT	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER
	-----	-----	-----	-----	-----	-----
WFC	0.00	1.00	0.00	0.00	- -	0.00
NPE	0.00	0.01	0.01	0.48	0.08	0.12
EmpOp	-0.02	-0.01	1.02	-0.01	0.00	0.00

KSI		
	STAFF	RELATION
	-----	-----
WFC	0.00	0.00
NPE	0.09	0.46
EmpOp	0.00	-0.01

TI SEM2
Standardized Solution

LAMBDA-Y				
	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	1.00	- -	- -	- -
COMPLIAN	- -	0.87	- -	- -
INVOLVE	- -	0.48	- -	- -
RETENTIO	- -	0.83	- -	- -
PAY	- -	- -	0.59	- -
PROF	- -	- -	0.63	- -
INTERACT	- -	- -	0.71	- -
TASK	- -	- -	0.73	- -
ORG	- -	- -	0.76	- -
AUTO	- -	- -	0.72	- -
PERSONAL	- -	- -	- -	0.82
WORK	- -	- -	- -	0.97
CLIENT	- -	- -	- -	0.67

LAMBDA-X			
	WFC	NPE	EmpOp
	-----	-----	-----
WFC	1.00	- -	- -
EMPOP	- -	- -	1.00
AFFAIR	- -	0.77	- -
FOUNDATI	- -	0.58	- -
LEADER	- -	0.58	- -
STAFF	- -	0.59	- -
RELATION	- -	0.72	- -

BETA				
	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	-0.25	0.01	0.37
ProfCom	- -	- -	0.27	-0.24
JobSat	- -	- -	- -	-0.23
Burnout	- -	- -	- -	- -

GAMMA

	WFC	NPE	EmpOp
ITLprof	0.17	-0.02	0.08
ProfCom	-	0.19	-
JobSat	-0.19	0.46	-
Burnout	0.47	-0.27	-

Correlation Matrix of ETA and KSI

	ITLprof	ProfCom	JobSat	Burnout	WFC	NPE
ITLprof	1.00					
ProfCom	-0.48	1.00				
JobSat	-0.40	0.50	1.00			
Burnout	0.60	-0.45	-0.51	1.00		
WFC	0.48	-0.29	-0.43	0.53	1.00	
NPE	-0.32	0.44	0.59	-0.39	-0.25	1.00
EmpOp	0.24	-0.09	-0.13	0.19	0.37	-0.04

Correlation Matrix of ETA and KSI

	EmpOp
EmpOp	1.00

PSI

Note: This matrix is diagonal.

	ITLprof	ProfCom	JobSat	Burnout
	0.55	0.68	0.53	0.65

Regression Matrix ETA on KSI (Standardized)

	WFC	NPE	EmpOp
ITLprof	0.39	-0.22	0.08
ProfCom	-0.19	0.39	-
JobSat	-0.30	0.52	-
Burnout	0.47	-0.27	-

TI SEM2

Completely Standardized Solution

LAMBDA-Y

	ITLprof	ProfCom	JobSat	Burnout
ITLPROF	1.00	-	-	-
COMPLIAN	-	0.88	-	-
INVOLVE	-	0.48	-	-
RETENTIO	-	0.84	-	-
PAY	-	-	0.59	-
PROF	-	-	0.63	-
INTERACT	-	-	0.71	-
TASK	-	-	0.73	-
ORG	-	-	0.76	-
AUTO	-	-	0.72	-
PERSONAL	-	-	-	0.82
WORK	-	-	-	0.97

CLIENT - - - - - - 0.67

LAMBDA-X

	WFC	NPE	EmpOp
-----	-----	-----	-----
WFC	1.00	- -	- -
EMPOP	- -	- -	1.00
AFFAIR	- -	0.78	- -
FOUNDATI	- -	0.57	- -
LEADER	- -	0.57	- -
STAFF	- -	0.60	- -
RELATION	- -	0.72	- -

BETA

	ITLprof	ProfCom	JobSat	Burnout
-----	-----	-----	-----	-----
ITLprof	- -	-0.25	0.01	0.37
ProfCom	- -	- -	0.27	-0.24
JobSat	- -	- -	- -	-0.23
Burnout	- -	- -	- -	- -

GAMMA

	WFC	NPE	EmpOp
-----	-----	-----	-----
ITLprof	0.17	-0.02	0.08
ProfCom	- -	0.19	- -
JobSat	-0.19	0.46	- -
Burnout	0.47	-0.27	- -

Correlation Matrix of ETA and KSI

	ITLprof	ProfCom	JobSat	Burnout	WFC	NPE
-----	-----	-----	-----	-----	-----	-----
ITLprof	1.00					
ProfCom	-0.48	1.00				
JobSat	-0.40	0.50	1.00			
Burnout	0.60	-0.45	-0.51	1.00		
WFC	0.48	-0.29	-0.43	0.53	1.00	
NPE	-0.32	0.44	0.59	-0.39	-0.25	1.00
EmpOp	0.24	-0.09	-0.13	0.19	0.37	-0.04

Correlation Matrix of ETA and KSI

	EmpOp
-----	-----
EmpOp	1.00

PSI

Note: This matrix is diagonal.

	ITLprof	ProfCom	JobSat	Burnout
-----	-----	-----	-----	-----
	0.55	0.68	0.53	0.65

THETA-EPS

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
-----	-----	-----	-----	-----	-----	-----
ITLPROF	- -					
COMPLIAN	- -	0.22				

INVOLVE	--	--	0.77			
RETENTIO	--	-0.06	--	0.29		
PAY	0.11	--	-0.16	--	0.65	
PROF	--	0.32	--	0.20	--	0.60
INTERACT	--	0.06	--	--	-0.10	--
TASK	--	--	--	--	-0.09	--
ORG	--	0.09	-0.14	--	--	--
AUTO	--	--	--	--	-0.15	--
PERSONAL	0.08	--	--	--	--	--
WORK	--	--	--	--	--	--
CLIENT	--	-0.07	-0.08	--	--	--

THETA-EPS

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
	-----	-----	-----	-----	-----	-----
INTERACT	0.49					
TASK	--	0.47				
ORG	--	--	0.42			
AUTO	--	--	--	0.48		
PERSONAL	--	--	--	--	0.32	
WORK	--	--	--	--	--	0.05
CLIENT	--	--	--	--	--	--

THETA-EPS

CLIENT	-----
CLIENT	0.55

THETA-DELTA-EPS

	ITLPROF	COMPLIAN	INVOLVE	RETENTIO	PAY	PROF
	-----	-----	-----	-----	-----	-----
WFC	--	--	--	--	--	--
EMPOP	--	--	--	-0.09	--	--
AFFAIR	--	--	--	--	--	--
FOUNDATI	0.09	--	0.15	--	--	--
LEADER	--	--	0.14	--	--	--
STAFF	--	--	--	--	0.11	--
RELATION	0.08	--	--	--	--	--

THETA-DELTA-EPS

	INTERACT	TASK	ORG	AUTO	PERSONAL	WORK
	-----	-----	-----	-----	-----	-----
WFC	--	--	--	--	--	--
EMPOP	--	--	--	--	--	--
AFFAIR	--	--	0.13	--	0.02	--
FOUNDATI	--	--	--	--	--	--
LEADER	--	--	--	0.11	--	--
STAFF	--	0.12	--	-0.08	--	--
RELATION	0.21	--	--	--	--	--

THETA-DELTA-EPS

CLIENT	-----
WFC	--
EMPOP	--
AFFAIR	--

FOUNDATI	-	-				
LEADER	-	-				
STAFF	-	-				
RELATION	-	-				
THETA-DELTA						
	WFC	EMPOP	AFFAIR	FOUNDATI	LEADER	STAFF
	-----	-----	-----	-----	-----	-----
WFC	-	-				
EMPOP	-	-				
AFFAIR	-	-	0.40			
FOUNDATI	-	-	-	0.67		
LEADER	-	-	-	0.18	0.67	
STAFF	-	-	-	-	-	0.65
RELATION	-	-	-0.21	-	-0.09	-

THETA-DELTA	
RELATION	

RELATION	0.48

Regression Matrix ETA on KSI (Standardized)

	WFC	NPE	EmpOp
	-----	-----	-----
ITLprof	0.39	-0.22	0.08
ProfCom	-0.19	0.39	-
JobSat	-0.30	0.52	-
Burnout	0.47	-0.27	-

TI SEM2

Total and Indirect Effects

Total Effects of KSI on ETA

	WFC	NPE	EmpOp
	-----	-----	-----
ITLprof	0.39	-0.22	0.08
	(0.05)	(0.05)	(0.04)
	8.66	-4.35	2.17
ProfCom	-0.19	0.39	-
	(0.03)	(0.05)	-
	-6.34	7.52	
JobSat	-0.30	0.52	-
	(0.05)	(0.06)	-
	-6.31	8.14	
Burnout	0.47	-0.27	-
	(0.05)	(0.05)	-
	9.87	-5.67	

Indirect Effects of KSI on ETA

	WFC	NPE	EmpOp
	-----	-----	-----
ITLprof	0.22	-0.20	-
	(0.03)	(0.04)	-
	6.61	-4.89	
ProfCom	-0.19	0.20	-
	(0.03)	(0.04)	-
	-6.34	5.62	

JobSat	-0.11	0.06	- -
	(0.03)	(0.02)	
	-3.86	3.40	
Burnout	- -	- -	- -

Total Effects of ETA on ETA

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	-0.25	-0.06	0.45
		(0.06)	(0.06)	(0.05)
		-4.17	-0.96	9.06
ProfCom	- -	- -	0.27	-0.30
			(0.07)	(0.05)
			3.87	-5.95
JobSat	- -	- -	- -	-0.23
				(0.05)
				-4.14
Burnout	- -	- -	- -	- -

Largest Eigenvalue of B*B' (Stability Index) is 0.300

Indirect Effects of ETA on ETA

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	- -	-0.07	0.07
			(0.02)	(0.02)
			-2.84	3.14
ProfCom	- -	- -	- -	-0.06
				(0.02)
				-2.97
JobSat	- -	- -	- -	- -
Burnout	- -	- -	- -	- -

Total Effects of ETA on Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	1.00	-0.25	-0.06	0.45
		(0.06)	(0.06)	(0.05)
		-4.17	-0.96	9.06
COMPLIAN	- -	0.87	0.23	-0.26
			(0.06)	(0.04)
			3.87	-5.95
INVOLVE	- -	0.48	0.13	-0.15
		(0.07)	(0.04)	(0.03)
		6.60	3.43	-4.54
RETENTIO	- -	0.83	0.22	-0.25
		(0.05)	(0.06)	(0.04)
		15.45	3.89	-5.86
PAY	- -	- -	0.59	-0.13
				(0.03)
				-4.14
PROF	- -	- -	0.63	-0.14
			(0.07)	(0.03)
			9.50	-4.18
INTERACT	- -	- -	0.71	-0.16
			(0.07)	(0.04)
			9.89	-4.28

TASK	- -	- -	0.73 (0.07) 10.01	-0.17 (0.04) -4.27
ORG	- -	- -	0.76 (0.07) 10.52	-0.17 (0.04) -4.29
AUTO	- -	- -	0.72 (0.07) 9.67	-0.16 (0.04) -4.25
PERSONAL	- -	- -	- -	0.82
WORK	- -	- -	- -	0.97 (0.04) 21.91
CLIENT	- -	- -	- -	0.67 (0.04) 15.21

Indirect Effects of ETA on Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	- -	-0.25 (0.06)	-0.06 (0.06)	0.45 (0.05)
COMPLIAN	- -	-4.17	-0.96	9.06
INVOLVE	- -	- -	0.23 (0.06)	-0.26 (0.04)
RETENTIO	- -	- -	3.87 0.13 (0.04)	-5.95 -0.15 (0.03)
PAY	- -	- -	3.43 0.22 (0.06)	-4.54 -0.25 (0.04)
PROF	- -	- -	3.89	-5.86
INTERACT	- -	- -	- -	-0.13 (0.03) -4.14
TASK	- -	- -	- -	-0.14 (0.03) -4.18
ORG	- -	- -	- -	-0.16 (0.04) -4.28
AUTO	- -	- -	- -	-0.17 (0.04) -4.27
PERSONAL	- -	- -	- -	-0.17 (0.04) -4.29
WORK	- -	- -	- -	-0.16 (0.04) -4.25
CLIENT	- -	- -	- -	- -

Total Effects of KSI on Y			
	WFC	NPE	EmpOp
	-----	-----	-----
ITLPROF	0.39 (0.05)	-0.22 (0.05)	0.08 (0.04)
	8.66	-4.35	2.17
COMPLIAN	-0.17 (0.03)	0.34 (0.05)	- -
	-6.34	7.52	
INVOLVE	-0.09 (0.02)	0.19 (0.04)	- -
	-4.78	5.08	
RETENTIO	-0.16 (0.03)	0.33 (0.04)	- -
	-6.28	7.33	
PAY	-0.18 (0.03)	0.31 (0.04)	- -
	-6.31	8.14	
PROF	-0.19 (0.03)	0.33 (0.04)	- -
	-6.50	8.76	
INTERACT	-0.21 (0.03)	0.37 (0.04)	- -
	-6.81	9.05	
TASK	-0.22 (0.03)	0.38 (0.04)	- -
	-6.77	9.28	
ORG	-0.23 (0.03)	0.40 (0.04)	- -
	-6.87	9.34	
AUTO	-0.22 (0.03)	0.38 (0.04)	- -
	-6.72	9.37	
PERSONAL	0.38 (0.04)	-0.22 (0.04)	- -
	9.87	-5.67	
WORK	0.45 (0.04)	-0.27 (0.05)	- -
	10.78	-5.82	
CLIENT	0.31 (0.03)	-0.18 (0.03)	- -
	9.13	-5.51	

TI SEM2

Standardized Total and Indirect Effects

Standardized Total Effects of KSI on ETA			
	WFC	NPE	EmpOp
	-----	-----	-----
ITLprof	0.39	-0.22	0.08
ProfCom	-0.19	0.39	- -
JobSat	-0.30	0.52	- -
Burnout	0.47	-0.27	- -

Standardized Indirect Effects of KSI on ETA

	WFC	NPE	EmpOp
	-----	-----	-----
ITLprof	0.22	-0.19	- -
ProfCom	-0.19	0.20	- -
JobSat	-0.11	0.06	- -
Burnout	- -	- -	- -

Standardized Total Effects of ETA on ETA

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	-0.25	-0.06	0.44
ProfCom	- -	- -	0.27	-0.30
JobSat	- -	- -	- -	-0.23
Burnout	- -	- -	- -	- -

Standardized Indirect Effects of ETA on ETA

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLprof	- -	- -	-0.07	0.07
ProfCom	- -	- -	- -	-0.06
JobSat	- -	- -	- -	- -
Burnout	- -	- -	- -	- -

Standardized Total Effects of ETA on Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	1.00	-0.25	-0.06	0.45
COMPLIAN	- -	0.87	0.23	-0.26
INVOLVE	- -	0.48	0.13	-0.15
RETENTIO	- -	0.83	0.22	-0.25
PAY	- -	- -	0.59	-0.13
PROF	- -	- -	0.63	-0.14
INTERACT	- -	- -	0.71	-0.16
TASK	- -	- -	0.73	-0.17
ORG	- -	- -	0.76	-0.17
AUTO	- -	- -	0.72	-0.16
PERSONAL	- -	- -	- -	0.82
WORK	- -	- -	- -	0.97
CLIENT	- -	- -	- -	0.67

Completely Standardized Total Effects of ETA on Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	1.00	-0.25	-0.06	0.44
COMPLIAN	- -	0.88	0.23	-0.27
INVOLVE	- -	0.48	0.13	-0.15
RETENTIO	- -	0.84	0.22	-0.25
PAY	- -	- -	0.59	-0.13
PROF	- -	- -	0.63	-0.14
INTERACT	- -	- -	0.71	-0.16
TASK	- -	- -	0.73	-0.17
ORG	- -	- -	0.76	-0.17
AUTO	- -	- -	0.72	-0.16
PERSONAL	- -	- -	- -	0.82
WORK	- -	- -	- -	0.97

CLIENT - - - - - - 0.67

Standardized Indirect Effects of ETA on Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	- -	-0.25	-0.06	0.45
COMPLIAN	- -	- -	0.23	-0.26
INVOLVE	- -	- -	0.13	-0.15
RETENTIO	- -	- -	0.22	-0.25
PAY	- -	- -	- -	-0.13
PROF	- -	- -	- -	-0.14
INTERACT	- -	- -	- -	-0.16
TASK	- -	- -	- -	-0.17
ORG	- -	- -	- -	-0.17
AUTO	- -	- -	- -	-0.16
PERSONAL	- -	- -	- -	- -
WORK	- -	- -	- -	- -
CLIENT	- -	- -	- -	- -

Completely Standardized Indirect Effects of ETA on Y

	ITLprof	ProfCom	JobSat	Burnout
	-----	-----	-----	-----
ITLPROF	- -	-0.25	-0.06	0.44
COMPLIAN	- -	- -	0.23	-0.27
INVOLVE	- -	- -	0.13	-0.15
RETENTIO	- -	- -	0.22	-0.25
PAY	- -	- -	- -	-0.13
PROF	- -	- -	- -	-0.14
INTERACT	- -	- -	- -	-0.16
TASK	- -	- -	- -	-0.17
ORG	- -	- -	- -	-0.17
AUTO	- -	- -	- -	-0.16
PERSONAL	- -	- -	- -	- -
WORK	- -	- -	- -	- -
CLIENT	- -	- -	- -	- -

Standardized Total Effects of KSI on Y

	WFC	NPE	EmpOp
	-----	-----	-----
ITLPROF	0.39	-0.22	0.08
COMPLIAN	-0.17	0.34	- -
INVOLVE	-0.09	0.19	- -
RETENTIO	-0.16	0.33	- -
PAY	-0.18	0.31	- -
PROF	-0.19	0.33	- -
INTERACT	-0.21	0.37	- -
TASK	-0.22	0.38	- -
ORG	-0.23	0.40	- -
AUTO	-0.22	0.38	- -
PERSONAL	0.38	-0.22	- -
WORK	0.45	-0.27	- -
CLIENT	0.31	-0.18	- -

Completely Standardized Total Effects of KSI on Y

	WFC	NPE	EmpOp
	-----	-----	-----
ITLPROF	0.39	-0.22	0.08
COMPLIAN	-0.17	0.34	- -
INVOLVE	-0.09	0.19	- -
RETENTIO	-0.16	0.33	- -
PAY	-0.18	0.31	- -
PROF	-0.19	0.33	- -
INTERACT	-0.21	0.37	- -
TASK	-0.22	0.38	- -
ORG	-0.23	0.39	- -
AUTO	-0.22	0.37	- -
PERSONAL	0.38	-0.22	- -
WORK	0.45	-0.27	- -
CLIENT	0.31	-0.18	- -

Time used: 0.062 Seconds



VITA

Patra Phuekphan was born in 1970. She received a Bachelor of Nursing Science from Assumption University, Bangkok, Thailand, in 1992. She got a Master of Nursing Science (Nursing Administration), Chulalongkorn University, Bangkok, Thailand in 2002. Patra had 4 year of clinical experience in Medical-Surgical Unit (1992-1996); 9 year of experienced in administrative position: Head Nurse of OPD and Emergency Room, and Supervisor (1997-2005); and working as full-time lecturer at Bernadette de Lourdes School of Nursing Science, Assumption University, Bangkok, Thailand from 2005 to present. She attend study Philosophy Program in Nursing Science, Faculty of Nursing, Chulalongkorn University since 2010-2014.

