THE EFFECTS OF COGNITIVE AND NON-COGNITIVE SKILLS ON EARNINGS: THE CASE OF MUEANG DISTRICT, KHONKAEN PROVINCE OF THAILAND

Jongrak Hong-ngam

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ABSTRACT

Title of Dissertation	The Effects of Cognitive and Non-Cognitive Skills on Earnings: The Case of the Mueang District, Khonkaen Province of Thailand
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An employment study by Mincer illustrated that earning differentials are directly correlated with the cognitive skills; number of years of schooling, and the number of training sessions they have successfully completed (Mincer, 1958: 281-302). Later, some studies recognized that both cognitive and non-cognitive skills are strong forecasters determining schooling attainment and wages. Non-cognitive skills affect level of earnings as a latent influence to cognitive abilities (Heckman, Stixrud and Urzua, 2006: 1-34; Weel, 2008: 729-737). Therefore, importance of non-cognitive skills is to determine productivity in economic framework (wage equals to marginal product under perfect competition market assumption). How can we identify and measure non-cognitive skills? Weel addressed that it has been rather unclear what non-cognitive skills are and how these skills can be measured. (Weel, 2008: 729).

This study investigates three objectives. First, how is the significance of cognitive and non-cognitive skills as an explanation of earnings? Second, what are differences in wages across occupations to be explained by non-cognitive traits? Third what are significant traits between males and females cross occupations. Non-cognitive variables employed in this study are the locus of control, self-esteem, the big five personalities (openness, agreeableness, extraversion, conscientiousness, neuroticism), and conflict management (withdrawn, forcing, smoothing, compromising, confronting). These traits are found to have different effects for various occupations and gender.

Regarding significance of non-cognitive skills (NCs) as an explanation of earnings, after adding a non-cognitive skill called "Locus of Control (LOC)" into the earnings model. Comparing this model with and without non-cognitive skills, the coefficients decline when non-cognitive skills are added in the earning model. Moreover, to reduce the biases occurring from violating the ordinary least squares (OLS) assumptions, the two-stage least squares (2SLS) model is taken into account. Similarly to Mohanty (2009: 889), OLS and 2SLS are compared and found that all significant coefficients declined in explanatory power after changing from an OLS to a 2SLS. However, the result of this study differs from Mohanty (2009: 889), due to the explanatory power of the coefficients that decreases for some variables, but increases for others. The explanatory power of all cognitive skills (except time period of living in Khonkaen province) declines when non-cognitive variables are added in the model. The explanatory power of cognitive skills (years of schooling) reduced by almost 3.34 percent, years of working experience by 1.56 percent, and training hour by 11.53 percent.

NCs play different roles in different occupational categories. The maximum effects of the cognitive skills (Cogs) and non-cognitive skills that affect earnings in the **Legislators, Senior Officials and Managers** are years of schooling and "*poor leadership*" leads to inefficiency in earnings. **Professionals** have higher earnings, if he or she had higher working experiences. Furthermore, "*conscientiousness*" has a significant effect at the highest level among other personalities on future earnings. For **Technicians and Associate Professionals**, these careers need cognitive skills (years of schooling) while the maximum effects from non-cognitive skill is "*confronting*". For **Clerk,** a career which administrates at the back office, non-cognitive skills in the sense of too much compromising is ineffective and positive effect from cognitive skills is English proficiency. For the **Shop Attendants**, LOC plays a less important role than cognitive skills on earnings. Considering other collar, i.e., blue collar workers, **Craft and Related Trades Workers** need cognitive skills and English proficiency, rather than non-cognitive skills. An interesting finding is that the compromising trait affects earnings negatively for this occupation. An implication from this result is that this career seems to use a special skill. For instance, handy craft

workers in the factory will need creativity for their work. Therefore, compromising might not be a beneficial behavior for this job. For **Plant, machine operators and assemblers**, a cognitive skill like years of schooling has little explanatory power on earnings, as well as a non-cognitive skill like compromising. The background of NCs is parental upbringing. This study confirms that parents' marital status during childhood remarkably affects a worker's success. If workers were deprived of both father and mother by the age of fourteen, this makes them so industrious that they earn more income than those under parental care. Divorced workers earn more income than single workers because of the burden of taking care of their children. When types of organizations are considered, public organization workers earn less than state enterprise and private organization workers. The result regarding difference between males and females due to discrimination is that among workers with similar educational levels in elementary and high schools, males have higher chance to earn more income than females. On the other hand, there is no such discrimination in workers with undergraduate degree. Furthermore, it is found that on the job training does not have any effect on workers' earnings regardless of gender. However, this may be due to the inefficiency of on the job training which has to be explored further.

Regarding income differences across organizations, it is found that in state enterprise, males have 33.9% higher income than females while in public and private organizations males earn 19.7% and 43.07% less than females, respectively.

Gender wage difference is another consideration in this study. Using the decomposition technique, the model is analyzed with and without non-cognitive skills. In this study, craft and related trade workers possess differences in some non-cognitive skills between men and women. Openness is the only trait that males outperform females, while conscientiousness, agreeableness, being withdrawn, smoothing, confronting, and compromising are more evident in females. Differences in the non-cognitive skills lead to differences in wages. As a result, a decline in the unexplained portion of the residual occurs when non-cognitive skills are included in male-female earning function. Finally, non-cognitive skills are explanatory factors predicting future earnings and are the reasons for gender discrimination.

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ABBREVIATIONS

Abbreviation	
NC	Non-Cognitive Skills
OCC	Occupation
ISCO	International Standard Classification of Occupations
OCSC	Office of the Civil Service Commission

CHAPTER 1

INTRODUCTION

1.1 Introduction

It is well established that national economy is largely depended on national income and normally the income comes from different sources such as foreign trades, tourist industry and many other transactions even the income derives from the employment of the government and private firms or companies. This source of income is recognized as one of many important indicators being used to indicate how national economy is moving on, i.e. fast or slow. The national income has its important impact on job opportunities and income of worker. For the private firms in Thailand, they normally hire their employees with their own standard, i.e. they offer the various positions in their own organization with specific specification and chose employees fitted most to the positions in order that the company moves on with a relatively high progress and benefit.

In choosing employees, most companies provide criteria based on different backgrounds such as educational attainment, major field of specialization, numbers of years of work experience and some other needed personal data. This aims to select the most efficient person for their specific post. Level of education is the information that employers screen their employees. All specification requires by the employers had been described in the Mincer equation (Mincer, 1958:281-302). Nevertheless, when considering some other careers such as flight attendant on the plane, salesman and some other professions dealing with personal contact. Of such professions, some extra features may be required such as the employees must possess outstanding personality, friendliness and readiness in offering services. Thus other extra features are required in addition to academic standing alone. At present, in many cases, economists have paid their interest on some other extra features along with the ordinary requirements

(educational attainment, average grade and work experiences) such as personal traits and behavioral conducts. In this study, it involves with the search for some answer on the various information such as educational background (being measured by attained level of education), language competency, health condition, and work experiences attained. These are categorized into **Cognitive skills**. Other additional factors to be described include personality traits and behavioral conducts where it categorizes into **Non-cognitive skills (NC)**. This aims to find out how these cognitive and non-cognitive skills affected income and how income is affected by variations of both cognitive and non-cognitive skills in both male and female labor forces. There has been some information found in the literature that there are some differences in income between male and female, i.e. male receives higher hiring rate than female (Costa, Terracciano and McCrae, 2001: 322-331; Munasinghe, Reif and Henriques, 2008: 1296-1316; Sanborn Henry 1964: 534-550). Therefore, there is an urgent need to analyze the hiring rates being applied as the so-called 'discrimination' between male and female labor forces. The discrimination rates may be explained in terms of the differences in behavioral conducts between male and female workers.

With the use of the Oaxaca-Blinder technique, this technique provided information that the differences in income could have caused mainly due to both employers and employees (Oaxaca, 1973: 693-709).

According to the earnings function, it is one of the economic driven indicators which could be related to employment situation. Generally, the recruitment for new staff members, the employers have to consider the item on numbers of years in schooling and the attained work experiences that related to the position being offered by the firm.

Unemployment and poverty are parts of problems of income distribution in Thailand. These problems do not occur from labor's educational level, but from the fact that employers are those having the right to choose more than employees. Nowadays, there are more labors with higher education, but some of them are still unemployed, when there is unemployment in some profession, and this leads to low income creation.

1.2 The Significance of the Problem

Normally, academic performance and skill could be partly estimated through the GPA. Some common problems that could occur in the labor markets include unemployment, mismatched of the various posts with respect to the demand and supply in the labor markets. The unemployment problems may be largely minimized if the human resource development policy in Thailand could take a special care with the context on the filling up of a gap between the demand for labor capacity and the supply of labor competency. In addition, it may be possible to reduce problem on the inadequacy of the budget (policy) as to enhance the quality of education where this item is still a significant problem of the labor forces (Yongyuth Chalamwong and al., 2004: 1-1).

One factor of important prospect is the IQ score. The cognitive skills have been used widely, e.g., Farkas, England, Vicknair and Kilbourne (1997: 926) employed the Armed Forces Qualification Test (AFQT) as a general test of the cognitive skills that could be applied to many different jobs. Kerckhoff, Raudenbush and Glennie (2001: 1-24) also carried out a proxy of the cognitive skills by applying the Nation's Adult Literacy Survey (NALS) with three approaches: prose, document and quantitative. In addition, years of schooling played an important role in educational attainment. The cognitive skills and the educational attainment are found to overlap when measuring human capital. Both help to explain the role of cognitive skills in the occupational status and earnings (Kerckhoff et al., 2001: 8).

Even though the cognitive skill (measured through by numbers of years in schooling and work experiences) is a significant factor in the earnings outcome yet Wolfe and Johnson (1995: 177-185) showed the important role of the non-cognitive skills for schooling competency in all age groups. As a result, after 2000, economists have attempted to find a rational variable that can better explain the wage determination. Some light has been shed on some psychological traits, such as personality and traits. The non-cognitive skill, i.e., personality and traits, has become an important factor in earnings function such as a service minded, achievement traits, team spirit and etc,.

Psychologists have placed their effort to identify the possible causes behind the non-cognitive skill, while economists have attended the psychological variables (non-cognitive skills). More importantly, it is unclear to point out how the non-cognitive skill could be included in the standard economic model. So far, economists have employed psychological tests, such as the locus of control test (Rotter, 1966: 1-28) and the self-esteem test (Baumeister, Campbell, Krueger and Vohs, 2003: 1-44; Faunce, 1989: 378-400; Mohanty, 2009: 884-897). To measure the non-cognitive skills, however, these tests may not be of a good representative of all the unobserved non-cognitive skills, especially these skills that could be the determinants when it deems of important facts in the earnings model.

One important fact of this study is to determine how personality traits of workers possess its significant impact upon the earnings, and these traits of personalities could possibly be the key determinants for the earnings of different occupations. Thus the relationship between the cognitive and the non-cognitive skills is of significant interest. Therefore, the causality between the two skills upon its relationship has one way, two ways, or no way of causality that could be explored. If a reason on unemployment comes from workers of the non-cognitive skills, then it is essential to know which of the non-cognitive skills has its impact on what occupation where it concerned by policy maker such as with the case on family and educational institution to prepare the competent worker before participate in labor market.

An issue concerning the non-cognitive skills is its relationship with the items on personality, behavior, and traits. These items may affect earnings in both ways, i.e. positive and negative outcomes where it provided the advantage and the disadvantage manners. For example, with self-discipline, it is a non-cognitive skill in terms of positive manner, while neuroticism (emotional person) is a negative behavior. Wolfe and Johnson (1995: 177-185) investigated 32 variables on personality and found that self-control, or conscientiousness, is an important personality for college performance. Many studies have claimed that personality causes performance both in terms of category of occupation and gender (Borghans, Angela and Heckman, 2008: 972-1059; Heckman et al., 2006: 1-80). However, it could be argued that this begins at home and moves to school and then to the work place.

As far as the personality is concerned, there are some traits that may affect earnings, e.g., some personalities such as personal characteristics including beauty, height, obesity, and even whether one keeps a house clean, are often becoming to be strong predictors of future earnings (Bowles, Gintis and Osborne, 2001: 1138). Therefore, labor markets have valued these non-cognitive skills as the efforts embedded in a worker's performance. In economy with the perfectly competitive market, productivity is directly related to the wage rate while non-cognitive skill, through by effort, is one of an explanatory factors in productivity.

Research in Thailand related to the labor market, wages, and earnings, has not been studied in detail in relation to the methodology of labor economics. However, we can see the papers mostly studied are in the area of expectations from employees and weaknesses of the Thai labor force (industry sector).

A prominent point of this study is the results from the non-cognitive skills deeply explained in various traits in each occupation category. Previous studies in Thailand have not presented the relationship between labor income and all the independent factors.

The next consideration is 'How the non-cognitive skill could be affected in terms of an embedded or an instrumental cognitive variable?' This may establish 'Domino effects' to each other where it started from one piece and then to the others. The non-cognitive traits play its role as a driver for both the cognitive skill and performance, respectively.

1.3 Research Aims and Objectives

The main purpose of the study is to present some facts in governing labor markets as to search for some answers on their inter relationship of the different types of personalities and its rewards in the labor markets. In addition, some desirable personality traits for employers will be described. Thus different items of the objective are as follows:

1) To explore the power of cognitive and non-cognitive skills in explaining earnings difference.

2) To describe the role of the non-cognitive skill in various occupations, particularly between male and female.

3) To prove that the non-cognitive skills can provide some reasonable arguments for the unexplained terms in relation to the decomposition of some wage differentials, if they are acting as the determinant of wage, then the ratio between the unexplained terms of the total difference in the wage gap has to decline because of the non-cognitive skills.

This work may provide some other explanatory variables in the gender different payment. The hypothesis of this study includes the facts on the non-cognitive skill and some of the discrimination terms may be reduced when non-cognitive variables are included in the wage equation.

1.4 The Scope of the Study

This study copes with non-agriculture sector due to the Gross Domestic Product (GDP) of the non-agriculture sector is higher than agricultural sector (around 90% and 10% respectively, National Statistical Office, 2008). Therefore, it is of tangible value to examine the factors that enhancing wages in the manufacturing and service sector. The occupation list being used in this study was chosen based on manufacturing and service sector, i.e. the International Standard Classification Occupation (ISCO) of 7 categories of seven occupations were chosen from the list. They are: (1) senior officials and managers, (2) professionals, (3) technicians and associate professionals, (4) clerks, (5) service workers, shop and market sales workers (shop attendants); (6) craft and related trades workers, and (7) plant and machine operators and assemblers.

The Esan or northeastern region of Thailand when regard to the Gross Regional Product (GRP) per capita, it revealed that this region is the lowest in the country (NESDB, 2008). Thus this study will focus on employees' non-agricultural sector in the Mueang District, Khonkaen Province, Thailand. However, within the territory of the region, Khonkaen Province ranks the second highest Gross Provincial Product (GPP) in the region. It is commonly known that Khonkaen Province is the center for a number of academic institutions with a total number exceeded 18

academic institutions including businesses, and manufacturing organizations[1]. The data were collected in the 2009 with the use of different sets of test questionnaires for employees and also the use of the interviewing with the employers

1.5 Organization of the Study

The first chapter was concerning the factors that affect earnings; the significance of the problem, research objectives, area or scope of the work, organization being used in the study, and the benefit of the study. Chapter 2 contains literature review with an emphasis on research works on earnings function and extended to a wage difference. With the previous study, it concerned all possible reasons of wage difference such as demographic, socioeconomic, cognitive skill, and non-cognitive skill factors. Attempts were made to provide facts in understanding the non-cognitive traits that conceptually provided and how the Rotter scale could possibly be a good measurement on the non-cognitive skill. Chapter 3 discussed the research methodology. Chapter 4 determined the empirical results, i.e., the effects of cognitive and non-cognitive skills on labor market outcomes. Chapter 5 analyzed the role of non-cognitive skills in various occupations. Chapter 6 explored the gender wage differentials through the decomposition technique with the non-cognitive skill. Lastly, Chapter 7 included the conclusions and offered the policy implications.

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[1] Khon Kaen Province. Retrieved March 1, 2007 from http://www.khonkaen.com

1.6 Contributions of the Study

Both the cognitive and the non-cognitive skills could be a mixed signal in earnings. The non-cognitive skill can be represented by the test scores on the so-called "locus of control", i.e., the labor market values and the cognitive and the non-cognitive skills in terms of different prospects, such as gender, occupation, and other socio-economic characteristics. For this respect, it may lead to a conclusion that is not involved only with the demographic characteristics, the socio-economic factors and the cognitive skill, but also the non-cognitive skill that can largely explain future earnings. With the outcome of the study, the policy makers in the education sector may develop some learning processes which are the most appropriate bases for students in order to match the employer's requirements.

If the desirable set of characteristics demanded by any employer is known then the parents who look after their children could prepare for their children to fit in those desirable characteristics at an earliest stage. Thus their children could prepare themselves during their schooling years hence the children will grow up with their fine personalities that meet the eyes of the potential employers as to prepare competent workers for the firm

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 The Earnings Function

2.1.1 The Mincerian Earnings Function

There has long been established that the Mincerian earnings function had illustrated that numbers of years in schooling and the item of on-the-job training are recognized as wage determinants (Mincer, 1958: 281-302). However, within this context, arguments exist in relation to the bias prospect in the model. These arguments were raised by Heckman, Stixrud and Urzua, who stated that several studies recognized that numbers of years in schooling, employment, work experiences, and choices of occupation are affected by latent non-cognitive and cognitive skills. Heckman et al. presented an analysis on the effects of both cognitive and non-cognitive skills in relation to wages, schooling, work experiences, occupational choice and involvement in a range of adolescent risky personalities. They demonstrated that a model with one latent of cognitive skill and one latent of non-cognitive skill could explain a large array of diverse behaviors.(Heckman et al., 2006: 1-80).

Productivity is relatively affected by latent non-cognitive skills indirectly through the numbers of years in schooling and work experiences. Especially on the productivity of labor, the non-cognitive traits may be one of the human capitals that explain the earnings (Carneiro and Heckman, 2003 quoted in Heckman et al., 2006:3; Carneiro, Hansen, and Heckman, 2003 quoted in Heckman et al., 2006:3). The significance of the non-cognitive skill in earnings model had been shown by the studies of Heckman et al. which also illustrated that the earnings function followed by the Mincerian equation gave a relatively low explanatory power in explaining the earnings where it derived from the low r-square (Heckman et al., 2006: 1-80). In

addition, Stefanec employed pooled cross-sectional data from the National Longitudinal Survey of Youth (NLSY) and reported that the model had a higher r-squared after adding a non-cognitive proxy: the locus of control and self-esteem. The adjusted r-squared increased from 0.522 (model without the cognitive and non-cognitive skills, included the base case) to 0.528 (for the model with the cognitive skills) to 0.531 (included both the cognitive and non-cognitive skills) where a slightly higher R-square was attained when the non-cognitive skill was included in the estimation. (Stefanec, 2010: 7). Another study of Green and Craig Riddell (2003: 165-184) showed that the earnings model had numbers of years in schooling, attained work experiences, the exponential of work experienced years, and the average International Adult Literacy Survey score (IALS) were used as explanatory variables. The Pseudo R-square from this study is approximately ranged between 0.22-0.15. The numbers do not differ much across the percentiles. The earnings function should, therefore, be determined by other variables. They suggested that cognitive and unobserved skill (e.g., service minded, conscientiousness, docility) are both productive, however, that having more of one skill does not enhance the other's productivity.

2.1.2 Some Explanatory Variables in Earnings Model

Since the late nineties, several economists have attempted to determine a complete estimation of the returns to schooling. An association between wage and schooling is not adequate enough to explain the outcome of the model. The model should also consider the other factors that influence both wages and schooling. This dilemma remains one of the most challenging identification problems in applied econometrics. Nevertheless, this study focuses most on wage differences with respect to genders and occupations.

When reconsidering the earlier determinants of individual earnings, e.g., numbers of years in schooling, years of work experiences, demographic factors and occupation, three thousand employers were used as samples for the work conducted by the U.S. Census Bureau in collaboration with the Department of Education

(Bureau of the Census 1998[2]). The results revealed that the first demand of the employers was on the employee's attitudes. The communication skill was the second. It was noted that the numbers of years in schooling and academic performance on the expected average score was lower than attitude and communication skills (Bowles, Gintis and Osborne (2001: 1137-1176); Heckman and Rubinstein (2001: 145-149).

Later the economists have also attempted to identify the determinants on wages. Heckman et al. (2006:4) employed the OLS in two models –cognitive skill with and without non-cognitive skills. They found that there were many dimensions of social performances on both cognitive and non-cognitive skills, those are significantly justifying the earnings. In addition, the items on employment, work experience and choices on occupation were affected by latent non-cognitive and cognitive skills (Heckman et al., 2006: 4).

When regards to Thailand, Direk Pattamasiriwat and Tuosup Poldee (1991: 41-70) have added other factors into the "Mincerian Earning Model," including migration, full-time or part-time jobs, occupation, size and location of firms. They concluded that schooling and work experiences inadequately explained the determinants for the future earnings. Recently, Ashvin Ahuja; Thitima Chucherd and Kobsak Pootrakool, (2006: 30-32) stated that the Thai employers were more likely to demand for various skills attained by the employees, i.e., both cognitive (mathematic, English language,etc.) and non-cognitive skills (team spirit,extravert, ect.)

Thitima Asawapromthada; Piyachat Jantiwa and Supitcha Chewapruak (2009: 105-106) did a survey on the required competencies of students who participated in a program on the cooperative education[3]. Out of 100 enterprises being used in the survey, the employers prioritized attitudes and work habits as the most desirable skills for carrying out the tasks. Secondly came the occupation-specific skills and the third one was knowledge attained from schools. On attitudes and work habits, in particular,

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[2] http://nces.ed.gov/pubs2008/dropout06/references.asp

[3] This program involves a relationship between a manufacturing firm and an institution (university), aiming on training of the undergraduate students in their final year of study.

the employers seriously expected more on responsibility, honesty, and punctuality (Wirat Yoocha and Yongyuth Chalamwong, 2008: 28-50).

Sarawut Phaitoonpong (2008: 1-28) showed the low level of Thailand's quality of labor. The main reason is the quality of education in Thailand. While the population tends to be an aging society in the next 15 years, the existent labors have not presented their quality in terms of cognitive and non-cognitive skills enough. These problems are shown in every industry in that Thai labor forces have low skills in mathematics, sciences, the English language, and the Chinese language (weakness in cognitive skills). Moreover, lack of non-cognitive skills was also explained in the weakness points, e.g., attitude, enthusiasm, and creativity.

One significant approach has recently been added to the labor market outcomes, i.e., the non-cognitive skill that embeds in productivity. The Thai public sector had announced a new performance evaluation in terms of 'competencies,' i.e., the core competencies and functional competencies within a 'Competency Dictionary' (Office of the Civil Service Commission; (Ratchaneewan Wanitthanom, Pensiri Bhoondhum and Sanit Panithandhum, 2005: 1-143). The competencies comprised both the cognitive and the non-cognitive skills, such as 1) achievement, 2) service mindedness, 3) expertise skills, 4) integrity manner, and 5) team spirit (OCSC., 2005: 94-102). Furthermore, this new concept of competency will be implemented as a measurement tool in the evaluation process and to the compensation and the benefits.

For a typical job, a variety of 'skill mixes' that means the combination of the cognitive and the non-cognitive skills are required from the employee (Ashvin Ahuja et al., 2006: 31). Hence, to develop high quality workers, they proposed a guideline for the achievements of all operations carried out in the firm. In the guideline, they formulated a human development policy. The policy is depended on skills spilling over from the parents and beyond schooling and also previous work experiences. Although, the non-cognitive skill is embedded inside, it could make a difference among workers.

Ashvin Ahuja *et al.*(2006: 30) reported that 5 out of 12 characteristics proved to be valuable in the Thai labor markets. The five characteristics represent the non-cognitive skills are socialization, adaptability, time-management, leadership and teamwork. The remaining seven cognitive skills are English proficiency, information

technology, mathematics, analytical and logical abilities, communication, creativity, and job specific skill. They employed cross-sectional data for several jobs and tested the wage penalty for lack of skills. Consequently, they found that in all jobs, the teamwork skill posed the biggest effect on wage rate. Leadership and time management came in the second and the third one, respectively.

The model being used in this current study comprised of the cognitive skills, demographic factors, socio-economic factors, and in particular, the non-cognitive skills. A part of this study has been modified with the use of the Mincerian equation with an introduction of the non-cognitive skills variables expressed in various personalities being measured through by a psychological test which has been designed for the Thai labor force, especially for the case of the Mueang District, Khonkaen Province. The educational policy implication in Thailand gave a little attention on the non-cognitive skills, whilst that of the United States after the 2000 had enormously emphasized on its important value. Actually during the past decades the Thai people had been firmly conformed to their wealthy tradition and culture in looking after their children where they taught their children to perform respectable behavior, courteous, diligent and be good citizen of the communities. When within the last few decades, there was a rapid changing in both technologies and economic situations based on the capitalism way of life then such of the practiced tradition and culture have declined in its value due to the facts that parents invested more time in earning more income hence there is a gap built up on the relationship between parents and children. Furthermore, the academic curricula of schools have changed when they emphasized most on the subjects that required for taking an entrance examination and some skills in life in order to be admitted to the university level for further schooling into different professional careers. Therefore, the schools offer small amount of activities those being taught to children to perform well behavioral conducts, particularly the activities those related to morality and personality traits. Thus nowadays one would find that the children have shown a decline in practicing all wealthy tradition and culture.

When taking a close look into the regions, particularly the Esan Region, this region was used for this study and Khonkaen Province was chosen as the research site. The Esan Region is the largest region among the four regions of the country, i.e.

South, North, Central Plane and North East(Esan). The Esan Region is located in the upper land areas of approximately 16.96 million hectares with surface elevations ranging from approximately 100 to approximately 300 meters above sea level (A. Suksi, 1999: 1-212). For the past decades, the Esan people have been struggled hard against natural hazardous conditions such as infertile land with drought conditions and some kinds of diseases. In spite of these conditions, the Esan people have thrived on well where they adapted the teaching of the Buddha for their daily living conditions. In general, the Esan people could easily extend their generousness to help one another. An example for this is that the villagers normally offer drinking water in a clay pottery with a drinking coconut cup under the shade of a small cottage in front of their house where the passerby could drink after a long walking journey from village to village. In the former days, the Esan people could easily show their hospitality manner to guests or visitors. They are honest, courteous, not telling a lie and easily trust others, ready to pay back their courteousness to others and pay their respect to elder people. That is why one could see the younger people call the old age people as ‘Dad’ or ‘Mum’, ‘Grandpa’ or ‘Grandma’ depended on how old is the person who is dealing with. The young people always count that the elder people are the people of good deeds so they are valuable people with plentiful of work experiences and they could acquire knowledge from the old age people[4].

Esan’s workers have general habits different from those in other regions. Some of their habits are positive to their earnings but some are not. In addition, family and educational institutions have constructed worker’s habits before they participate in labor market.

Currently, it may be inferred that educational system in Thailand has been keeping pace with that of the western world, thus with the westernized ideas along with the various international economic competitions, these may possess a feedback which may affected both the schooling institutions (within the formal educational

[4] Source: http://www.hellomukdahan.com/thai-isan/thailand-mukdahan-thai-isan-tribe-history.php

system) and the family institutions (informal educational system). These may affect the good old day practices upon tradition and culture of the younger generation to reach a decline. Therefore, it is interesting to observe how the worker's desirable characteristics would be when it comes to their desire in choosing their employees with regards to behavioral and personality traits of the employees. The present policy on learning and training both in the school and in the family may be needed to be reviewed again in order to produce most appropriate graduates before they be participated to the labor markets. In case they are admitted, must the employers offer them some further training programs.

However, education is not full and perfect information to verify worker's ability. Michael Spence stated that "education has been the focus of much of the discussion, it being one of the bases for entry into job categories and for salary levels." Asymmetric information is an eminent problem appearing from job application and educational degree signaling to labor market. Recruitment process via such signals may not serve as complete information. When workers are screened, asymmetric information occurs again with salary depending on workers' ability. Generally, in imperfect market, wage is higher than workers' ability. (Spence, 1981: 319-358)

Currently, the employers begin to give more attention on workers' behavioral conducts as much as educational background and competency of the workers. This could be a reason why the Mincer's earnings function failed to provide adequate amount of variables in the equation hence inadequately explained why the earnings were differently attained even though the workers obtained a similar educational background. It may be possible to link together both the concepts on labor economics and psychology. Behind any performance, the so-called competency, which in this study showed that when the Thai public sector deploys human resource management, particularly in their evaluation, some similar concerns were noted by McClelland, David C. and Boyatzis, Richard E. (1982: 737-743).

At present, the Thai employers have changed their criteria in choosing workers from the old fashion way to the new ones both private and government enterprises. The demand for effective employees increases the consistency for both public and private organizations (Office of Civil Service Commission: OCSC, 2005). The

‘competency-based’ approach to human resource management has become integral during the past thirty years, with ‘competency’ encompassing the knowledge, skills, abilities, traits and behaviors that allow an individual to perform a task within a specific function or job (Vichita Vathanophas and Jintawee Thai-ngam, 2007:45).

In every task, workers will have to put their efforts to achieve the good quality of their results. For example, workers in a company and workers in a public organization both have to emphasize on not only knowledge and ability to produce the output but they have to include within the service their minded behavior in order to get the job done. For instance, the same doctor with the same specialize may have different qualities of medical-care services if one doctor behaves himself with different personality. Normally, the doctor who has a service minded will provide a better service and the patient will gain a satisfaction. Likewise, with some other occupations such as salesman and service driver, each has different earnings due to their personalities (McClelland and Boyatzis, 1982: quoted in OCSC, 2005: 58). Therefore, there are two main themes in the definition on competencies, one is the description of work tasks i.e., who is going to do the job, two is the description of behavior, for instance, how a person does and behaves in doing the job. Whiddett and Hollyforde (2003: 5) defined the ability of work as “competence” and the behavior of work as “competency.”

In terms of economic viewpoints, the employer’s expectations on employee’s productivity and performance may expand from cognitive skills (numbers of years in schooling, years of work experiences, and English skill) to non-cognitive skills (personal traits). The employers always give a significant attention on the two features, i.e. characteristics and personal traits of the workers. Not only the item on Intelligence Quotient (IQ) test is important, but the employers also want to measure the “Emotional Quotient” (EQ) of the workers whenever the firm recruits new staff. The IQ test could be a proxy for the cognitive skills and the EQ test could be a proxy for the non-cognitive skills.

Recently, public and private organizations have given a serious attention upon the competency in relation to ability and behavior of the work.[5]. These behaviors have been explained by the psychologists in terms of personality, attitude, and traits. Labor market tends to value the results of the EQ test as much as other traits.

Heckman and Rubinstein (Heckman and Rubinstein, 2001: 145-149) also confirm this new concept through the GED[6] (General Education Development) test in the wage equation. They illustrated the significance of the non-cognitive skills as a mixed signal in the labor market. A mixed signal is a signal of an employer who has identified both cognitive and non-cognitive skills as a determinant in the wage and earnings function. Therefore, education system should be used as a balance tool to generate both IQ and EQ for their students before they participate in the labor market.

From the prospect on IQ and EQ, these two items when combined together then its form can be both the intelligence and personality traits. In general, Economists defined personality as a significant skill embedded in the labor forces. Thus, they recommended the terminology in economics context as the "Non-cognitive skill (NC)" (Borghans et al., 2008: 972-1059; Bowles et al., 2001: 1137-1176; Heckman and Rubinstein, 2001). The non-cognitive skills could be a concrete stability when applied through a likert score. The likert score had been originally developed by Rensis Likert in the 1932. This type of rating scale is the most popular technique to be used where it provided scales of attitude. The likert rating scales are commonly used in various settings, including clinical, educational, administrative, and organizational contexts. The use of the scores derived from the likert is just like the measurement on level of attitude or behavioral conducts of the answering worker.

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[5] Data derived from an in-depth interview with an Administrator at the Faculty of Management Science, Khon Kaen University, Thailand and also a company of Motor Sale and Services in Amphure Mueang, Khon Kaen Province, 2008.

[6] GED is a test for only individuals who have not earned a high school diploma. The tests were originally created to help the veterans after the World War II when they returned to civilian life. GED recipients not having received a high school diploma included adult immigrated to the United States or Canada, home-schooling, leaving high school early, the inability to pass the required courses or mandatory achievement tests, the need to work, personal problems, and wanting to get into college early.

In case the answering workers have evaluated themselves at a relatively high score then it is possible to point out that the worker could be of the high agreement on that item. More details on this respect will be discussed in Chapter 3.

Furthermore, Heckman and Rubinstein (2001: 145-149) have tried to illustrate that the non-cognitive skills are related to the cognitive ability in the General Educational Development (GED) Testing Program,[7] measured in the questionnaires. As a result, the non-cognitive skills illustrate which actions and behaviors are related to the cognitive ability and educational attainment. Heckman also suggested that education is not the only signal in the labor market when it comes to wages. The non-cognitive skills have also played an indirect role.

2.1.3 The Non-cognitive Skills in the Earnings Model

It has been generally well-established over a long period of time that more years of schooling and training can enhance future earnings. However, there are some arguments over this accepted view even though the concept can predict the future earnings. When the structures of the wage function are not of monotone such as with the case of the white males, it was happening in the 1963 and 1989. They concluded that the numbers of years in schooling and other external factors, e.g., demand and supply, also affected wage levels. The demand for labor of the employer could be determined by both cognitive and non-cognitive skills. The supply of labor by the employee should also consider their knowledge and work habits (Katz and Murphy, 1992; Murphy and Welch, 1992: quoted in Heckman, Lochner and Todd, 2003: 2). In addition, it was found that many dimensions of social performance on the cognitive and the non-cognitive skills are equally important (Heckman et al., 2006: 1-80).

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[7] The GED testing program is a second-chance program that administers a battery of the cognitive tests (12 years of schooling) to self-selected high-school dropouts to determine whether or not they are the academic equivalents of high-school graduates (Heckman and Rubinstein, 2001:146).

2.1.4 The Non-cognitive Skills and Gender Wage Gap

The wage differential issue is an important question that several economists have been trying to answer. This study includes the differences in wages based on gender, race, and firm-size. Considering the gender wage gap from the 1950s when it shown in the U.S. Census, Sanborn (1964: 534-550) reported that the ratio of male/female income was more than 1.0. This result implies that there were differences in wages between male and female labor forces. Oaxaca (1973: 693-709) developed a decomposition technique known as the Oaxaca-Blinder technique to decompose pay differences between males and females of the same occupation. In their study, they left out some variables as embedded or ignored conditions. Thus their results could have been, one way or another, incomplete for its highest explanation on the differences in wages. It may be possible that if the non-cognitive skills are introduced into the earnings model, then the residual outcome may be changed.

The earnings function begins with a Standard Neoclassic Model, in which individual utility functions are independent predictions that workers will be paid their marginal products by cost-minimizing firms who purchase their services in competitive labor markets. Many firms have strictly followed the payment formula based on education (Frank, 1984: 1). Regarding educational attainment, many economists understand it as a cognitive skill. They explain much of the variation in cognitive skills. Many of the cognitive skills such as years of schooling, education attainment, and years of work experience can explain occupational status and earnings (Farkas, 2003: 541-562; Kerckhoff et al., 2001: 1-24; Owens, 1969: 199-208).

When the interest in human capital resumed, the focus was on the contribution of education to economic growth and investment in education found in less developed countries. Earning differences were found across professional occupations (Friedman and Simon Kuznets, 1945; Schultz, 1961: quoted in Chiswick, 2002:5).

Mincer's earnings regression is a popular model that economists have employed to determine significant factors that can predict earnings. The principal-

agent problem[8] has also been discussed as a source of compression of the internal earnings distributions of firms (Shavell, 1979: 55-73).

Earnings equation from the original called "Mincerian Equation" show in equation (2.1) below

$$\ln\left[\left(w\,(s,x)\right)\right] = \propto_0 + \rho_s s + \beta_0\, x + \beta_1\, x^2 + \varepsilon \qquad (2.1)$$

Where W is wage while *S* is years of schooling and *W(s,x)* is wage at schooling level *s* and work experience *x* , ρ_s is the rate of return to schooling being assumed to be the same for all schooling level and ε is a mean zero residual with $E(\varepsilon \backslash s, x) = 0$. (Mincer, 1958, 1974 quoted in Heckman, Lochner and Todd, 2003:4-5).

The Mincer equation can be extended by applying the integration method and using the second-order Taylor expansion to solve human capital after school. Dilaka Lathapipat (2007: 4-6) illustrates (show in equation 2.2-2.15) that net earnings (Y_j) is a net of the human capital investment (E_j) and the amount of net time equivalent human capital in *j* year (C_j). The net capital investment ratio (K_j) is a ratio of human capital in *j* year (C_j) and human capital investment in same year (E_j)

$$Y_j = E_j - C_j \qquad (2.2)$$

$$\text{let} \quad K_j = C_j / E_j \qquad (2.3)\ [9]$$

$$E_j = E_{j-1} + rC_{j-1} \qquad (2.4)$$

Where K_j is a net human capital investment ratio and r be the average marginal return on the investment. After substituting (2.3) into (2.4) then the relationship as:

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[8] The principal-agent problem comes from the fact that large members of firms have limited knowledge about the productivity and effort of their workers. It could be argued that the employer (principal) only has limited access to effort from the employee.

[9] e.g., K_j = 0.6 means that in every 1 unit of earnings that come from investment in human capital 0.6 unit.

$$E_j \;=\; E_{j-1}(1 + rK_{j-1}) \qquad (2.5)$$

It can be written as the present value of human capital at year *j*, which is generated from a previous value of human capital at rate *r*. By the recursive Equation (2.5), the gross earnings capacity can be written as:

$$E_j = E_0 \prod_{t=0}^{j-1}(1 + rK_t) \qquad (2.6)$$

Taking log in equation (2.6) and using the approximation that $\ln(1 + rk_t) \cong rk_t$ for small rk_t will give,

$$ln\,\mathrm{E_j} = \;\ln E_o + r\sum_{t=0}^{j-1} k_t \qquad (2.7)$$

The first term on the right hand side is the initial human capital and the second is the accumulated human capital after initial year to year *j-1*.

Let the observable net earnings, Y_j ,in year j after schooling (or equivalently in the *j*th year of work experience) be given by a gross of human capital investment E_j minus by the amount of net "time-equivalent" human capital investment *j* year into work experience, C_j (C_j is a time-equivalent between schooling and work experience year)

$$Y_j = \; E_j - C_j \qquad (2.8)$$

From $K_j = \frac{C_j}{E_j}$ so $C_j = \; K_j . E_j$ substitute C_j into (2.8) then

$$Y_j = E_j - \; (K_j . E_j) \text{ so } Y_j = \; E_j(1 - K_j) \qquad (2.9)$$

Take log into (2.9) yields:

$$lnY_j = lnE_j + \; \ln\,(1 - K_j) \qquad (2.10)$$

Substitute (2.7) into (2.10) yields:

$$lnY_j = lnE_0 + r\sum_{t=0}^{j-1} K_t + \ln(1 - K_j) \qquad (2.11)$$

Assuming that during the schooling period, all time available is devoted to education. Hence, $K_t = 1$ and the average marginal returns during the S years of schooling is r_s.

From (2.8), $E_j = Y_j + C_j$ at initial period, j=o then $E_0 = Y_0 + C_0$ and

$$lnE_0 = lnY_o + r_sS$$

Therefore, $lnE_0 = lnY_o + r_sS$ for some initial earnings capacity $Y_o$before any formal human capital investment is undertaken. Substituting lnE_0 into Equation (2.11) yields:

$$lnY_j = lnY_0 + r_sS + r\sum_{t=0}^{j-1} K_t + \ln(1 - K_j) \qquad (2.12)$$

For convenience, treat the investment and earnings functions as continuous functions of time and change the subscript from *j* to *t* to write Equation (2.12) as:

$$lnY_t = lnY_0 + r_sS + r\int_{j=0}^{t} K_j d_j + \ln(1 - K_t) \qquad (2.13)$$

Assume that the net investment ratio takes a linearly declining profile and is denoted by K_0; the initial net investment ratio at the beginning of the work experience, and by *T*; the total period of positive net investment. Then:

$$lnY_t = lnY_0 + r_sS + r\int_{j=0}^{t}(K_0 - \frac{K_0}{T}j)d_j + \ln(1 - K_0 + \frac{K_0}{T}t) \qquad (2.14)$$

Integrating the term in the integral and using a second-order Taylor expansion for the right-most term around 1 in Equation (2.14) and rearranging yields a parabolic earnings function proposed by Mincer.

$$\ln Y_t = \underbrace{\left[\ln Y_0 - k_0 - \frac{k_0^2}{2}\right]}_{\text{Intercep}} + \underbrace{r_s s}_{\text{Return to Schooling}} + \underbrace{\left[rk_0 + \frac{k_0}{T} + \frac{k_0^2}{T}\right]t - \left[\frac{rk_0}{2T} + \frac{k_0^2}{2T^2}\right]t^2}_{\text{Return to work experience and its diminishing term}} \qquad (2.15)$$

The first term on the right hand side (RHS) is interpreted as the intercept of the regression equation, both zero returns from the schooling year and the work experience or other words is mean that workers earn some their income possibly is heritage from their parents. The second term on the RHS is a return to school such as GPA, while the third term are the slope coefficients of the work experience variables and fourth term present a diminishing earnings due to additional work experience years leads to diminishing in marginal earnings according to age-earning profile (Mincer, 1958: 281-302).

This set of terms can be interpreted: trade-offs between lower initial earnings from investing in post-schooling human capital investment (the second term), and a higher rate of growth of the wage rate with work experience--the third and fourth term (Dilaka Lathapipat, 2007: 6).

However, this model is limited to explanation of cognitive skills, namely schooling and work experience, in the earnings function. It might not be powerful enough to predict future earnings. Heckman, Stixrud and Urzua (2006: 9-15) have alternatively applied the earnings function as a linear-parameter specification called a "hedonic model." This model is constructed under the assumption that both cognitive and non-cognitive skills affect earnings. It can be expressed as:

$$Y_s = \beta_{Y,S} X_Y + \alpha_{Y,s}^{C} f^{C} + \alpha_{Y,s}^{N} f^{N} + e_{Y,S} \quad \text{for s} = 1 \ldots \bar{S} \qquad (2.16)$$

X_Y is a vector of observed controls, e.g., demographic and socioeconomic factors, $\beta_{Y,S}$ is the vector of returns associated with X_Y, $\alpha_{Y,s}^{C} f^{C}$ and $\alpha_{Y,s}^{N} f^{N}$ are the cognitive and non-cognitive loadings, respectively. $e_{Y,S}$ represents an idiosyncratic error term associate with existing some cognitive and non-cognitive characteristics being left out from the estimation, so that should exist in the earnings equation

$e_{Y,S} \quad f^{N}, f^{C}, X_Y)$ for s = 1,… $\bar{S}$.

Equations (2.1) and (2.15) explain earnings with cognitive skills and point out the effects of cognitive skills, especially work experience, has illustrated a

diminishing return (work experience square). In addition, equation (2.16) adds non-cognitive into the hedonic wage model. Therefore, this study will combine both the Mincerian earnings model and Heckman's model by adding non-cognitive skills into the earnings equation and answering the first objective of this study that the cognitive skills and non-cognitive skills can explain earning functions of labor market.

The second and the third objectives are related to wage difference among occupations and gender next, review the wage differential.

2.2 Wage differential

When considering the differences in wages, such as the wage gap due to different levels of schooling. The difference in wages can be written as: the wage gap that different levels arise out of schooling (Brown, 2001: 97).

$$lnW_{ij} = F_i + bS_{ij} + e_{ij} \qquad (2.17)$$

W_{ij} is the wage of the *j*th member of family *i*; F_i represents the effects of the innate ability or socioeconomic background that are common to members of family *i*; S_{ij} is a level of schooling attained by the *j*th member of family *i* and e_{ij} is an error term that affects the determinants of earnings and has no correlation with family's member and schooling (Brown, 2001: 97).

Consider a family with two members. The difference in their wages due to omitted family factors (other thing being equal) can be expressed as:

$$\ln w_{i1} - \ln w_{i2} = \underbrace{b\,(S_{i1} - S_{i2})}_{(a)} + \underbrace{(e_{i1} - e_{i2})}_{(b)} \qquad (2.18)$$

Where i is the household *i* with members *j* (1, 2) and who may have different wages stemming from the difference in schooling level. Equation (2.18) is derived from two wage equations, with each having an intercept on the y-axis of "F_i." This intercept presents a family factor which becomes "zero" when a wage gap exists

(same family, F_i-F_i = 0). The first term, (a), is a difference in wage due to the difference in schooling and second term, (b), is a difference in wage due to other unexplained.

Normally, terms (a) and (b) must be uncorrelated for the estimation of the effect of schooling to be unbiased. On the other hand, one can imagine that one sib or twin has a serious health problem or a personality quirk that interferes with both learning and earnings (Brown, 2001: 97). As a result, the bias problem is encounter between (S_{i1}- $S_{i2)}$ and (e_{i1}- e_{i2}). It could be larger than the one obtained from the differenced data and is unbiased (Bound and Gary, 1999; Brown, 2001: 97; Griliches, 1979: S37-S64; Neumark, 1999: 143-148). One way to cope with the bias is to apply an instrument wage equation. Year of schooling or education attainment has long been recognized as reasonable instruments for education that would allow for the estimation of the casual effect of education on earnings (Bound and Jaeger, 1996: 7-11; Kling, 1999: 1-35).

2.3 Independent Variables

2.3.1 Educational Attainment and Cognitive Skills

A positive relationship between grade point average due to self-control and self-reporting scores can be interpreted as a good performance. In other words, a good cognitive skill is a non-cognitive ability (Tangney, Baumeister and Boone, 2004: 288). Likewise, Duckworth and Seligman (2005: 939) proved this relationship by measuring self-discipline. Their result revealed that a major reason for the students who are falling short of their intellectual potentiality could be due to the reason that they fail to exercise self-discipline. In addition, Lleras (2008: 888) found a complete predictor in the earnings function. The predictors were occurred in 10 years later in the 2000. The results pointed out that the students with better off in social skills, work habits, and who participated in extracurricular activities in high school had higher educational attainment and earnings than those without (Lleras, 2008: 888).

Rossetti and Tanda (2000: 18-19) study was statistically significant in all levels of education (They divided this variable into compulsory schools to bachelor degree in terms of the dummy), which cognitive skills and intelligence seem to be

share of definition, conveying a sense of intelligence. It has been long recognized that the two sides of human brain left and right are where both of this brain are the human intelligence. Howard Gardner (1983) addressed the multiple intelligences (Figure 2.1), an idea that maintains there, it resembles many different types of cleverness ascribed to human beings. In replying to the question of whether or not the measurement of intelligence is scientific, Gardner suggested that each individual manifests varying levels of intelligence. Thus, each person has a unique cognitive profile. The theory was first proposed in Gardner's 1983 book titled "Frames of Mind: The Theory of Multiple Intelligences." This theory has been further refined in subsequent years. In 1999, eight intelligences were listed: linguistic, logic-mathematical, musical, spatial, bodily kinesthetic, naturalist, interpersonal and intrapersonal. Some of the eight capabilities are generate from left and right brain. Left brain correlate to a capacity of calculate, mathematics, sciences while another side has controlled about an arts, language. Recently, Xi, Hwang and Cao (2010: 652) stated that "English ability is a key mediator through which structural forces shape individual immigrant's economic assimilation outcome." Godoy, Reyes-Garca, Seyfried, Huanca, Leonard, McDade, Tanner and Vadez (2007: 355) address the fact that the dominant language has more of an advantage. Their case of the Bolivian Amazon in Bolivia is a developing nation, where Spanish is a formal, or dominant, national language, while the local language, Tsimane, is a minority language. As a result, people who fluently speak Spanish earn around 47 percent more than the monolingual speakers of Tsimane.

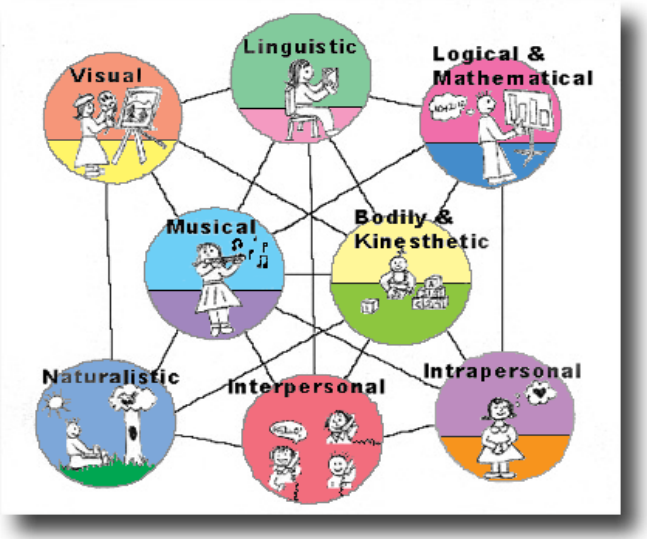

Figure 2.1 Multiple Intelligences
Source: Gardner, 1983.

We could consider all the skills embedded in personality, as above, in that they are comprised both of cognitive skills (such as logical mathematical) and non-cognitive skills (especially interpersonal and intrapersonal). Different career may dominate by different skills, for example, scientist must be a logical man while singer must be a sensitive with his or her emotion when he or she sing a song.

From the "sense of capital" to the terminology of "human capital" (Fisher, 1897: 208), an investment in human capital has its validity explain puzzles about economic growth through income (Schultz, 1961: 1). The popular book, the "Wealth of the Nation," stated that one reason for differences in wage is the difference in education (Smith, 1776: 7). Schultz(1975: 827-828) stated that education could particularly separate entrepreneurs from others with the productive skill that related to productivity.

Cognitive and non-cognitive skills affect earnings. The staff has productive skills by the foundation of both skills. Cognitive skills could be measured by the number of years in school. The significance of education, cognitive skills in the labor force outcomes, differences in genders, and differences in social origins, ethnicity, and native languages. The case of educational attainment as a dependent factor,

demographic factors (education of parent, age) are statistically significant. Moreover some economists such as Heckman and Rubinstein have focused on non-cognitive skills, which can be defined as patterns of thoughts, feelings and behavior that affect one's social interactions with others and finally conclude that not only cognitive skills but non-cognitive skills are also an explanatory variable of wages and social outcome. (Bowles et al., 2001: 1137-1176; Cobb-Clark and Tan, 2011: 1-13; Heckman and Rubinstein, 2001: 145-149; Kerckhoff et al., 2001: 7; Toomela, 2008: 19-28).

Level of education is one of the human resource measurements. According to Thienchay Kiranandana, human beings are a kind of economic capital called Human Capital (Becker, 1993). The more education and experience workers have, the more human capital accumulates. Capital proprietors are workers. Generally, that we can perceive this through the whole economic system by regarding labors as human capital can be measured by population years of schooling, literacy (labors at the age of fifteen or more), and ratio of professionals (i.e., managers, executives, teachers, physicians, dentists, engineers, scientists , etc.) to the whole population (Thienchay Kiranandana, 1976: 10-11). From Thailand's 2008 data, the percentage of literate labor force to total population is 51.74.

In the case of Thailand, cognitive skills of children related to the size of the family exert a substantial negative influence on the probability that a child will attend secondary school in Thailand. Small sizes in family come from urban areas, as they have a chance to access higher education. On the other hand, in rural areas, most people have a big family size with a lower opportunity to access higher education by the reason of low household income (Knodel and Wongsith, 1991: 119-131).

Basically, the wage structure in Thailand (public sector) determines the level of education and work experience, represented by years of schooling and years of work experience, respectively. According to the remuneration system in Thailand, years of schooling is a first criteria to determine a wage rate (Office of The Civil Service Commission: OCSC, Thailand).

Another factor that could be explanatory variables in earnings equation were listed: on the job training, demographic variables, family interaction, gender, health.

2.3.2 On the Job Training

Becker stated that firms that invest in on the job training could increase productivity, just as general training and specific training depends on a firm making or designing that investment (Becker, 1993: 55). Effects of on-the job training affects productivity and further links to wages. Xiao(2002) used 1996 survey data for 1,023 employees in Shenzhen, China. This study found that (a) pre-work formal education was only positively associated with salary at hiring; (b) employees' work experience in changing production technology, as well as on-the-job training, were positively associated with salary increases through improved technical proficiency, formal education was not; and (c) manufacturing firms introduced more new production technology than the service sector and provided more on-the-job training, thus improving workers' performance and increasing their salary (Xiao, 2002: 557).

Likewise, Konings used longitudinal data from more than 13,000 firms to analyze the effects of on-the-job training on firm level productivity and wages and found that this makes firms more productive, between 1% and 2%, compared to firms that do not provide training. Moreover, the effect of training on wages is also positive, but much lower than the effect on productivity (Konings, 2008: 1-15).

Therefore, skills have been increased by training. On-the-job trainings are provided by the firm if it is enhancing specific skills vis-a-vis general skills that should be supported by the workers themselves. According to Becker (1993: 35), employees would invest for general training by receiving wage below their current (opportunity) productivity, raises their future wages (Becker, 1993: 34).

Specific training should be provided by the firm, because specific skills can increase productivity in the firms (Becker, 1993: 41).

2.3.3 Demographic Factors

1) Age

The relationship between age and earnings has been proven by Jacob Mincer’s famous book in 1958 (Mincer, 1958). According to Becker, age-wealth profile conceptually relates age and discounted value of future earnings by investment in human capital similarly to the idea of the underlying age-earning profile (Becker, 1993: 230).

The age earnings profile presents a quadratic relationship between age and earnings. Moreover, this profile can explain how education could affect, in a positive force, to earnings of people of the same age. In addition, in the Mincerian model, age is embedded in terms of work experience and work experience squared. The work experience term determined diminishing returns (Becker, 1993: 233). For the relation between age and productivity, Kotlikoff and Gokhale inferred age-productivity profiles using large firm's data for workers employed in 100 firms whose earnings histories covering the period 1969-1983. They found relationship between compensation and age difference among occupation categories, however, in a whole working period all types of occupations showed the decreasing compensation after the 40th year on average (Kotlikoff and Gokhale, 1992: 1215-1242).

2) Family Interaction

Filer (1986: 418) showed that a father's socioeconomic status could drive their children to be a manager. It may be implied from Filer that the parents tend to invest in education for their children more than what they have received. Most of the Thai entrepreneurs have a similar style about their business profession, i.e., it is normally transferred to the next generation, or, in other words, from parent to son or daughter.

In addition, Rossetti and Tanda (2000: 17) considered both horizontal connections formed between spouses and vertical relationships between parents and their labor force outcome of their children by adding parent's education in the earnings function. Coefficient's explanatory power decline after adding parent's education in the model, this result may imply that parent's years of schooling affected their children's productivity in the labor market. Their horizontal relationship also affected their partners, if considered in terms of educational degree. They found that a spouse who graduates with a humanity degree could positive affect his/her partner's income more than other degrees, such as science and social science degrees.

3) Gender Discrimination

Masculinity and femininenes differs naturally. For example, a married pregnant female has to temporarily take a job absence in order to raise her child. Hence, the continuity of employment is inferior to that of a male since she has to perform her duty as a mother.

Several reasons cause the difference in income between genders. Schooling attainment is one of the significant factors. What is the difference between the educational attainment of men and women in school? It is widely recognized that women have been underrepresented at the top of the educational distribution (Sewell, 1971 quoted in Spaeth, 1977:207). Nonetheless, several economists, including Spaeth (1977), found that "women's average level of education is about the same as men's because women are more likely to complete high school than men." Therefore, the same educational attainment leads to the same earnings level. However, there is some discrimination between gender.

Lots of studies, both before and after 2000, have tried to analyze the amount of un-explained issues (in terms of gender wage differentials). Sanborn (1964: 534-550) found the female/male annual income ratio less than 1 (.58). In other words, the female's wage is less than the male's wage. The difference is explained by difference of human capital and others from unexplained reason named residual term in wage gap equation. Therefore, the residual difference was 0.13 or about 18% of the original differential or total difference. Later, Fuchs (1971: 9-15) adjusted the ratio by adding color, schooling, age, and city size. It turned out that the ratio is still present at a residual of 77 percent of the original difference.

An attempt was made with the use of the decomposition of the discrimination after adding non-cognitive skills into the model. It was expected that the residual portion of the differential would decline. The female seems to be entering manager status more than sales, blue collar workers, and service workers. However, there are more female clericals than female managers (Filer: 1986: 418).

If occupational status is one of the causes upon this gap, then women that obtained lower earnings than men could have been caused by the status of the job. High status jobs have few woman, or small proportions of the total. They are not reflected in measurements of central tendency (Spaeth, 1977: 207). Recently, occupational choice such as "Information Technology occupations, show that men and women differ systematically in their interests, and that these differences can account for an economically and statistically large fraction of occupational gender gap" (Rosenbloom, Ash, Dupont and Coder, 2008: 543).

2.3.4 Health Factors

Worker's health is related to their productivity. Human capital consists of healthy, well-educated, skilled, innovative, and creative people who are engaged in their communities and participate in governance (Lee, Kiyu, Milman and Jimenez, 2007: 77). Deeply focusing on individual outcome, we recognized that if someone has good health, they will gain a higher income than an ill person (Kawachi and Kennedy, 1999: 215).

Marcotte and Wilcox-Gok (2001: 21-27) shows the effect of the friction cost of illness to earnings in the United States. Mental illness is found to decreases the annual income for amount between $3,500 and $6,000. More recently, Lee, Tsang, Huang, He, Liu, Zhang, Shen and Kessler (2010: 3) have found that serious mental illness (SMI), lowers individual income by 53 percent.

2.3.5 Socioeconomic Factors

1) Occupation

Reder (1955: 833-834) stated that "skill differential" or "skill margin" is one of the explanations of wage differentials associated with occupational specification.

To earn a living in both public and private organizational system, level of education and working experience are instruments that classify professions related to either branches of study or accrued experience. This is also true in determining job positions. For example, workers with graduate degree should gain a higher position than that of those with primary education (Ministry of Labor, 2011). Therefore, we can state that job description is determinants for earnings (because level of education is endogenous). In 2001-2002, Thailand overall employment was categorized by industrial sectors and level of education according to educational background. Interestingly, a number of laborers with undergraduate degree or higher have less vacant positions than those with lesser degree, and Thai labor market has higher demand in laborers with science and technology degree than all other branches (Yongyuth Chalamwong et al., 2004: chapter 5).

2) Industry and Firm Size

Wages are positively related to firm size. This relationship was exposed by various reasons from several researchers. Moore (1911) was quoted stating this information in Idson and Oi (1999: 104) and it was later confirmed by Garen (1985: 715-739), Brown and Medoff (1989: 1027-1059), Rebitzer and Taylor (1995: 678-708), Green, Machin and Manning (1996: 433-455), Troske (1999: 15-26), and Belfield and Wei (2004: 185-193). The evidence for the employer-size effect (ESWE) could be explained by many reasons.

(1) Skill and technology complementarities

Generally, workers in large firms are expected to have high skills, for instance, large firms may offer more firm-specific training, more intra-firm skill diffusion, and a greater specification of tasks. High technology in capital is a reason that large firms invest in high wages, which need high skills. High skills are offset with high compensation (Dunne and James A. Schmitz, 1995; Kalleberg and Buren, 1996; Rebitzer and Taylor, 1995: are quoted in Belfield and Wei, 2001:188-189). The size-wage premium is due to larger firms being managed by more-skilled managers, who hire more-skilled workers (Oi, 1983: 63-122).

(2) Trade off between monitoring cost and pay

To prevent shirking and reduce monitoring costs, large firms may pay workers a higher wage (Shapiro and Stiglitz, 1984: quoted in Befield and Wei, 2001: 186). Likewise, Bulow, Jeramy and Summer (1986: 376-414) stated that this premium presents a trade-off made by large firms in favor of higher wages and less supervisory workers.

In Thailand remunerations and wages in large firms are higher than in small firms, by the reason of matching skills and technology between employers and workers. The National Statistical Office of Thailand reported that remuneration rose with firm size. Figure 2.2 illustrates the size differ is base on the number of workers in the workplace (National Statistical Office, 2003).

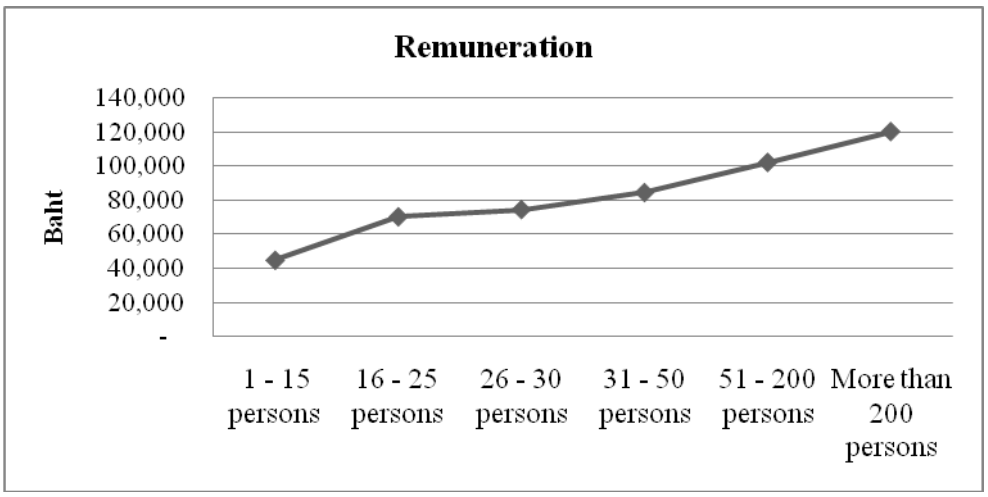

Figure 2.2 Remuneration by firm size

Source: National Statistics Office, Thailand, 2003

Another point of view for psychological concepts as a base of personality is related to quality of work and productivity. Eventually, workers who have higher productivity may lead to have higher earnings. Generally, personality comes from individual need and motivation.

2.4 Motivation Theory

Both motivation and behavior when join together made it possible for labor force to attain better education and eventually reflected job opportunity and income. The commencing point of behavior started from basic motivation being activated by incentive which could be commencing from birth. Any activated motivation when repeatedly carried out it could shape up personality traits of any labor force.

Sigmund Freud assumed that everyone possessed action under nature of themselves and that all actions are determined by their impulse (Freud, 1917: 1-406). Generally, motivation is comprised of two factors: energy, that relates to a fundamental matter of needs, and direction, that depends on the stimulation process and structural stimulation (Deci and Ryan, 1985: 3). For example, Mr. A has been experiencing with many competitive stimulations hence he has a serious minded in life, i.e. he aims to be the winner in all cases, whilst Mr. B exposed himself to friendliness environments hence Mr. B could be recognized as a person who has

unstable minded and his judgment could always base on friendliness environment.

Figure 2.3 illustrates the cause of where the motivation has come from. Considering the side of energy, it was explained fundamentally in a matter of needs, comprised of organism needs and environmental needs. Therefore, all needs affect the direction of behavior. For example, Mr. A has possessed within his mind of many fundamental needs such as food, clothes, medicine and at the same time he wishes to be a good child in the family as a result of the religious believing and he has good co-workers and he also has an incentive to attain a prosperous future within his job.

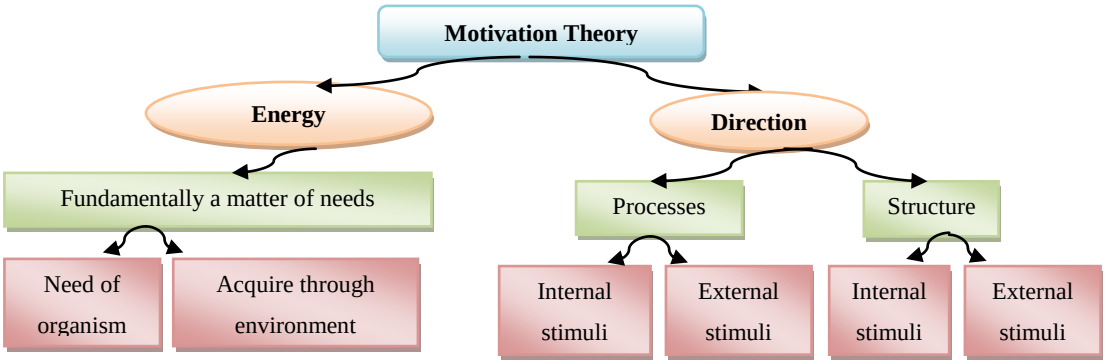

Figure 2.3 Motivation Theory
Source: Deci and Ryan, 1985: 3-4

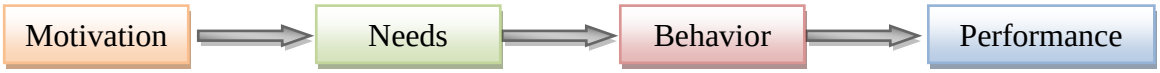

Figure 2.4 Causes of Behavior
Source: Deci and Ryan, 1985: 3-4.

In general, behavior is the result of need and motivation. Figure 2.4 clarifies that performance is recognized as a result of behavior. For example, Mr. A has a motivation to be a millionaire thus he wishes to own a business enterprise and when he had reached what he need then he would become a community leader. What he acquired on his successful business derived from his will and his hard working character. The kind of behavior of Mr. A. may be classified into a kind of dictatorship where it rent himself to the successful jobs done, whilst his subordinates suffered a lot due to his dictatorship yet all of the work done derived from his labor force where the

hard workers carried out more job done than the lazy ones. When considering labor force performance, it could be measured by the level of earnings. One of the most valid proxies of behavior is the so-called "self-esteem." It is a type of personality developed by a measurement devised by Rosenberg (1965), which has directly affected performance. In 1966, Rotter (1966) generated self-determination or personality by the concept of the Locus of Control. He developed a psychology test viz. "locus of control" (Appendix B).

2.5 Intrinsic Motivation

The reason behind human behavior leading to their non-cognitive skills is motivation. A different kind of motivational concept argument would complement drives and could be the basis of a motivational propensity being accounted for play exploration, and a variety of other behaviors that do not require reinforcement for their maintenance. Some effects of motivation could be created by organisms. This motivation will be effectively achieved if dealing with their environment (parentage, schooling, friend, etc.) (White, 1959: 297-333).

Furthermore, many psychologist explained of the concept of self determination that ego energy is a reason for intrinsic or internal motivation (Rapaport, 1960: 39-85). A reason for "ego" energy is an effect of "id" and the social environment (Shapiro (1984), White (1959), and Wolstein (1982) are quoted in Deci and Ryan, 1985: 5).

Ego psychology comprises of a related set of theoretical concepts of human behavior that focuses on the origins, development, structure, and functioning of the executive support of personality—the ego—and its relationship to other dimension of the personality and to the external environment (parentage, schooling, friend, etc.) (Goldstein, 1984: xiv)

Figure 2.5 Self Determinations

Source: Deci and Ryan, 1985: 5-6.

Motivation is not just behind all sorts of behavior, but underline psychological needs as well in the forms of drives, needs, and awareness. Motivation normally comes from both the internal and external. If the motivation is created from internal motivation, then it refers to both drives, physiological and psychological needs. External motivation focuses on incentives and goals Deckers (2005: chapter8).

2.6 Motivation and Personality

Based on causality orientation theory, there are three parts of behavior and motivationally relevant psychological processes: 1. self-determined, 2. control-determined, and 3. motivational segment (Deci and Ryan, 1985: 149).

There are two approaches for understanding human organisms: mechanistic and organism theories. The former explains the human organism as passive. Organism theory explains the human organism as active. It argues in drive theory that human behavior is drives by intrinsic needs (Freud, 1917: 61-206). Freud asserted that the drive develops from dreams and could be different in gender and aggression (see Freud S. "A general introduction to psycho-analysis. New York: Perma Giants, 1949, originally published, 1917).

Hull (1943) asserted that drive is derived from hunger, thirst, gender, and the avoidance of pain. He summarized the role of drive into two sides: general drive and animal learning. Drive theories were inadequate to explain items on many of the various observed complexities of the behavior. The main impulse for change from the intrinsic drive theory of motivation came from its different aspects in explaining normal development patterns, i.e., “conflict-free sphere,” which leads to learning and reinforcement. For example, if we hungry then we have a motivation to buy food. However among group of people, there might be different way to response in a same motivation of hungry. One may buy a junk food due to a low price, another one desire a stake in higher price and they would receive some utility with stake more than a junk food. Two ways to answer a same motivation has motivated in different behavior.

Motivation has been leaded to personality. The personality of man(woman) is the interplay of three psychic mechanisms: the id, the ego, and the super ego (Hall Calvin S. and Lindzey, Gardner, 1985: 33). According to this model, the uncoordinated instinctual trend is the "id,” the organized realistic part of the psyche is the "ego," and the critical and moralizing function is the "super-ego" (Snowden, 2006: 105-107). Even though the model is "structural" and makes a reference to an "apparatus,” the id, ego, and super-ego are functions of mind, rather than parts of the brain. Hence, they do not necessarily correspond one-to-one with the actual somatic structures dealt with by neuroscience.

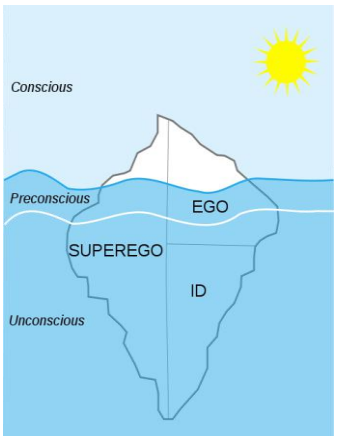

Figure 2.6 Id, Ego, and Super-ego

Source: Lindzey, 1985.

In the structural model, the id is a frontal to the ego, i.e., the psychic paraphernalia begins at birth as an undifferentiated id, part of which then develops into a structure of the ego (Figure 2.6). In the manuscript of Sigmund Freud, which was later published in 1940, it gave a definition of id as follows:

The "id" is unconscious by definition. Another part beyond id is the so-called "super-ego." The superego tells us what is "right" or "wrong" and considers the three components of the early developed personality into a whole (Freud, 1940: 27-84). In general, the Id had developed from birth where Freud stated that the id is a pushing force deeply hidden and ready to drive out motivation. This indicated that the deeply hiding behavior that cannot be observed by any physical contact. The ids of the people are varied depended on family background and environments and when it is something deeply hiding inside so Freud mentioned that if a child had been attaining a good looking after by parents with a good environment then that child when grown up he/she could control the Id better than those without. The well trained behavior could develop the ego later.

Freud argued that, in a healthy person, the ego is the most critical component of the personality. This is because the ego must play a major role in balancing the needs of the individual with those of reality, all the while avoiding offense to the superego. When considering all functions, if either the id or the superego is stronger than the ego, this is what Freud had argued. If the id is stronger, the individual will be impulsive and selfish, seeking out instant gratification. If the superego is too strong, it will not permit flexibility and growth in the individual. Instead, he or she would be driven by a set of rigid morals, making him or her judgmental and inflexible when interacting with others. As a result, ego is an establishment of his or her personality.

Beyond the late 1900s, economists believed in the so-called the "Non-cognitive Skill." From the reasons described earlier, they could be comparable to the items on the non-cognitive skill as well as the Ego and the Superego where the labor forces could manifest when working together with their colleagues. The relationship between the non-cognitive skill and the earning is that the non-cognitive skill determines future earning or the labor market outcome. The incentives and motivations could come from internal and external minded. The internal motivation affects human personality. For example, the poor may possess an incentive minded to

be rich where it reflects personal traits, i.e. diligent, hard worker, whilst those born with the rich families may possess a reverse personality, i.e. seeking for enjoyable life without doing any hard work. With the external incentives, one example is an incentive on rate of salary, long term employment, good reputation and being accepted by the community. These are external incentives where it reflects individual personality traits such as an attitude on social outrage yet some possesses more of private life whilst others having creative thinking in minds in improving their responsible jobs where it defined in the "Ouchi's Theory Z," it is another type of motivation (Sullivan, 1983: 132-133). Both kinds of incentives can boost productivity. Motivation can build the non-cognitive skill. The motivation is one of the additional external forces that led to the changes in the worker's behavior which, in turn, enhances the worker.

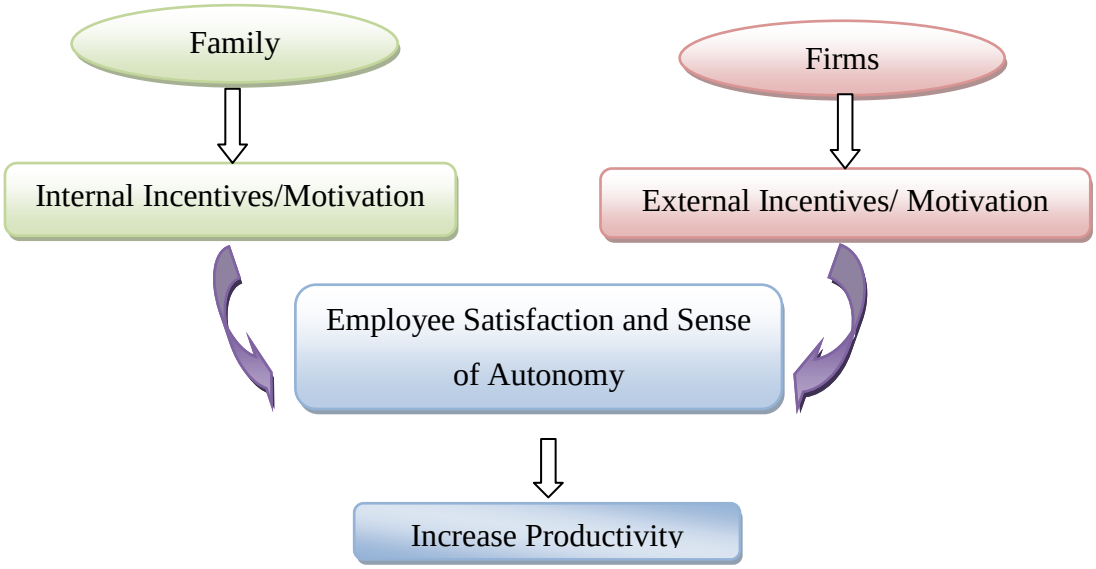

Figure 2.7 Internal and External Motivations (note: adapted from Ouchi's theory Z.)
Source: Sullivan, 1983: 133.

This theory explains more detail in the external motivation concept, both from Japan and the US. Eventually, motivation could increase productivity through worker's personality and behavior in their tasks. Not only is the external incentive explained in theory Z, the family relationship is also involved such as the raising up of

the children. This is a reason for the autonomous workers who have been satisfied and trying to push their efforts in the workplace in order to increase productivity. (Sullivan, 1983: 133).

This study has two hypotheses. One, non-cognitive affects the earnings function indirectly through cognitive skills. Two, non-cognitive traits affect labor market outcome directly. The conceptual frame work of this study is that the non-cognitive skills play their role as a cause, and earnings as an effect. The payment, or the incentive to pay, may lead to an enhanced non-cognitive skill named effort. Eventually, effort might increase an output (Stefanec, 2010: 1-9). This study surveyed what is known about the determinants of individual earnings and drew on a number of recent contributions. The main difference from all previous studies are that those non-cognitive skills employed in the earnings functions are 12 personalities for several non-agriculture occupations.

2.7 Non-cognitive Skills

Family background and what has been going on around someone while he or she is growing can very well shape his or her personality. When he or she participates in the labor market, the innate characters together with their skills acquired from schooling will play significant role in labor market choices and outcomes.

As far as economists are concerned, personality is a non-cognitive skill; while knowledge and work experience are cognitive skills. It has been long advocated by a number of writers that non-cognitive skills are key determinants of professional success. Until recently, economists have put effort in studying the personal characteristics, e.g., persistence, leadership, and sociability, on labor market outcomes. Economists employ the non-cognitive skills as productive factors not being captured by standardized tests or observable measurements of human capital (Heckman and Rubinstein, 2001: 145-149).They are the skills valued by employers or clients that do not involve technical or professional knowledge.

Eventually, both non-cognitive and cognitive skills are of tangible interest to invest with respect to human capital. This investment could be for seen by the family

and school in preparation for an active participation in the labor market. On the job training program are offered by firms including the formation of cognitive skills.

The connections among all standpoints made by the psychologists have come to the point that "motivation" is a base of "behavior." Likewise, Goldsmith, Veum and William Darity (2000: 109-146) stated that motivation is a part of unobserved individual-specific heterogeneity. Nonetheless, some economists and social psychologists have examined the significance of motivation on the consequence of labor market outcomes.

In a short-run period, motivation drives productivity and increases wages. Thus, both motivation and human capital, where both could be measured by schooling, workplace work experience, and academic achievement, are the important determinants of wage earnings. In addition, the evidence has suggested that the impact of human capital accumulation on wages depends on motivation.

Equations 2.1-2.18 have further link to individual payment and wage. Goldsmith, et al. explained wage as a function of marginal product. Individual marginal product is explained by capital and labor. Focusing on labor, worker's productivity comes from their effort. Hence, wages could imply the production function (Equation 2.19). Moreover, motivation, which is embedded in labor force productivity, might be a factor affecting the individual wage. Let human efficiency or *HE* be a motivation variable that conceptually affects labor productivity (Goldsmith et al., 2000: 111-112).

$$HE_i = HE_i(M_i,\ e_i * HC_i) \tag{2.19}$$

where M_i is individual motivation and HC_i is human capital. Human efficiency could be explained by motivation (M_i). Motivation presents an effort (e_i). Therefore, the magnitude of human efficiency (HE_i) can be understood by motivation (M_i) and the multiple of human capital (HC_i) and their effort (e_i) (Equation 2.19).

$$w_i = MP_i(K_j, HE_i) \tag{2.20}$$

Individual wage (w_i) is a function of individual marginal product (MP_i), related to capital in the *j*th firm (K_j) and human efficiency of individual *i* (HE_i).

Equation (2.19) can imply $HE_i = M_i + e_i*HC_i$. After taking differentiation by HC_i and then by M_i, we obtain new meaning in Equation (2.21). The addition of motivation leads to affect effort $\frac{\partial e_i}{\partial M_i}$ implies a positive motivation effect. Finally, the solution is presented in Equation (2.21).

$$\frac{\partial\left[\frac{\partial HE_i}{\partial HC_i}\right]}{\partial M_i} = \frac{\partial e_i}{\partial M_i} > 0 \qquad (2.21)$$

Equation (2.21) states that more human capital leads to the greater effect of motivation on productivity. It implies that $\frac{\partial e_i}{\partial M_i}$ might be a "motivation effect" or "non-cognitive skill effect" hidden in the productivity. The psychology theory and behavior to a concept of human capital is considered. These hypotheses are the points of which non-cognitive traits could influence earnings. All non-cognitive traits were classified by four categories: (1) Mini-marker, (2) Conflict management, (3) Locus of Control, and (4) Self-esteem.

2.7.1 Mini-Marker

Mini-Marker or Big Five personalities are well known for describe human personality. In present-day psychology, the big five factors of personality are five broad dimensions of personality used to describe human personality. The initial model was advanced by Ernest Tupes and Raymond Cristal, based on the work of the U.S. Air Force Personnel Laboratory in the late 1950s. Later, in 1990, J.M. Digman advanced his five-factor model of personality, which Goldberg extended to the highest level of organization (Goldberg, 1993: 26-34).

McCrae and Costa (1996: 51–87, 1999: 139-153); Borghans, Angela and Heckman (2008: 972-1059); Heineck and Anger (2009:535-546) also employed the five personalities to measure the returns from the cognitive abilities and labor market success. Seibert and Kraimer (2001: 1-21) determined the relationship between the big five personality dimensions and career success. They are as follow:

1) Openness is a person who has initiated an idea of inventive thinking. This trait includes innovative and complicated minded where it includes initiative and imaginative thinking thus offering some good philosophy in life. These personality traits do have a positive effect on labor market success (Andrisani, 1978; Andrisani and Nestel, 1976; Blumberg and de Graaf, 2004; Duncan and Morgan, 1981; Dunifon, Duncan and Brooks-Gunn, 2001; Goldsmith, R. and William Darity, 1997; Mulligan, 1996; Osborne-Groves, 2005: quoted in Jackson, 2006:188; Semeijn, GBoone, Velden and Witteloostuijn, 2004).

2) Conscientiousness shows how to behave in a good self-discipline and efficiency. For instance, when working he or she possesses courteousness and provided intensive steps in working for the successful job carried out. The managerial officer has a higher thoughtfulness than the service officer. Moreover, other terms of conscientiousness are known as hardworking, which estimated education attainment as a positive thinking, or a hard worker, where it led to a high attainment in education (Filer, 1986: 412-424; Lleras, 2008: 896).

3) Extraversion is a behavior of persons who prefer to be out-going persons and seek stimulation in the company of others (this personality could cooperate well with other coworkers). This personality performs a high confidential gesture, high in self discipline, high anxiety, outspoken and ready to confront any problem. The managerial group tends to behave like sociability, but lower than the sales group (Filer, 1986: 418).

4) Agreeableness represents a trait of friendliness and compassion rather than suspicious towards others. This trait possesses readiness in helping others, encourage and give inspiration with politeness. Filer (1986: 418) estimated the non-cognitive skill on the probability of entering the occupational group. As a result, managerial occupation has a higher agreeableness or friendliness than sales and clericals. Nonetheless, they have a degree of friendliness lower than the service officers (Filer, 1986: 412-424).

5) Neuroticism is the behavior of a sensitive person who is always angered and anxious. This type of traits possesses moody gesture, e.g. he or she always has a wondering eye, uses a crazy word, yell at people due to unstable minded so perform a moody gesture, not happy to see other people attained a better performance or

otherwise envy. To look for persons who belong to this trait, researcher must provide some opposite ideas, e.g. whether he or she is a person who could easily create a bad temper then a question to be used should opposite to his or her temper. To cross check these behaviors, a psychologist has to set a question in opposite meaning. For instance, openness comprises of both initiate and conservative (the score would have been reversed). Filer (1986:418) also indicated that emotional stability (opposite to neuroticism) has been embedded in managerial staff, rather than sales and blue-collars.

Researchers have proved that there are five personality traits related to individual earning. They are as those summarized items from the work of Seibert and Kraimer (2001: 1-21). They were later comparable to the nine-year works of Heineck and Anger (2009: 7) (see table 2.1).

Table 2.1 Big-Five Personality and Labor Market Earnings

Big-five personality	**Seibert and Kraimer (2001)**	**Heineck and Anger (2009)***	
		Female	**Male**
Openness	Negative to salary level	Positive to hourly wage	Negative to hourly wage
Conscientiousness	Not significant	Not significant	Positive to hourly wage
Agreeableness	Negative to career satisfaction	Negative to hourly wage	Negative to hourly wage
Extraversion	Positive to salary level, promotion, and career satisfaction	Not significant	Positive to hourly wage
Neuroticism	Negative to career satisfaction	Not significant	Not significant

** This study segregated by gender,male and female.*

Moreover, Heineck and Anger (2009: 535-546) also tested the same tools with panel data (Socio-Economic Panel Study: SOEP, 1991-2006) and found that the big-five on agreeableness is still significant.

2.7.2 Conflict Management, among different opinions of staff in the organization, since when it is just the case of not seeing things the same way, this could lead to some conflicts, such as between bosses, staff and among team staff, family conflicts, conflicts of interest. Conflict is a situation that no one can avoid. To find a conflict resolution, one can use one or more of these five available methods (Feltner and Goodsell, 1972: 694).

1) Withdrawing is to refrain from conflicting action, rather than to dissent and perhaps be forced to retreat later. The way of this result is "lose-lose."

2) Forcing is the way to solve the problem by a "win-lose" situation. The outcome is usually dependent on the relative strengths of the parties in the conflict.

3) Smoothing addresses that what might result in the conflict. It is better not to discuss. Differences are better. It is played down or is a "lose-win" situation.

4) Compromising is the bargaining result in an intermediate position with the satisfaction that half is better than none or "fifty-fifty" benefits.

5) Confronting is a brain storming process by an open exchange about the situation. Therefore, both parties can win or get satisfaction (Burke, 1970 quoted in Feltner and Goodsell 1972:694). Not only Burke, but also Bennis (1969: 1-87) and Beckhard (1969: 1-119) stressed win/win problem-solving as a basic technique in organizational development.

2.7.3 Locus of Control is refers to an individual's generalized expectations regarding where control over consequent events resides. Originated by Rotter (1966), it is grounded in expectancy-value theory, which describes human behavior as determined by the supposed likelihood of an event or outcome. (Rotter, 1966: 1-28).

Gurin, Gurin and Morrison (1978: 275-296) developed the twenty-three questions and some of the psychological personalities to make a solid explanation on

internal and external control. Two perspectives of the control, named the "Internal Locus of Control," is the present personality.

1) **Internal Locus of Control** : People's misfortunes results from the mistakes they make.

2) **External Locus of Control**: Many of the unhappy things in people's lives are partly due to bad luck.

Gurin et al.(1978: 278-279) and Bowles et al. (2001: 1163) summarized all economists who employ the locus of control in the role of the independence that affected the log wage. They included Andrisani J. and Nestel (1976: 156-165); Andrisani P.(1978); Duncan and Morgan (1981: 649-657); and Osborne and Melisa (2000). All presented the same result of the negative effects of the external locus of control to determine the log wage. Flossman and Piatek (2007: 2-3) developed a psychological test from 46 original questions and condensed them into just 10 questions. This is close to the internal locus of control, 3 questions. Another external locus of control has four levels of scale.

This study employs 23 questions with a six-scale level, as shown later in Chapter 3. However, it employs previous work (Gurin et al.(1978: 278-279). Hence, the score was interpreted into the internal locus of control. According to Table 2.1, Heineck and Anger (2009: 8) used external locus of control in their studies.

A lot of economists and psychologists have always employed the locus of control as a proxy of personality. In other words, the locus of control is one of the permanent traits, rather than a big-five (which can change over time).

2.7.4 Self-esteem

Baumeister, et al. addressed that occupational success may enhance self-esteem rather than the reverse. Alternatively, self-esteem may be helpful only in some job contexts. Therefore, self-esteem causes good task performance, with the important exception that high self-esteem facilitates persistence after failure. The case of leadership does not stem directly from self-esteem but self-esteem may have indirect effects on leadership, see Figure 2.8 (Baumeister et al., 2003: 1).

Baumeister et al. (2003: 1-44) presented the positives of self-esteem and too high self-esteem, which seems to lead to narcissists. They are charming at first, but

tend to alienate others eventually. On the other hand, low self-esteem may tend to externalizing behavior.

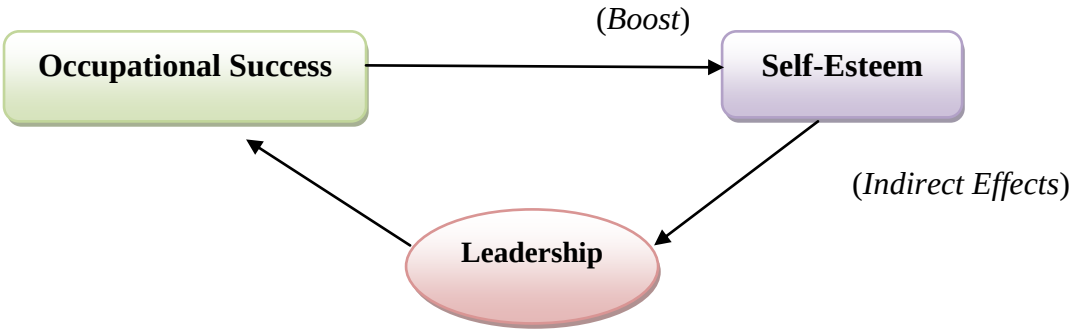

Figure 2.8 Leadership
Source: Baumeister et al., 2003.

With the data set of the National Longitudinal Survey of Youth (NLSY), that the effect of self-esteem on wage was statistically significant to the log wage at 0.062 (6.2 percent of wage), with controls including schooling, intelligence tests, and background characteristics (Murname et al. quoted Bowles et al., 2001: 1163).

All non-cognitive skills were identified as a proxy of human efficiency, which, in turn, improves worker's productivity. The popular locus of control and other personalities were employed in this study subject to occupation and gender in the earnings model. The non-cognitive skills might have different meaning in different genders and occupations.

Behaviors of personnel in various organizations lead to different traditions in public, private, or even the same type of organization in distinct geographical areas. Geert Hofsted's study proposed indicators measuring variety of organizational traditions consisting of the followings.

1) Power Distance Index (PDI) measures inequality between employers and employees like feudalism or class system in organizations.

2) Individualism (IDV) reflects notion of staffs in organizations that they are extroverts or introverts.

3) Masculinity (MAS) mentions parity between males and females in advancement in employment.

4) Uncertainty Avoidance (UAI) looks through regulation commitment, which is performance base (avoid high risk), or on the other hand emphasizes relationship among staffs more than regulation (avoid low risk).

5) Long-Term Orientation (LTO) is the degree of maintaining relationship among staffs, evaluating their performance objectively so it has to be long-term to build confidence. But if they have known others, this relationship is more sustainable than short-term orientation where staffs have superficial connection as one saying that there is no true friend and perpetual enemy.[10]

Regarding to researches in Thailand most of them use the personalities wanted by employers. These personalities are not presented in term of effects of non-cognitive skill on earnings. Direk Pattamasiriwat and Tuosup (1991: 41-70) employed the Mincerian earnings function using years of schooling, years of work experience, firm size, occupation category (private or public sector), migration, and gender. They reported that income would decline after age 55. There might be some unexplainable factors such as less effort and less diligent that decline after 55 years old. The decline in income may caused by declining effort and non-cognitive skills among older worker.

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[10] see http://www.geert-hofstede.com/

CHAPTER 3

DATA AND STATISTICAL FRAMEWORK

3.1 Data and Sample Size Selection

3.1.1 Data

For this study, the data collection was obtained from a field survey where the sampling populations were derived from a sector of non-agricultural workers within the urban area of the Mueang District, Khonkaen Province, and Northeast Thailand. Some of them have been collected by the Nation Statistical Organization carried out during 2008. The samples were randomly selected base on a stratified randomized sampling technique, where a large number of documented questionnaire sets were used. This comprises cognitive ability, demographic data, socio-economic data, and non-cognitive factors.

1) Population of Mueang District and the Vicinity of Khonkaen Province

It may be of interest to clarify why the Mueang district of Khonkaen Province was chosen for this investigation. The important reason for this respect is generally known among the Thai people as the city of Khonkaen. It is supposed to be the capital city of the northeastern region of Thailand for many decades. The province is located, more or less, in the central area of Northeast Thailand. Furthermore, this province is well facilitated with air and inland transportation. The Khonkaen Province alone is a large area where the numbers of people rank second after the population of Nakhon Ratchasima Province (Figure 3.1).

The figure illustrates the names of the 19 provinces of the region in terms of the population. Nakhon Ratchasima ranks the highest and Mukdahan ranks the lowest.

Figure 3.1 shows the number of the population (age of population between 15-59 years) in 19 provinces in North East Regional. Khonkaen is the second ranking (maximum is Nakhon Ratchasima). Khonkaen has a cluster population in the non-municipal area, rather than the municipal one. Gender in Khonkaen province is quite equal in number between males and females (Table 3.1 and Figure 3.2).

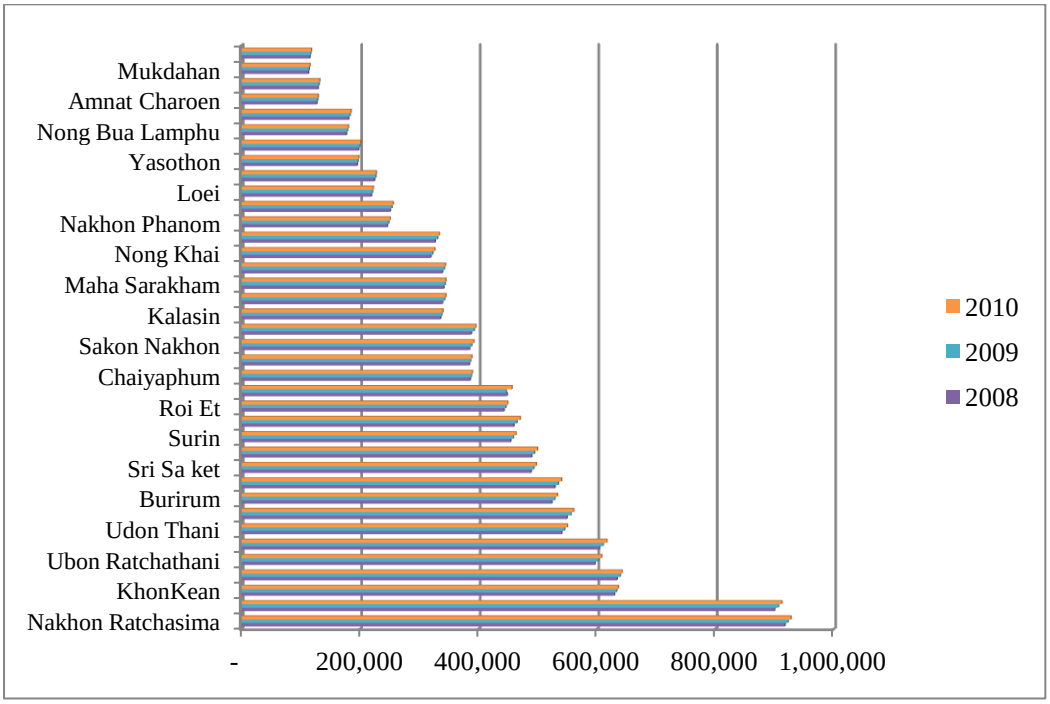

Figure 3.1 The 19 provinces of Northeast Thailand
Source: National Statistics Office of Thailand, 2008.

To attain a clearer image of the population of the Khonkaen Province in terms of structural composition, both males and females recorded in 2008 are presented in Figure 3.2 and Table 3.1. It revealed that the grand total of the population of Khonkaen Province reached a figure of 1756,101 individuals. Out of this figure there were 871,047 and 885,054 individuals of males and females, respectively. The numbers of male individuals was slightly less than females. The majority of the population belonged to the non-municipal area, followed by the Muang District, and the municipal area, but not within the vicinity of the Muang District with numbers of 382,156 and 172,326 individuals, respectively.

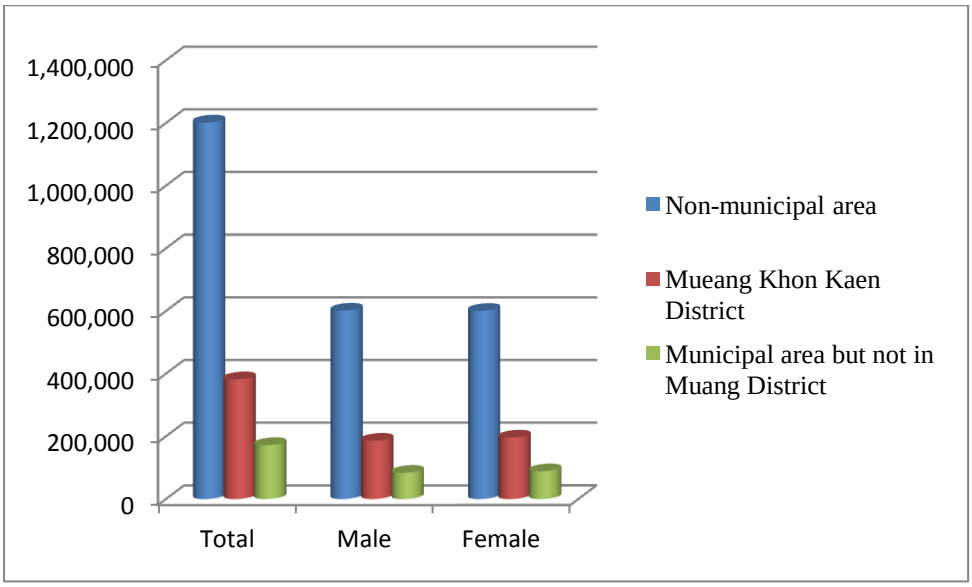

Figure 3.2 Population in Khonkaen Province, 2008.
Source: National Statistics Office of Thailand, 2008.

Table 3.1 Number of population in Khonkaen province in 2008.

Area	Total	Male	Female
Non-municipal area	1,201,619	601,199	600,420
Mueang Khonkaen District	382,156	186,057	196,099
Municipal area but not in Mueang District	172,326	83,791	88,535

Source: National Statistics Office of Thailand, 2008

When it comes to labor forces in the market, it is revealed that Khonkaen Province had a large number of labor forces, with their ages ranging from 15-59 years of age (approximately 400,000 individuals), followed by those at the age below 15 years. The smallest group was those above 60 years of age (Figure 3.3). This trend was found with a number of labor forces those belonged to the non-

municipal and Muang Khonkaen District alone, i.e., it excluded the municipal area of the Muang District. It is shown that those attained the ages lesser than 15 years possessed a similar trend to those labor forces at the age exceeding 60 years old.

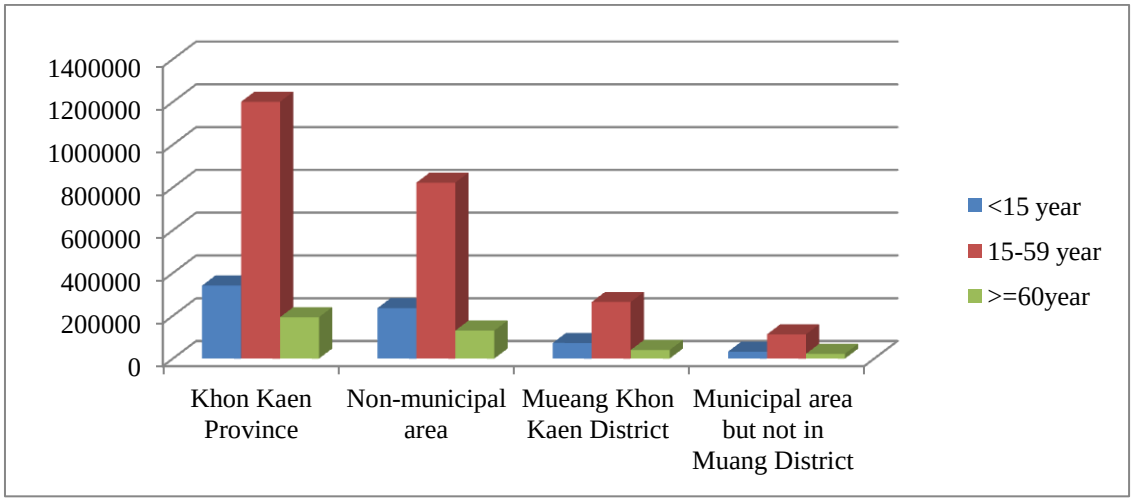

Figure 3.3 Labor Force in Khonkaen, 2008.
Source: National Statistics Office of Thailand, 2008.

Notice that the labor force in the market is a maximum number (15-59 years) (Figure 3.3). Consider the number of the labor force. It is about 400,000 persons who register in their household, however, labor in this province also come from other provinces in this region (Table 3.2). However, this province is comprised of people who are possibly in the labor force and participate in the labor market in several occupations.

1) Occupation

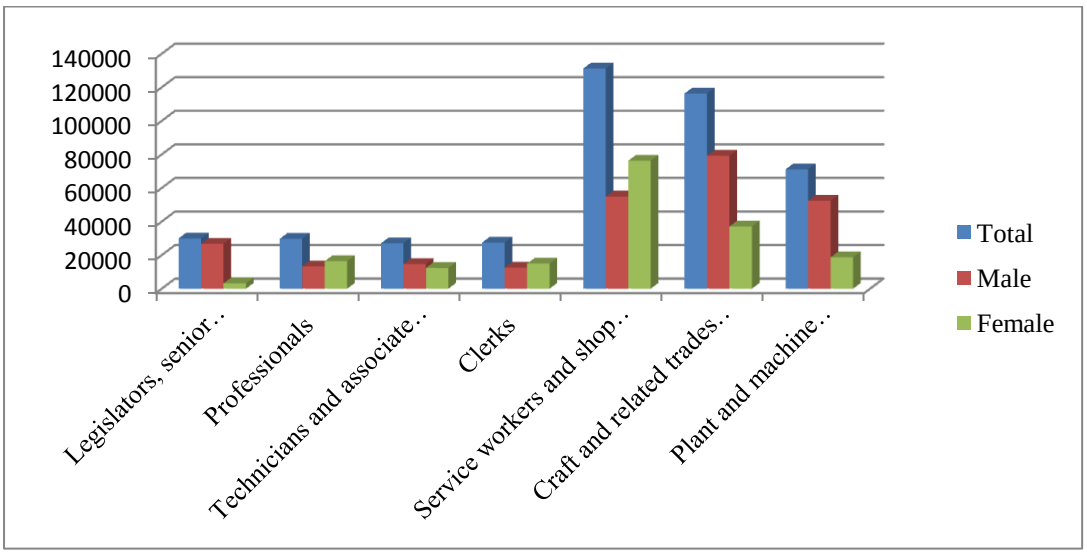

Figure 3.4 Occupational (Non-Agriculture Sector), 2008.
Source: The National Statistics Office. Khonkaen Province, 2008.

Table 3.2 illustrates the number of labor forces in 8 categories. The total number of the labor force is about 899,265, which compares with the population in the Mueang District in 2008 (Table 3.1), which is 382,156. Around 42.50 percent of the total populations are in the labor force in the non-agricultural sector.

Table 3.2 Occupation Category in Khonkaen Province in 2008.

Occupation	Total	Male	Female
Senior Officials and Managers	29,951	26,735	3,216
Professionals	29,734	13,322	16,412
Technicians and Associate Professionals	27,055	14,708	12,347
Clerks	27,497	12,557	14,940
Shop Attendants Workers	131,232	54,963	76,269

Table 3.2 (Continued)

Occupation	Total	Male	Female
Skilled Agricultural and fishery workers*	350,553	199,387	151,165
Craft and Related Trades Workers	116,320	79,225	37,095
Plant and Machine Operators and Assemblers	71,174	52,487	8,687
Elementary Occupations	145,700	81,035	64,665
Total	899,265	507,684	381,580

Note: * is Agriculture sector, outside frame of this study

2) Education

The Office of Khonkaen Province presents the number of schools, both public and private schools (Table 3.3). The Mueang district is the center of the academic institute, especially private schools (60.8% of total). Even though it is a lower number, 18.6%, of public schools, this number includes Khonkaen University (KKU). KKU is a huge education producing organization. Most of the students come from the North East region of Thailand.

Table 3.3 Number of School

Area	Public School	Private School
Mueang District	133	56
Khonkaen Province (total)	715	92
%of Total	18.6	60.8

Source: National Statistics Office of Thailand, 2008

3) Gross Provincial Product

Gross Provincial Product (GPP) in Khonkaen is presented in Figure 3.5. Data comes from the industry sector and the retail, wholesale, agricultural, and educational sectors.

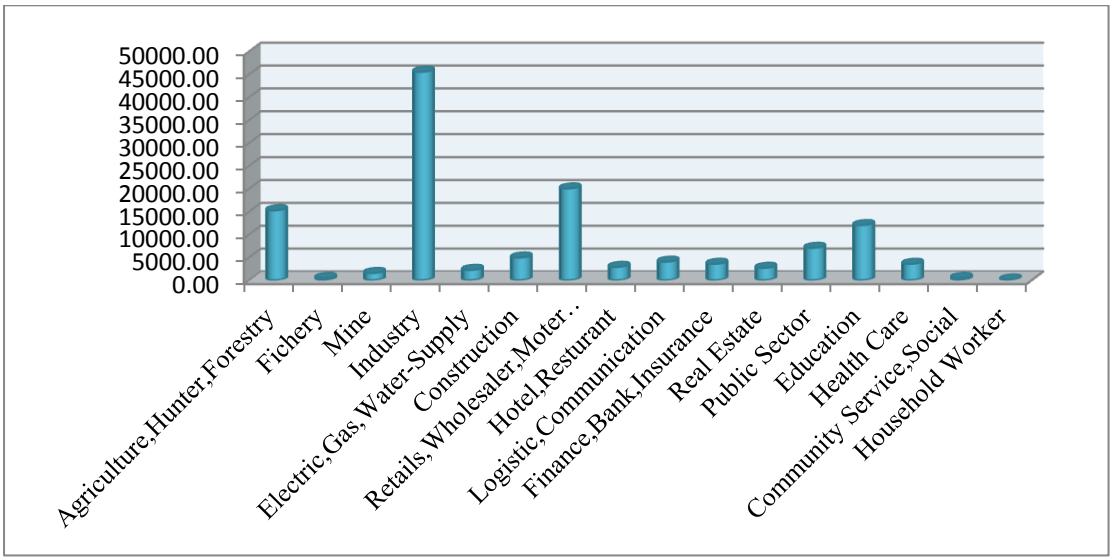

Figure 3.5 Gross Provincial Products, Khonkaen Province, 2007.
Source: Khonkaen Province, 2007**.**

3.1.2 Sampling Selection

The stratified random sampling is employed base on the International Standard Classification of Occupations (ISCO). From the number of total workers, outside agriculture sector from Khonkaen provinces in 2008 are 441,262 of the population. The samples are 613 observations and come from employed persons aged 15 years by occupation (non-agricultural workers in year 2008 is 441,262 persons). With a maximum ratio of the proportional p, q (value 0.5) and with a level of .05 of the standard error and with a .05 level of significance.

$$n = \frac{pqZ^2}{E^2},$$

Where: n is sample size

p is proportion of target population (outside agriculture sector)

q is proportion of other (agriculture sector)

Z is Z-statistical at .05 significant level(value 1.96)

E is a standard error at level .05

Table 3.4 Occupation by Gender

Occupations	Total	Male	Female
1. Senior Officials and Managers	80	50	30
2.Professionals	70	36	34
3.Technicians and Associate Professionals	64	32	32
4.Clerks	60	22	38
5.Shop Attendants	129	55	74
6.Craft and Related Trades Workers assemblers	116	68	48
7.Plant and Machine Operators and Assemblers	94	63	31
Total	**613**	**326**	**287**

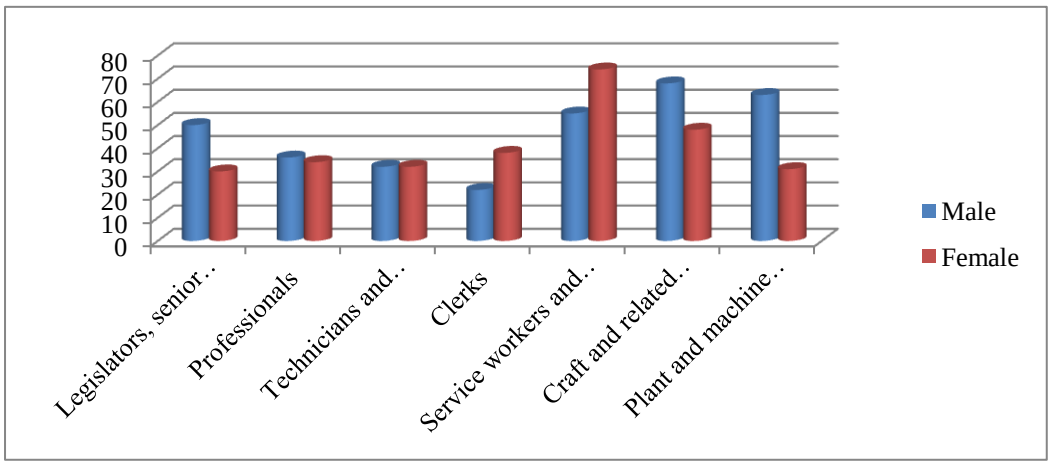

Figure 3.6 Sample Size

Source: The National Statistics Office, Khonkaen Province, Thailand, 2008

Due to limitations of Thailand data collection, the National Statistics Office or other government offices do not have population data, which show any psychological data, such as behavioral test score, for example the locus of control score and self esteem score. Therefore, this study has to survey from primary data in Muaeng district in Khonkaen province.

Unlike many foreign countries in different regions of the world, say, United States of America where wealth of data have been ready available is including data on psychology. Labor Force Survey (LFS) in Thailand has no data showing any level of psychology, which is different from the Panel Study of the Income Dynamic (PSID). PSID families include 9,000 U.S. families. Following the same family and individuals since 1968, the PSID collects data on economic, health and social behavior. Moreover, the Child Development Supplement (CDS) focuses on the children and caregivers within PSID families, collecting information on health, education, cognitive and behavioral development, and time use. Therefore, this study was designed to collect data by field surveys from the cross sectional data (2008).

In this study, two methods (weighted least squares: WLS and two stage least square: 2SLS) are used to find the reasons for any arguments that the cognitive skill and non-cognitive skill can explain earning functions of labor markets. Firstly, weighted least squares (WLS) is used for cognitive and non-cognitive skills in the earnings function. When non-cognitive skills are added into the model the likelihood that they would affect the earnings directly and indirectly effects will be captured technically by the WLS and 2SLS techniques, respectively.

Likewise, Blinder (1973: 436-455); Bound and Gary(1999: 169-182) treat the “endogeneity” of schooling with instrument variables. Secondly, the decomposition technique decomposes the un-explanation term from the earning equations.

3.2 Conceptual Framework

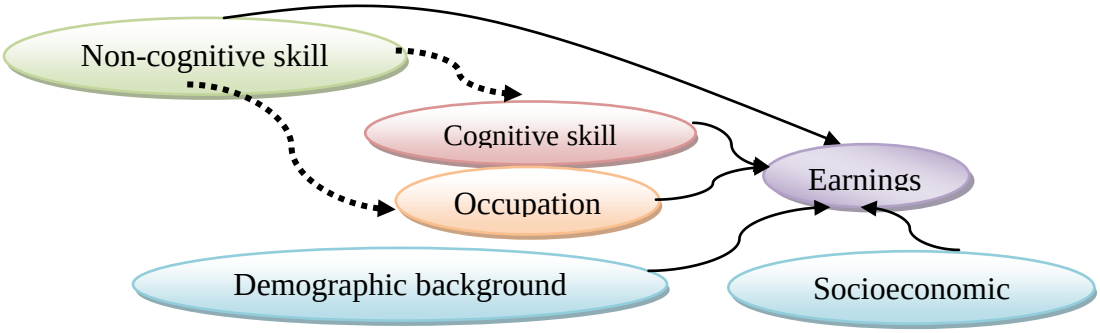

Figure 3.7 Conceptual Framework

With the reference to human capital and psychological concepts being the underlying framework, the earnings function that relates to cognitive skills, occupations, and demographic backgrounds will serve as a base case. Non-cognitive skills are another independent variable important to earnings, both directly and indirectly. Moreover, in terms of a specific need in each occupation type, non-cognitive traits have played different roles in different occupations (Figure 3.7).

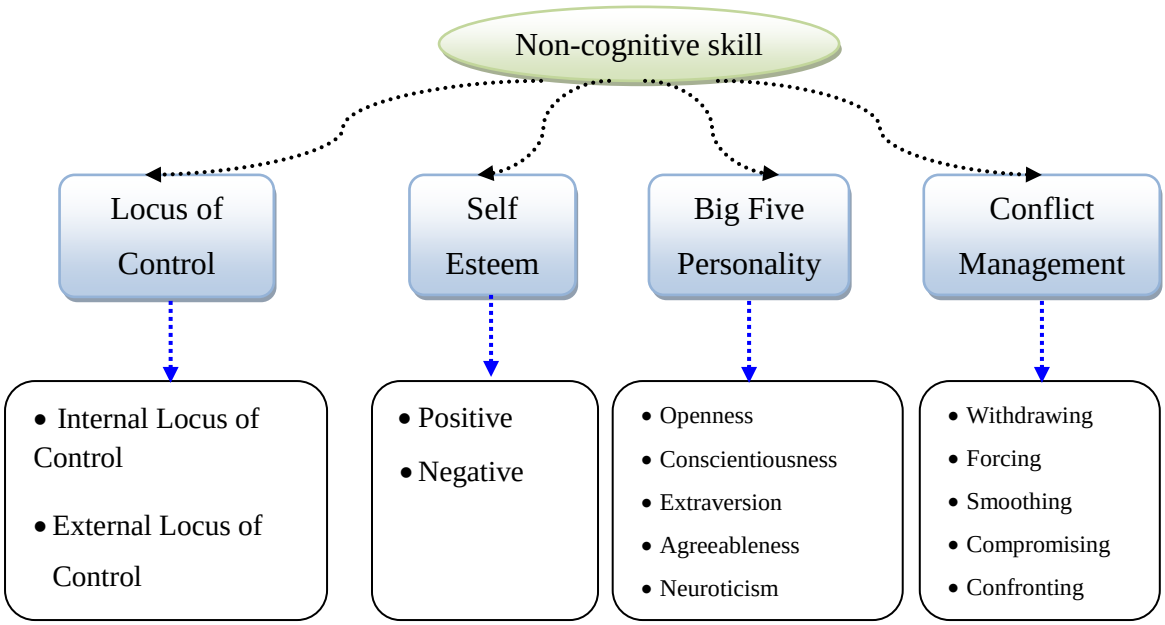

Figure 3.8 Non-cognitive Traits

Non-cognitive skills will be measured through a set of proxies described by Rotter (1990) (i.e. internal and external locus of control and the five-factor model of personality (i.e. 40 personalities traits) (Saucier, 1994 quoted in Seibert and Kraimer 2001:8).

As shown in figure 3.8 the internalized thinking represent by internal locus of control while externalized thinking represent by the external locus of control together they become the locus of control. Self-esteem is another perspective to describe by optimist and pessimist personalities. A big-five personality might be a separate person with five characteristics represent by 1) openness, 2) conscientiousness, 3) extraversion, 4) agreeableness, and 5) neuroticism. Normally, just one character is defined in negative behavior, neuroticism. However, in the concept of occupational specific, negative behavior might be important to some occupations. Likewise, the conflict management characteristic has a positive (confronting and compromising), semi-positive (win-lose and lose-win), and negative (lose-lose) solution.

Cognitive skills of interest in this study are: knowledge being measured by year of schooling, work experience, training hour, and language (Figure 3.9). The cognitive skill being used included the English language, mathematics, aptitude and ability, abstract or mechanical reasoning, knowledge on academic subjects, and measurement of rote memory. The non-cognitive skills included conscientious work habits, effort, other behaviors and traits, leadership, sociability (extraversion), self-confidence, social sensitivity, impulsiveness, openness to work experience, emotional stability (calmness), vigor, aggressiveness, disruptiveness, high culture, Locus of Control, and self-esteem (Farkas, 2003: 544).

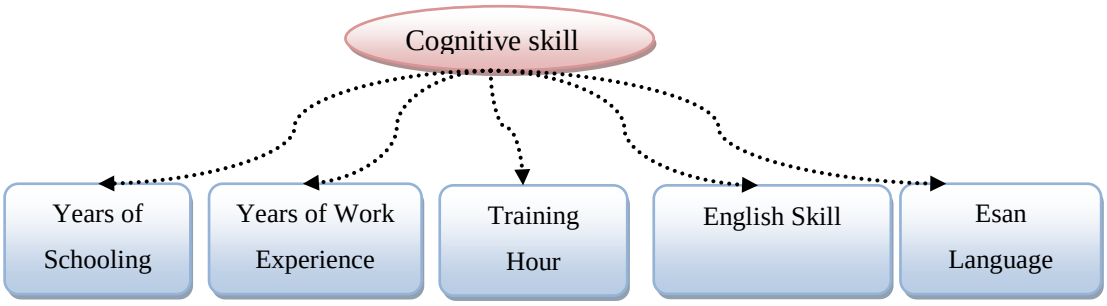

Figure 3.9 Cognitive Variables

The category of occupation for this study is the focus on non-agriculture. Figure 3.10 present seven categories: 1) Legislator, Senior Officer, and Manager, 2) professionals, 3) Technicians and Associate Professionals, 4) Clerks, 5) Shop Attendants, 6) Craft and Related Trades Workers, and 7) Plant and Machine Operators and Assemblers. These types of occupation are segmented by International Standard Classification Occupations (ISCO), for this study agriculture sector is excluded.

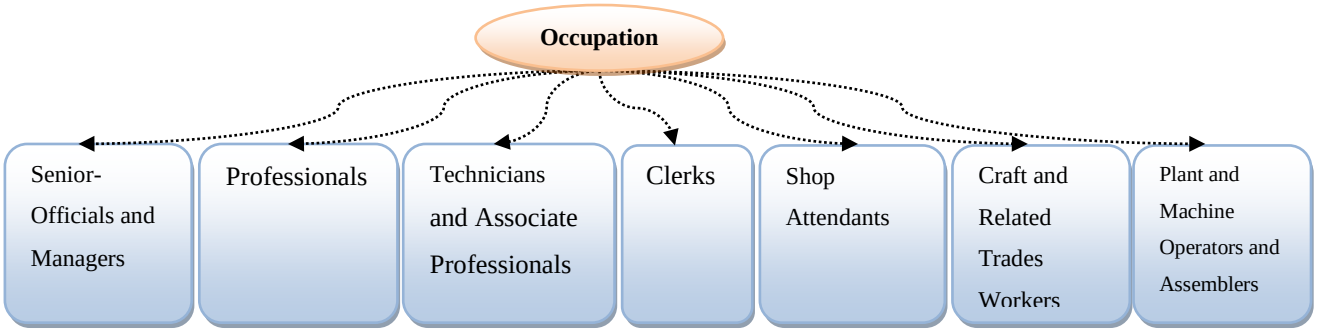

Figure 3.10 Occupations

Demographic and socioeconomic backgrounds are comprised of: 1) period of living in Khonkaen, 2) parent's years of schooling, 3) gender, and 4) firm size (Figure 3.11).

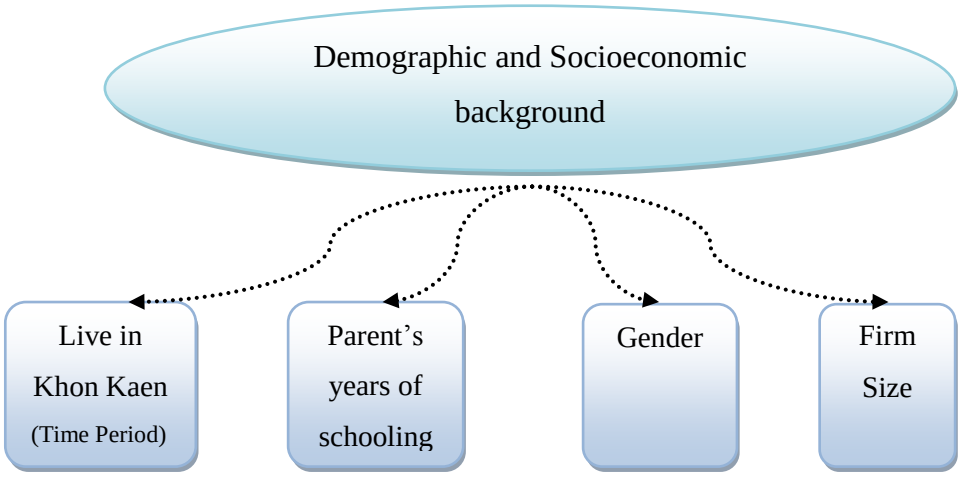

Figure 3.11 Demographic and Socioeconomic Factors

3.3 The Statistical Model

In general, the year of schooling or education attainment has long been recognized as good instrument for education to the extent that it allows for the estimation of the causal effect of education on earnings (Bound and Jaeger, 1996: 7-11; Kling, 1999: 1-35). In addition to this study, the cross sectional data, the equations are the set based on both Mincer earnings and Heckman with clearer prospects in terms of non-cognitive skills as follows:

$$\ln W = \alpha + \beta_i X_i + \varepsilon \qquad (i=1,2,3,\ldots 5),$$

where: $\ln Wage$ is a natural log of wage, $\mathbf{X_1}$ is of years of schooling (represent cognitive skills), $\mathbf{X_2}$ is years of work experience and its square, $\mathbf{X_3}$ is a set of demographic factors, $\mathbf{X_4}$ is a socioeconomic factor, and $\mathbf{X_5}$ is a set of non-cognitive variables (namely the big five personalities, Locus of Control, self-esteem, and conflict management) then,

$$E = f_1(Cog, OCC, DEB, SEB, Ill) \qquad (3.1)$$

$$E = f_2(Cog, OCC, DEB, SEB, Ill, NC) \qquad (3.2)$$

$$Cog = f_3(NC) \qquad (3.3)$$

3.3.1 Earning Equations

Earning (*E*) is a result from worker's cognitive skills (*Cog*), occupation category (*OCC*), demographic background (*DEB*), socioeconomic background (*SEB*), and Illness (Ill). Equation (3.1) is a model of the base case. The non-cognitive variables (*NC*) could be another explanation factor. Hence, Equation (3.2) could solve a new assumption. However, this study has two ways of analysis. First, employ WLS in Equations (3.4) with out NC and (3.5) with NC (N_{12}).

Second are two stage least squares, due to non-cognitive play of the role behind the cognitive ability (use years of schooling as an endogenous variable and non-cognitive skill as instrumental variables). See model (3.3), use for years of schooling as a proxy of cognitive skills in 2SLS (Equation 3.7, 3.9 results present in chapter 4).

$$lnE = \alpha_1 + \sum_{i=1}^{10} \beta_i X_i + \sum_{j=2}^{7} \tau_j O_j + \theta Z + U_1 \quad (3.4)$$

$$lnE = \alpha_2 + \sum_{i=1}^{10} \beta_i' X_i + \sum_{j=2}^{7} \tau_j' O_j + \theta' Z + \delta N_{12} + U_2 \quad (3.5)$$

$$ln\, E = \alpha_3 + \sum_{i=1}^{10} \beta_i'' X_i + \sum_{j=2}^{7} \tau_j'' O_j + \theta'' Z\, U_3 \quad (3.6)$$

$$X_1 = \alpha_3' + \delta' N_{12} + U_3' \quad (3.7)$$

$$ln\, E = \alpha_4 + \sum_{i=1}^{10} \beta_i''' X_i + \sum_{j=2}^{7} \tau_j''' O_j + \theta''' Z + U_4 \quad (3.8)$$

$$X_1 = \alpha_4' + \sum_{t=1}^{12} \delta'' N_t + U_4' \quad (3.9)$$

Where: E is the earnings (wage and other income); β_i is a vector of coefficients; and Cog represents the years of schooling and demographic background, O_j are the category of occupations, and N_i are the non-cognitive variables, as follows:

3.3.2 Earning Equations by Occupation

In order to find out whether in each occupation which *NC* affects income, we use WLS (weighted by years of schooling) shown in equation 3.10

$$ln\, E_{OCC_n} = \alpha_5 + \sum_{i=1}^{11} \mu X_i + \sum_{j=2}^{7} \sigma O_j + \rho Z + \sum_{t=1}^{12} \varphi N_t + U_5 \quad (3.10)$$

OCC_n are occupation categories n = 1,2,3…,7

X_i are cognitive and demographic variables those show in Table 3.5, 3.6

3.3.3 Earnings Equation with Interaction between gender and others

In order to find out income difference in each type of firms and genders, dummy variables are shown as follows:

$$\ln E = a_o + a_1 D_1 + a_2 D_2 + a_3 D_3 + a_4 D_1 D_2 + a_5 D_1 D_3 + a_6 D_4 + a_7 D_5 + a_8 D_6 + a_9 D_{7i} + a_{10} D_{8i} + a_{11} Ysch + a_{12} Yex + a_{13} Yex^2 + a_{14} Fsch + a_{15} Msch + a_{16} Eng + a_{17} Esan + a_{18} Ill + u \quad (3.11)$$

Where

*D*1 = 1 if an observed worker is a male,
0 otherwise (i.e., Female)

$D2$	= 1 if an observed worker works for a state enterprise, 0 otherwise (i.e., non-enterprise)
$D3$	= 1 if an observed worker works for a private organization, 0 otherwise (i.e., non-private Sector)
$D4$	= 1 if an observed worker is graduated at primary school level, 0 otherwise
$D5$	= 1 if an observed worker is graduated at secondary school level, 0 otherwise
$D6$	= 1 if an observed worker is graduated at bachelor level, 0 otherwise
$D7_i$	i=1 if an observed worker's marital status is single $i=2$ if an observed worker's marital status is married $i=2$ if an observed worker's marital status is divorced $i=2$ if an observed worker's marital status is legally separated $i=2$ if an observed worker's marital status is widowed
$D8_i$	$i=1$ if an observed parent's marital status is married $i=2$ if an observed parent's marital status is separated $i=3$ if an observed parent's marital status is divorced $i=4$ if an observed parent's marital status is father deceased $i=5$ if an observed parent's marital status is mother deceased $i=6$ if an observed parent's marital status is both father and mother are deceased
Ysch	is number of years of schooling
Yex	is number of years of work experience
Yex^2	is years of work experience square
Fsch	is father years of schooling
Msch	is mother years of schooling
Eng	is English skill
Esan	is Esan language skill
Ill	is illness

3.3.4 Other Variables

1) Socioeconomics variables

The dataset contains worker's occupations categorized according to the International Standard Classification Occupation (ISCO). It should be noted that the grouping here are slightly different from a study by Filer (1986: 415) that were comprised of 5 categories: 1) Professional, Technical, and Managerial, 2) Clerical, 3) Sales, 4) Service, and 5) Blue collar workers.

However, this study is comprised of 7 occupations separated by ISCO (non-agricultural sector). A series of dummy variables represents:

OCC1	is Senior Officials and Managers
OCC 2	is Professionals
OCC 3	is Technicians and Associate Professionals
OCC 4	is Clerks
OCC 5	is Shop attendants
OCC 6	is Craft and Related Trades Workers
OCC 7	is Plant and Machine Operators and Assemblers

The expected sign of all occupations depends on the base case. If we set *OCC1* as a base case, then another occupation might be a negative sign; earnings are lower than the base case (*OCC1*).

2) Illness

Illness is a proxy for good health. Frequency of work absent due to illness can be a measurement for illness.

Table 3.5 Effects of Cognitive Variables

Variable	Expected sign related to earnings
Number of schooling year (X_1)	Positive
Number of work experience year at present occupation and previous work (X_2).	Positive
Quadratic form of work experience (X_3).	Negative
Training hour (X_4).	Positive
Level of capacity to speaking, listening, reading, and writing in English language (X_5).	Positive
Level of capacity to speaking and listening in rural language,Northeastern or "Esan" (X_6)	Positive or Negative Depend on occupation category

Table 3.6 Effects of Demographic Variables

Variable	Expected sign related to earnings
Male is dummy variable equal to one if a worker is male (X_7)	Positive
Number of father's year of schooling (X_8)	Positive
Number of mother's year of schooling (X_9)	Positive
A period of year that worker live in Khonkaen province (X_{10})	Positive
Level of illness that reduces productivity (X_{11})	Negative

Note : Age is not occur in the model due to age is a number embedded in work experience year. Total work experience year = Age – 6 years before school – 12 years in school.

3) Non-cognitive Variables

Non-cognitive skills can measured through all personalities, such as Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism, Withdrawing, Forcing, Smoothing, Confronting, Compromising, Self-esteem, Locus of Control, and the frequency of conflict in the firm. All NC have 12 personality traits from 4 groups

1. Mini-marker

N_1 = Openness

N_2 = Conscientiousness

N_3 = Extraversion

N_4 = Agreeableness

N_5 = Neuroticism

2. Conflict Management

N_6 = Withdrawing

N_7 = Forcing

N_8 = Smoothing

N_9 = Compromising

N_{10} = Confronting

3. Self-esteem

N_{11} = Self-esteem

4. Locus of control

N_{12} = Locus of Control

For my empirical analysis, I have surveyed field work with observations by questionnaires which are comprised of two sections. The first section relates to socioeconomic background and the second deals with psychological attitudes—the study of a group of non-cognitive skills. People express their opinion about different statements dealing with work experience towards working life such as openness, extraversion, agreeableness, conscientiousness and neuroticism. Moreover, they have to answer about their behavior to some conflict situations statements, Locus of Control and self-esteem.

For each psychological question, they had to say whether they felt “Extremely accurate” (6 point), “Accurate” (5 point) “Quite Accurate” (4 point), “Quite Inaccurate” (3 point), “Inaccurate” (2 point), or “Extremely Inaccurate” (1 point).

The set of the Likert scale, as above, is employed in every statement, except conflict management behavior. In the conflict behavior, I employ six levels in terms of how often they behave like this, “Always” (6 point), “Often” (5 point), “Quite Often” (4 point), “Quite few” (3 point) “Few” (2 point), and “Never” (1 point) (Likert, 1932: 1-55).

The variables employed in my analysis are based on three perspectives: 1. Locus of Control by Rotter (1966: 1028), 2. Mini-markers by Saucier (1994: 506-516), 3. self-esteem by Deckers (2005).

The measure of labor productivity and the proxies specified for cognitive and non-cognitive skill schooling and adult health are first caused. The functional relationships between human capital and wages are then described. Three types of estimation problems are discussed: (1) bias due to omitted variables, such as ability or frailty; (2) bias due to the measurement of an aggregation of multiple sources of human capital, e.g., genetic and socially reproducible variation, which may contribute to different gains in worker productivity; and (3) errors in the measurement of human capital stocks. Empirical examples and illustrative estimates are surveyed.

3.3.5 Gender Discrimination

Gender difference leads to earnings difference. In other words it is a gender discrimination existing in the labor market. Sanborn found that the female/male annual income ratio is less than 1 (.58). In contrasts, the female’s wage is less than the male’s wage (Sanborn Henry, 1964: 534-550). Regression shows residual term or unexplained term. The residual difference was 0.13 or about 18% of the total difference. The unexplained term or discrimination is named by economists. Later, Fuchs (1971: 9-15) adjusted the ratio by adding color, schooling, age, and city size. It turned out that the ratio still presented a residual of 77 percent of the total difference. At present, methodology to decompose the wage gap was invented in 1973. This study employ the decomposition method of Oaxaca-Blinder (OB) decomposition method (Blinder, 1973: 436-455; Oaxaca, 1973: 693-709). To estimate the amount of any pay disparity due to differences

in returns to the level of characteristics, such as different occupations, genders, cognitive skills, and non-cognitive skills.

The original measure of discrimination against females is said to exist whenever the relative wage of males exceeds the relative wage that prevail if males and females were paid according to the same criteria, for instance, the same occupation. Formally a discrimination coefficient (D) is created as a measure for discrimination and is expressed as:

$$D = \frac{W_m/W_f - (W_m/W_f)^0}{(W_m/W_f)^0}, \text{ where}$$

W_m/W_f is the observed male-female wage ratio and $(W_m/W_f)^0$ is the male-female wage ratio in the absence of discrimination by taking natural logarithms, it becomes

$$\ln(D+1) = \ln(W_m/W_f) - \ln(W_m/W_f)^0 \qquad (3.12)$$

under the assumption of employer discrimination, the labor market adheres to the principles of cost minimization.

$$\left[\frac{W_m}{W_f}\right]^0 = \frac{MP_m}{MP_f} \qquad (3.13)$$

where; MP_m and MP_f are the marginal product of males and females, respectively.

Ordinary least squares estimation of a wage equation for any given group of workers provides an estimate of the wage structure applicable to that group. The wage equation is to be estimated separately for male and female in the semi-log functional form:

$$\ln(W_i) = \beta_0 + \sum_{i=1}^{n} \beta_j Z'_{ji} + u_i, \quad i = 1,2,3,\ldots,n \qquad (3.14)$$

where

W_i is the total income,

$Z_{ji}^{'}$ is a vector of individual characteristics,

β is a vector of coefficients,

u_i is a disturbance term.

Consider a comparison between males and females. It is plausible to estimate an equation like (3.15 and 3.16) for the male and female earnings function in the following forms

$$\ln(W_i^m) = \beta_0^m + \sum_{i=1}^{n} \beta_i^m Z_{ji}^m + u_i^m, \quad i = 1,2,3,\ldots,n \qquad (3.15)$$

$$\ln(W_i^f) = \beta_0^f + \sum_{i=1}^{n} \beta_i^f Z_{ji}^f + u_i^f, \quad i = 1,2,3,\ldots,n \qquad (3.16)$$

Wage difference is

$$\ln(W_i^m) - \ln(W_i^f) \text{ or}$$

$$ln\left(\frac{\overline{W^m}}{\overline{W^f}}\right) = \left(\hat{\beta}_o^m - \hat{\beta}_o^f\right) + \sum_{i=1}^{n} \hat{\beta}_{ji}^m \hat{Z}_{ji}^m - \sum_{i=1}^{n} \hat{\beta}_{ji}^f \hat{Z}_{ji}^f \qquad (3.17)$$

To rearrange the form by plus and minus by $\sum_{i=1}^{n} \hat{\beta}_{ji}^m \hat{Z}_{ji}^f$ into (3.17)

$$\ln \Delta\overline{W} = \left(\hat{\beta}_o^m - \hat{\beta}_o^f\right) + \sum_{i=1}^{n} \hat{\beta}_{ji}^m \hat{Z}_{ji}^m - \sum_{i=1}^{n} \hat{\beta}_{ji}^f \hat{Z}_{ji}^f + \sum_{i=1}^{n} \hat{\beta}_{ji}^m \hat{Z}_{ji}^f - \sum_{i=1}^{n} \hat{\beta}_{ji}^m \hat{Z}_{ji}^f \qquad (3.18)$$

$$\ln \Delta\overline{W} = \left(\hat{\beta}_o^m - \hat{\beta}_o^f\right) + \sum_{i=1}^{n} \hat{\beta}_{ji}^m (\hat{Z}_{ji}^m - \hat{Z}_{ji}^f) + \sum_{i=1}^{n} \hat{Z}_{ji}^f (\hat{\beta}_{ji}^m - \hat{\beta}_{ji}^f) \qquad (3.19)$$

Total difference = E + V + R, (3.20)

$$E = \sum_{i=1}^{n} \hat{\beta}_{ji}^m (\hat{Z}_{ji}^m - \hat{Z}_{ji}^f) \qquad (3.21)$$

$$V = \sum_{i=1}^{n} \hat{Z}_{ji}^{f} (\hat{\beta}_{ji}^{m} - \hat{\beta}_{ji}^{f}) \quad (3.22)$$

$$R = \left(\hat{\beta}_{o}^{m} - \hat{\beta}_{o}^{f}\right) \quad (3.23)$$

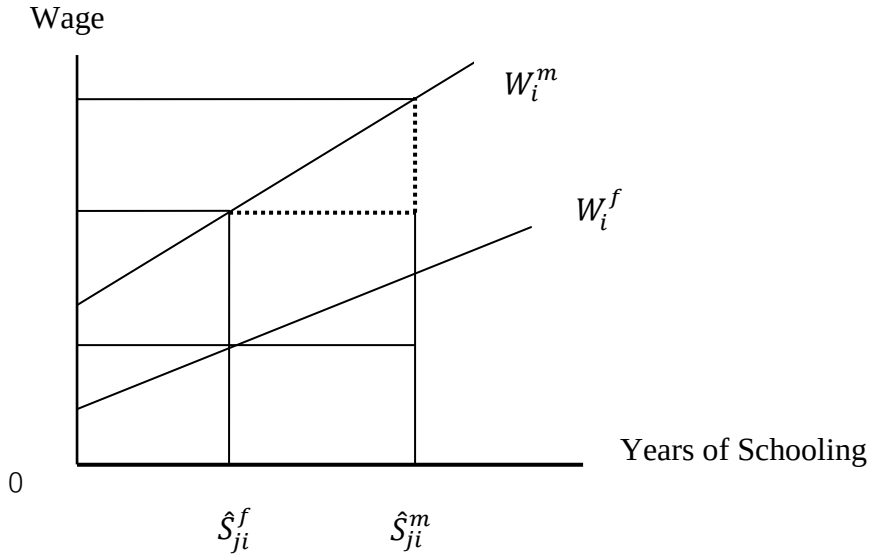

Figure 3.12 Wage Differentials by Gender

Where; W_i^m and W_i^f are the wage functions of males and females, respectively.

$\overline{AB}$ shows the discrimination effects due to the same level of schooling, use female's schooling as a reference level. Therefore, the same years of schooling but differences in pay by employer, amount of $\overline{AB}$ is a summation of *V* + *R*, Equation (3.22) + (3.23).

$\overline{CD}$ illustrates the difference in pay due to a different education, and considers male's wage. $\overline{CD}$ is equal to *E* in Equation (3.21).

Total wage difference is $\overline{AB}$+$\overline{CD}$

Moreover, Blinder (1973: 439) addresses that *E* is a portion of the differential attributable to differing endowments (years of schooling ,years of work experience). *V* is a portion of the differential attributable to differencing coefficients. *R* is an unexplained portion of the differential. When adding non-cognitive skills into the earning function, it may highly affect the significance of the earnings equation and the latter process through the Oaxaca-Blinder technique. It would be an extracted discrimination

term (presently unobserved effect), valued to the characteristics term (present price's effect), and attributed to the endowments, i.e., the X's effect (Blau and Kahn, 2006: 49).

Recently, however, Lathapipat (2007: 1-24) argues that "…The Oaxaca-Blinder decomposition technique incompletely decomposes the wage difference between two comparative groups into a portion that is explained by differences in characteristics, and a portion that is attributable to differences in the valuation of these characteristics." He also applied to the study on gender wage inequality using Australian 2001 data from the HILDA survey with his new methodology by the "locally weighted regression" technique with a "tricube" weight function (Cleveland, 1979: 829-836). As a result, this study on earnings inequalities relies on the traditional methodology, or its other variants, and could incorrectly estimate the explained and unexplained components of the wage gaps. His result is comparable to OB (by using the same dataset), but is quite different from the original OB method. A new method can increase the explained gender gap from 11.4% to 53.2% and decrease the unexplained gap from 88.6% to 53.2% (Dilaka Lathapipat, 2007: 18). From the original Oaxaca-blinder technique as show in (3.19)

$$ln\,\Delta\bar{W} = \left(\hat{\beta}_o^m - \hat{\beta}_o^f\right) + \sum_{i=1}^{n}\hat{\beta}_{ji}^m(\hat{Z}_{ji}^m - \hat{Z}_{ji}^f) - \sum_{i=1}^{n}\hat{Z}_{ji}^f(\hat{\beta}_{ji}^m - \hat{\beta}_{ji}^f)$$

Equation (3.19) is weighted by work experience is the improvement that Lathapipat tried to propose in term of diminishing return on work experience to earnings.

$$\ln\Delta\bar{W} = \left[(\bar{C}^m - \bar{C}^f)(\bar{X}^m - \bar{X}^f)\begin{bmatrix}\mathrm{b}^{\mathrm{m}}\\ \bar{\beta}^{\mathrm{m}}\end{bmatrix} + [\bar{\mathrm{C}}^{\mathrm{f}} \quad \bar{\mathrm{X}}^{\mathrm{f}}]\begin{bmatrix}(\mathrm{b}^{\mathrm{m}} - & \mathrm{b}^{\mathrm{f}})\\ (\hat{\beta}^{\mathrm{m}} - & \hat{\beta}^{\mathrm{f}})\end{bmatrix}\right] \qquad (3.24)$$

Where:

$$\bar{C} = \left[1 \quad k_0 \quad k_0^2 \quad k_0\bar{t} \quad \left[\frac{k_0+k_0^2}{T}\right]\bar{t} \quad \frac{k_0}{T}\overline{tsq} \quad \frac{k_0^2}{T^2}\overline{tsq}\right] \qquad (3.25)$$

k_0 is an initial net investment ratio

$\bar{t}$ is a sample mean of the work experience

$\overline{tsq}$ is a sample mean of the work experience squared

T is a total investment horizon T for male and female

Note that a new method has added the term of return from work experience as a tricube weight function. However, in this study, I employ the weighted least square[11] through by the year of schooling as an endogenous variable. Blinder explained in his work about the relationship among variables that cause the wage in terms of the simultaneous equation (Blinder, 1973: 441-442; Bound and Jaeger, 1996). Both human capital and non-human capital are the individual's endowment and related to their future wage. This study employs several single equations and simultaneous equations in terms of the two stage least squares. The independent variable is comprised of cognitive skills, which come from years of schooling, years of work experience, training hours, skills in English and local language. Demographic and socioeconomic variables are included. Non-cognitive skills come from the psychological concept. All detail of independent variables is shown in the next topic.

Therefore, my study employs the Mincer equation with NCs and quadratic form of work experience by male and female earnings equations, and is calculated by the Oaxaca-blinder technique.

$$ln\ E^{g} = \alpha_5 + \sum_{i=1}^{10} \mu' X_i + \sum_{j=2}^{7} \sigma'\ O_j + \rho Z + \sum_{t=1}^{12} \varphi' N_t + U_6 \quad (3.26)$$

g is gender (male, female earnings equation)

From 3.26 we have two earnings equation and then calculate the earnings difference via equation (3.19)

3.4 Measurement of the Variables

3.4.1 Cognitive Skills

1) Years of schooling

---

[11] This study employs the "pweight or sampling weights denote the inverse of the probability that the observation is included due to the sampling design (J. Scott Long and Jeremy Freese,2003:68) ."

The data collected for 7 occupations which is non-agricultural workers. It is provided in the data as a continuous scale from zero to 27 years of schooling or from having no education to a doctoral degree

2) Years of work experience and its square

Likewise, years of schooling, this data is a continuous scale. This survey of work experience starts with .083 to 53 years

3) Training hours

This dataset was collected in the time frame within one previous year from year 2009. The respondent got training that measured in terms of hours.

4) English Language Skills

The English was a Likert measurement, scale from 1 (poor) to 5 (excellent) in all skills: speaking, listening, reading, and writing.

5) Esan Language Skill

The local language was measured likewise as a previous one, but just judged for two skills: speaking, listening.

6) How long to live in Khonkaen

A period of time that the worker lives in this location under the hypothesis is that positive to earnings

7) Parent's years of schooling

The proxy of family interaction to labor market incomes

8) Illness related to work

The ordinal scale has been used to measure the respondent judged from 1(minimum) to 5 (maximum)

3.4.2 Non-cognitive Skills *(discussed in chapter 2)*

Measurements for non-cognitive variables are constructed by questionnaire (Appendix B).

1) Big Five Personality

This personality comprises of openness, conscientiousness, extraversion, agreeableness, and neuroticism. They are judged by a likert scale from1 to 6 with 40 questions that filter by factor analysis. Each question is check validity and reliability testing.

2) Locus of Control

Internal Locus of Control and external Locus of Control are calculated into the score of the internal Locus of Control. For example, the meaning of the external Locus of Control has to be a minus score in the total score. Therefore, the high score could present a high internal Locus of Control and vice versa in a low score (which is present in the low internal or high external Locus of Control).

3) Self-Esteem

This study uses 10 questions to determine self-esteem characteristics

Likewise, other non-cognitive, Locus of Control, and self-esteem were rank scores by Likert 1-6 scores. All non-cognitive traits in this study have set both positive and negative meanings to check the same traits. For example, to check neuroticism, “you always appreciated when see other have a good opportunity” and “you are a jealous person.”

3.4.3 Gender Discrimination

The wage gap can be measured by the perspective of gender segregated by occupation category. Both male and female workers in all occupations give their information of earnings. Earnings is the present sum of monetary earnings per month.

3.4.4 Illness

Illness can be measured through by the question “have you ever have illness problem?” and if they answer “yes” then ask them further that “How much of level of illness affect to work.” Scales are a five level; minimum, less, moderate, quite a lot, and extremely maximum.

CHAPTER 4

EFFECTS OF COGNITIVE AND NON-COGNITIVE SKILLS ON LABOR INCOMES

4.1 Sample Profile

All of respondents are residing in the Muang District, Khonkaen province, Northeast of Thailand. Years of schooling in this sample, on average, is 13.36 years and earnings is 18,523.69 baht per month. Years of work experience are around 12 years and workers have a training hour average of 22 hours per year. However, notice that the average age is 35 years old (minimum 16 and maximum 72) and may imply that the Khonkaen labor market not only presents a mid-aged worker but also has a lot of work experience.

Sample size is 53 percent of males and 47 percent of females. Language skill is moderate around 10 from a 20 total score (speaking, listening, writing, and reading), while rural language (Esan) is quite high, around 9 from a 10 total score (speaking and listening) This shows that the majority of those answering the questionnaires are able to speak and listen to the local Esan language very well.

Parental schooling is as low as elementary education (6 years) while their children's are higher with a secondary education (9 years). All respondents have lived in Khonkaen for a 5 year average, which implies that employee satisfaction on their job is quite high, or in other words, the employer may provide satisfied-incentives to them. Workers in Amphur Mueang, Khonkaen Province hardly ever get ill, this is confirmed by the score of illness (subjective to the respondent to judge themselves through by the Likert-scale, 5 means seriously affected to work, see Appendix B, questionnaire). Frequencies of conflict within the previous 3 months are around 7.49 or approximately twice a month. Cause of conflict comes from communication problem (Appendix A. Table 3.1).

Table 4.1 Means and Standard Deviations of Data

Variable	Mean	Std. Dev.	Min	Max
Earnings	18,523.69	18,315.38	916.67	117,000
Years of Schooling	13.36	4.73	1	27
Year of Work experience	11.49	9.85	0.08	53
Year of Exp.^{2}	2,746.90	4,433.82	0.08	33,708
Training Hour	21.87	33.70	0	300
Male	0.53	0.50	0	1
Age	35.60359	11.70084	16	72
Type of Firm				
Government	.32			
State Enterprise	.05			
Private	.63			
OCC				
1Manager,CEO	0.13			
2Professional	0.11			
3Technician	0.10			
4Clerk	0.09			
5Shop Attendants	0.21			
6Craft Worker	0.18			
7Plant worker	0.15			
Father's Schooling	6.87	4.88	0	23
Mother's Schooling	5.92	4.39	0	18
Live in KKN	5.04	9.25	0	44
Type of Family				
Single Family	.38			
Expanded Family	.62			
Illness	0.82	1.06	0	5

Table 4.1 (Continued)

Variable	Mean	Std. Dev.	Min	Max
Marital Status				
Single	.41			
Married	.53			
Divorce	.03			
Separate	.01			
Couples pass a way	.01			
English Language Skill	10.56	3.61	4	20
Esan Language Skill	8.78	1.86	2	10
Illness	0.82	1.06	0	5
Conflict	1.90	1.12	1	6
Mini maker 5 variables				
Openness	13.38	2.07	3	18
Conscientiousness	13.84	2.16	6	18
Extraversion	12.19	2.90	4	18
Agreeableness	14.76	2.01	7	18
Neuroticism	9.90	3.63	3	18
Conflict management 5variables				
Withdrawing	12.99	3.17	3	18
Forcing	6.09	3.19	3	18
Smoothing	14.35	2.72	5	18
Confronting	12.62	2.87	3	18
Compromising	15.14	2.37	5	18
Self Esteem	55.96	6.55	26	73
Locus of Control	81.29	10.32	48	119

Note: Dummy series are gender and occupations so mean show the ratio divided by total 613 observations, female and *OCC1* are references.

Table 4.2 Year of Schooling by Occupation

Occupation	Year of Schooling Mean	Std. Dev.	Min	Max
OCC 1	13.85	4.86	4	27
OCC 2	19.46	2.39	16	25.5
OCC 3	16.14	1.04	12	19
OCC 4	16.06	2.11	12	26
OCC 5	13.82	2.71	1	18
OCC 6	8.99	4.28	1	17
OCC 7	9.53	3.09	4	16

Note: Totally there are 613 persons comprising of 403 white collar workers (34%), 210 blue collar workers (66%).

OCC1: Senior officials and managers, *OCC2*: Professionals**,** *OCC3*: Technicians and Associate Professionals**,** *OCC4*: Clerks**,** *OCC5*: Shop attendants, *OCC6*: Craft and Related Trades Workers**,** *OCC7:* Plant and Machine Operators and Assemblers**.**

Among occupations, 1 to 7 years of schooling can be separated into two groups: *OCC1* and *OCC5*. *OCC1* are the white collar workers with 13-19 years of schooling. OCC5 workers have a secondary to master's degree. In *OCC1* and *OCC2*, they have a degree of education up to a doctoral degree. The term white-collar worker refers to a salaried professional, or an educated worker, who performs semi-professional office, administrative, and sales coordination tasks, as opposed to a blue-collar worker, whose job requires manual labor. "white-collar work" is an informal term, defined in contrast to "blue-collar work." The white-collar worker, by contrast, performs non-manual labor often in an office, while the service industry worker performs labor involving customer interactions, entertainment, retail, and outside sales, and the like.

OCC6 and *OCC7* are blue collar workers with 8-9 years of schooling or around the elementary school level. A blue-collar worker is a member of the working class who typically performs manual labor and earns an hourly wage. Blue-collar workers are distinguished from those in the service sector and from white-collar workers, whose jobs are not considered manual labor. Blue-collar work may be skilled or unskilled, and may involve manufacturing, mining, building and construction trades, mechanical work, maintenance, repair and operations maintenance or technical installations. Table 4.2 shows the number of white (*OCC1-5*) and blue collar (*OCC6,7*) workers. By the proportion of the stratified random sampling, the number of white collar workers is less than blue collar workers (see note in Table 4.2).

4.2 The Effects of Cognitive Skills on Earnings

Considering the effects of cognitive skills, the regression coefficients corresponding to personal characteristic wage equations are presented in Table 4.3. Coefficients were estimated in the following model:

1) a particular characteristic serves as a base case, in which the model does not add the non-cognitive skill as an independent variable. Variables are schooling, work

experience, training hours, gender, family, occupations, parent's schooling, living period in the Khonkaen province, language, and illness(see equation 3.4)

2) the model with non-cognitive variables (see equation 3.5)

Table 4.3 illustrates the positive relationship between cognitive variables and earnings. This relationship is one more years of schooling increases earnings by 6.92 percent (~1,245 Baht./month, calculate from average earnings), while one more year of work experience could enhance earnings by 6.75 percent (1,215 Baht/month). Another cognitive factor is the squares of work experience year which is negative. This shows diminishing returns to scale of earnings (related to the age earning profile). Training hours present less of an effect on earnings, about 0.19 percent, while English language skill has quite an influence on earnings, 3.33 percent. Family interaction or parent's education on their children's earnings is not significant in this study. (This study measures this as number of years of schooling).

4.3 The Effects of Non-Cognitive Skills on Earnings

A non-cognitive skill in the model employs the two-stage least squares method. However, model (1) has only Locus of Control (LOC), while model (2) adds other traits into the model (see equation 3.6, 3.7 3.8, and 3.9).

This study employs a set of four non-cognitive variables: 1) LOC, 2) Self-Esteem, 3) Big Five Personality, and 4) Conflict Management (See definition in Chapter 2). Table 4.3 shows the comparison of with and without non-cognitive skill in wage equation. All independent variables are years of schooling, years of work experience and its square, training hour, gender, occupation, parent's schooling, time period live in Khonkaen province, rural language, English language proficiency, frequency of work absent, and locus of control score. According to a correlation between age and year of work experience for this data set therefore the model select only year of work experience as an independent factor in the model.

Consider the model before and after the introduction of the non-cognitive variables in the model. Table 4.3 reveals that the years of schooling, years of work experience, and training hours have a positive relationship to earnings; this confirms the original Mincerian model. Looking at type of work, all six occupations have

earned less than the group of Senior Officials and Managers due to their lower years of schooling attainment than *OCC1* (Table 4.2). In addition, language skills, especially English, has a positive effect on earnings since Khonkaen province is a hub in North-east Thailand with a variety of economic activities, in manufacturing, hotel, and educational sectors.

Model (1) in Table 4.3 empirically shows that employers expect their workers to be competent in language skills as seen from the coefficient of 0.0333. However, the local "Esan language" is negative to labor incomes (in all models 1 to 4). The explanation for this case study is that almost all white collar workers use formal Thai language while, blue collar workers who have lower incomes speak a local language, which is a linguistic minority. Actually, the formal language in this North East labor market is mostly Thai; therefore the Thai language skill is a dominant national language.

Illness has a negative effect on worker's earnings. This study has no specific kind of illness, however, the respondent justified themselves that illness affects work on five levels. Illness is merely not a main objective and it is not the focus in this study. Nonetheless, the level of illness is -.0429 at the 95% confidence level in model (1).

The longer life leads to a higher income in Khonkaen province. When non-cognitive skill namely "LOC" was added into model (2) in Table 4.3, this being comparable with the model (1) to the extent that the coefficient turned lower after the introduction of the non-cognitive skill. Observe adjusted R-squared from both models under assumption: model with NCs should have higher adjusted R-squared (model (1) is 0.6692 while model (2) is 0.6743). More of non-cognitive skill variables in model (4), show higher adjusted R-squared than that of model (3), 0.6021 and 0.2630, respectively.

Table 4.3 Empirical Results on Earnings

Dependent : ln Earnings	**(1) Without non-cognitive variable (WLS)**	**(2) With non-cognitive variable (WLS)**	**(3) Locus as instruments (2SLS)**	**(4) Locus and other personality traits as instruments (2SLS)**
Years of Schooling	0.0692***	0.0669***	0.2762***	0.1459***
	(0.00964)	(0.0095)	(0.0973)	(0.0329)
Years of Work	0.0675***	0.0664***	0.0664***	0.0688***
Experience	(0.00673)	(0.0067)	(0.0097)	(0.0070)
Years of Exp^2	-0.000096***	-0.000095***	-0.000092***	-0.0001***
	(0.00002)	(0.0000)	(0.000022)	(0.000015)
Training Hours	0.0019***	0.0018**	0.0017*	0.0019***
	(0.00069)	(0.0007)	(0.00099)	(0.0007)
Male	0.0190	0.0148	-0.0383	0.0185
	(0.04400)	(0.0431)	(0.0775)	(0.0497)
	Occupation OCC1 = Base			
OCC2	-0.0607	-0.0453	-0.7382**	-0.2793*
	(0.09139)	(0.0902)	(0.3691)	(0.1535)

Table 4.3 (Continued)

Dependent : ln Earnings	(1) Without non-cognitive variable (WLS)	(2) With non-cognitive variable (WLS)	(3) Locus as instruments (2SLS)	(4) Locus and other personality traits as instruments (2SLS)
OCC3	-0.0040	0.0131	-0.2856	-0.0818
	(0.09287)	(0.0913)	(0.2013)	(0.1097)
OCC4	-0.2182**	-0.2136**	-0.5017**	-0.2793**
	(0.09400)	(0.0925)	(0.2138)	(0.1137)
OCC5	-0.2444***	-0.2310***	-0.0721	-0.1442*
	(0.08970)	(0.0881)	(0.1291)	(0.0882)
OCC6	-0.5701***	-0.5627***	0.1511	-0.2739**
	(0.09543)	(0.0937)	(0.3391)	(0.1385)
OCC7	-0.5279***	-0.5284***	0.1577	-0.2110
	(0.09528)	(0.0938)	(0.3047)	(0.1336)

Table 4.3 (Continued)

Dependent : ln Earnings	(1) Without non-cognitive variable (WLS)	(2) With non-cognitive variable (WLS)	(3) Locus as instruments (2SLS)	(4) Locus and other personality traits as instruments (2SLS)
Father's Schooling	0.0032	0.0040	-0.0069	-0.0017
	(0.00595)	(0.0061)	(0.0103)	(0.0071)
Mother's Schooling	-0.0022	-0.0023	0.0048	0.0012
	(0.00679)	(0.0069)	(0.0111)	(0.0080)
Live in KKN	0.0059**	0.0062***	-0.0030	0.0031
	(0.00264)	(0.0026)	(0.0060)	(0.0033)
English Language Skill	0.0333***	0.0316	-0.0704	-0.0020
	(0.00841)	(0.0084)	(0.0522)	(0.0190)
Esan Language Skill	-0.0315**	-0.0306***	-0.0315*	-0.0337**
	(0.01237)	(0.0124)	(0.0186)	(0.0136)
Illness	-0.0429**	-0.0373	0.0278	-0.0185
	(0.02030)	(0.0201)	(0.0463)	(0.0254)

Table 4.3 (Continued)

Dependent : ln Earnings	(1) Without non-cognitive variable (WLS)	(2) With non-cognitive variable (WLS)	(3) Locus as instruments (2SLS)	(4) Locus and other personality traits as instruments (2SLS)
Locus of Control	-	0.0063***	-	-
	-	(0.0020)	-	-
Constant	8.1386***	7.6628***	6.3750***	7.4316***
	(0.21507)	(0.2648)	(0.8287)	(0.3252)
R^2	0.6784	0.6838	0.2835	0.6131
Adjusted R^2	0.6692	0.6743	0.2630	0.6021

Note: Heteroskedasticity-robust standard errors in parentheses

*** Statistically significant at 0.01 level

** Statistically significant at 0.05 level

* Statistically significant at 0.1 level

(1) Weighted least square without non-cognitive in the model
(2) Weighted least square with non-cognitive in the model (locus of control)
(3) Two-stage least square with locus of control as an instrumental variable
(4) Two-stage least square with locus of control, self-esteem, big five personalities, conflict management as an instrumental variables
See dummy variables at note of Table 4.4

Table 4.4 mentions three factors reflecting income differences as follows.

1) When family factors other than parental education are considered (Table 4.3), there also are parents' marital status and workers' marital status that are statistically significant. It is found that married workers in this study can earn 18.88% more income than single workers' income. Workers deprived of both father and mother at the age of fourteen earn 41.32% more income than that of workers with parents.

2) Differences between males and females across various educational levels indicate that males with elementary school degree, secondary school degree, and undergraduate degree earn 274.75%, 65.29%, and 16.99% more than females' income with the same degrees, respectively. This can be concluded that there is less discrimination when workers have higher degree.

3) Income differences across males and females working in the same types of organizations are found that in both public and private organizations, males earn 19.75% and 43.07% respectively less than females while in state enterprises, males earn 33.96% more than females.

4) Income differences for females in various occupations are found that females in state enterprise and private organizations earn 14.46% and 41.03% respectively more than females in public organizations. When those in private organizations and state enterprise are compared, it is found that private females earn 23.21% more than state females. Generally, female in public organizations earn lowest. Economically, it may be said that productivity of female in government sector is less than others.

5) Income differences for males in various occupations are found that males working in state enterprises and private organizations earn 91.09% and 0.047% more than males in public organizations, while private males earn 47.64% less than state males. It can be said that males in public organizations have much lower productivity than males in state enterprises, but not much lower when compared with males in private organizations (0.047%)

Notice that on the job training is not significant to future earnings in this case study both male and female.

Table 4.4 Earnings Function with Family and Type of Firm Condition

Dependent : ln Earnings	**Additional Conditions**
Years of Schooling	0.2055***
	(0.0484)
Years of Work Experience	0.0549***
	(0.0088)
Years of Exp^2	-0.0001***
	(0.0000)
Training Hours	0.0014
	(0.0009)
Type of Family	
Extended family	-0.0354
	(0.0637)
Father's Schooling	-0.0022
	(0.0072)
Mother's Schooling	-0.0024
	(0.0079)
English Language Skill	-0.0041
	(0.0243)
Esan Language Skill	-0.0273**
	(0.0139)
Illness	-0.0058
	(0.0289)

Table 4.4 (Continued)

Dependent : ln Earnings	**Additional Conditions**
Marital Status	
Married	0.1730**
	(0.0786)
Divorce	0.1586
	(0.1563)
Legally seperate	0.0766
	(0.2173)
Widowed	0.1683
	(0.3786)
Family status while 14 years old	
Separate	-0.0098
	(0.1316)
Divorce	-0.0190
	(0.1158)
Father deceased	0.0261
	(0.0892)
Mother deceased	0.0806
	(0.1608)
Both deceased	0.3458
	(0.1460)
Gender	-0.2201
	(0.1388)

Table 4.4 (Continued)

Dependent : ln Earnings	**Additional Conditions**
Type of Firm	
Enterprise	0.1351
	(0.2730)
Private	0.3438*
	(1996)
Interaction Term	
Male*Enterprise.	0.5125*
	(0.2878)
Male*Private	-0.3433*
	(0.1830)
Male*Training Hour	0.0016
	(0.0014)
Male*Primary School	1.3211***
	(0.4583)
Male*Secondary School	0.5025*
	(0.2711)
Male*Bachelor	0.1569
	(0.1538)
Constant	6.2292
R^2	0.5973
Adjusted R^2	0.5780

Note: Dummy variables Specification in Statistics Analysis

1.*Gender*: base is females.

Gender = 1 if workers are males, 0 if females

2. *Occupations*: base is OCC 1 (senior officials, managers)

OCC2 = 1 if workers are professionals, 0 otherwise,

OCC3 = 1 if workers are technicians and associate professionals, 0 otherwise,

OCC4 = 1 if workers are clerks, 0 otherwise,

OCC5 = 1 if workers are shop attendants, 0 otherwise ,

OCC6 = 1 if workers are craft and related trades workers, 0 otherwise,

OCC7 = 1 if workers are plant and machine operators and assemblers, 0 otherwise.

3. *Family Type* : base is an extended type.

Family Type = 1 if family is a single type, 0 is an extended type.

4. *Marital Status*: base is single.

Married = 1 if workers are married, 0 otherwise,

Divorced = 1 if workers are divorced, 0 otherwise.

Legally separated = 1 if workers are legally separated, 0 otherwise

Widowed = 1 if workers are widowed, 0 otherwise

5. *Family status while workers were 14 years old*: base is married.

Separated = 1 if parents were separated, 0 otherwise,

Divorced = 1 if parents were divorced, 0 otherwise,

Father was deceased = 1 if father was deceased, 0 otherwise,

Mother was deceased = 1 if mother was deceased, 0 otherwise,

Both father and mother were deceased = 1 if both father and mother were Deceased, 0 otherwise.

6.*Firm Type*: base is public sector.

State enterprise = 1 if workers are in state enterprise, 0 otherwise,

Private sector = 1 if workers are in private sector, 0 otherwise.

Table 4.5 presents a percentage change in all independent variables being statistically significant. A case in point, one additional year of schooling results in an increase of 692 baht if the wage is 10,000 baht. The explanation for the case of work experience is approximately 6.75 percent, or 675 baht. The effects of years of schooling are greater than work experience as seen in Table 4.5.

Another cognitive skill is English language (with the scale values going from poor to excellent) is 3.33 percent, while the local language is associated with a

negative coefficient of -3.15. Esan people have less education than immigrants (mostly come from another region such as central regional) so, higher wages or higher status goes to workers that do not use the "Esan language." Illness is associated with a drop of -4.29 percent in earnings that may dominate by quantity of *OO6* and *OCC7* (due to a proportional sampling, see Figure 3.1 for details). In other words, in Amphure Mueang, Khonkaen province, blue collar workers outnumber white collar workers.

When NC, Table 4.6 shows that the effects of years of schooling have a slightly stronger effect than work experience (6.69 percent greater than 6.65 percent) being consistent with Lathapipat (2007). Training hours from Table 4.6 reveals that an additional hour leads to greater earnings by 0.18 percent. An implication is that almost all firms in the Khonkaen do not concentrate on human resource development.

The wage gap due to different occupations is shown in this table. Only four occupations are found significant. Related to *OCC1* as the base, *OCC 4, 5, 6, and 7* earn lower as seen from their in minus terms, -19.60, -21.68, -43.45, and -41.02 percent, respectively.

Table 4.5 The Percentage Change in Earnings without Non-cognitive Skills (Weighted Least Square)

Variable	Coefficient	Mean	Std. Dev.	Min	Max	% Change of Earnings[12]	Note
Earnings		18,523.69	18,315.38	916.67	117,000		
Year of sch.	0.0692	13.36	4.73	1	27	6.92	
Year exp.	0.0675	11.49	9.85	0.083333	53	6.75	Dummy[13] series have to determine comparable with the reference occupation, *OCC*1
Year exp^2	-0.0001	2,746.90	4,433.82	0.083333	33,708	-0.01	
Training hour	0.0020	21.87	33.70	0	300	0.20	
Male	0.0190	0.53	0.50	0	1		
OCC2	-0.0607	0.11	0.32	0	1		
OCC3	-0.0040	0.10	0.31	0	1		
OCC4	-0.2182	0.10	0.30	0	1	-19.60	
OCC5	-0.2444	0.21	0.41	0	1	-21.68	
OCC6	-0.5701	0.19	0.39	0	1	-43.45	
OCC7	-0.5280	0.15	0.36	0	1	-41.02	
Father Sch.	0.0032	6.87	4.88	0	23		

---

[12] ln Y = a + bX then dlnY/dx = 0+b and 1/Y* dY/dX = b

((dY/Y) *100 %)) /(dX) = ($\hat{b}$)*100 %,When X changes 1 unit, then Y will change by ($\hat{b}$)*100 %

[13] ln Y = a+b_1X + b_2D (Dummy; use *OCC1* as base=0) for example consider

OCC2=1, compare with *OCC1*

OCC1: ln Y_{OCC1}= a+b_1X+b^2(0) and *OCC2*: lnY_{OCC2}=a+b_1X+b_2(1)

OCC2-OCC1 = ln Y_{OCC2}- ln Y_{OCC1} = a+b_1X+b_2-a-b_1X

ln (*OCC2*/*OCC1*)= b_2 then *OCC2*/*OCC1* = e^{b2} (interpret in meaning of multiple) or

((*OCC2-OCC1*)/*OCC1*)*100 = (e^{b2}-1)*100(interpret in meaning of percent , note e=2.7182

Table 4.5 (Continued)

Variable	Coefficient	Mean	Std. Dev.	Min	Max	% Change of Earnings	Note
Moth Sch.	-0.0022	5.92	4.39	0	18		
Live KKN	0.0059	5.04	9.25	0	44	0.59	
English skill	0.0333	10.56	3.61	4	20	3.33	
Esan skill	-0.0315	8.78	1.86	2	10	-3.15	
Illness	-0.0429	0.82	1.06	0	5	-4.29	
Constant	8.1386						

Table 4.6 Percentage Change in Earnings in Wage Equation Including Non-cognitive Skills (Weighted Least Square)

Variable	Coefficient	Mean	Std. Dev.	Min	Max	% Change of Earnings
Earnings		18,523.69	18,315.38	916.67	11,7000	
Year of sch.	0.0669	13.36	4.73	1	27	6.69
Year exp.	0.0665	11.49	9.85	0.08	53	6.65
Year exp^2	-0.0001	2,746.90	4,433.82	0.08	33,708	-0.01
Training hour	0.0018	21.87	33.70	0	300	0.18
Male	0.0148	0.53	0.50	0	1	ns
OCC2	-0.0453	0.11	0.32	0	1	ns
OCC3	0.0131	0.10	0.31	0	1	ns
OCC4	-0.2136	0.10	0.30	0	1	-19.23
OCC5	-0.2310	0.21	0.41	0	1	-20.63
OCC6	-0.5627	0.19	0.39	0	1	-43.03
OCC7	-0.5284	0.15	0.36	0	1	-41.04
Father Sch.	0.0040	6.87	4.88	0	23	ns
Moth Sch.	-0.0023	5.92	4.39	0	18	ns
Live KKN	0.0062	5.04	9.25	0	44	0.617
English skill	0.0316	10.56	3.61	4	20	ns

Table 4.6 (Continued)

Variable	Coefficient	Mean	Std. Dev.	Min	Max	% Change of Earnings
Esan skill	-0.0306	8.78	1.86	2	10	-3.057
Illness	-0.0373	0.82	1.06	0	5	ns
Locus of control	0.0063	81.29	10.32	48	119	0.63

Table 4.5 and 4.6 lead to the change in explanatory power of the model with and without NC that summary in table 4.7 as follow. All significant variables (except OCC7 and Live KKN) All cognitive skills might be overestimated, due to Heckman James J. et al. (2006: 1-29), who indicated that non-cognitive abilities can also play a significant role in future earnings. In the WLS in columns (1) and (2) in Table 4.3, more of the NC being introduced in the model lead to less of an explanation of years of schooling from 27.62 percent to 14.59 percent of earning. Moreover, more of the NC improves adjusted $R^2$of the model from 26.30 percent to 60.21 percent. Non-cognitive skills serve as a good determinant to the earnings model. In other words non-cognitive skills play a significant role in explaining earnings.

The last column in Table 4.7 illustrates the percentage change in the explanatory coefficient for all cognitive skills (except Live KKN). There would be a change in the lower power when non-cognitive variables are added into the model. Unlike cognitive skills, adding non-cognitive measures to the model greatly reduces the explanation by the cognitive skills close to 3.32 percent (from 6.92 to 6.69), by work experience year by 1.48 percent, by training hour by 10.00 percent, and by occupation (except *OCC7*) for an estimate of 1 to 5 percent.

Table 4.7 Changes in Explanatory Power of Explanation

Dependent Variable ln Earnings	%change in earnings W/O NC	%change in earnings W/ NC
Year of sch.	6.92	6.69
Year exp.	6.75	6.65
Year exp^2	-0.01	-0.01
Training hour	0.20	0.18
Male	ns	Ns
OCC2	ns	Ns
OCC3	ns	ns
OCC4	-19.60	-19.23
OCC5	-21.68	-20.63
OCC6	-43.45	-43.03
OCC7	-41.02	-41.04
Moth Sch.	ns.	ns.
Live KKN	0.59	0.62
English Language Skill	0.03	Ns
Esan Language Skill	-3.15	-3.06
Illness	-4.29	ns

CHAPTER 5

ROLE OF NON-COGNITIVE SKILLS ACROSS OCCUPATIONS

5.1 Non-Cognitive Skills and Occupational Attainment

Employers seek out workers who possess the personality traits of controllable behavior, traits that are rewarded in the labor market, which is far broader than simple "agreement" characteristics. Personality traits have been measured by different concepts, such as the LOC, Self-Esteem, and Big-Five Personality. It may be necessary to look upon employers demands for workers and the performance of workers. It may be argued that non-cognitive is embedded in their performance.

The role of non-cognitive characteristics in occupational attainment seems to be of little economic importance. Instead, this study attempts to explain why individuals receive more, or less, better or higher positions in the labor market. Sociologists and economists have concentrated on the role of cognitive traits, such as IQ and educational qualifications, or social class origin, gender or ethnicity (Jackson, 2006: 187). Table 5.1 indicates different occupations that possess different earning levels. The differences exist in both cognitive and non-cognitive skills. All seven occupations in this study can be found with the first five occupations being manufacturing and service sectors (*OCC1-5*), white collar, and the last two being blue collar workers (*OCC6* and *OCC7*). On average, years of schooling for the white collar groups range from secondary school to college education; white, blue collar groups receive as highest as secondary education.

Some of the cognitive skills are different across the groups, non-cognitive score from the psychology test (12 traits) appears to vary different occupations as well (Table 5.3). The interesting issue is what kind of non-cognitive skills affect earnings in different occupations.

Table 5.1 Sample Mean and Standard Deviation by Occupations

Occupations	**OCC1**		**OCC2**		**OCC3**		**OCC4**	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Earnings	29766.46	24929.78	37321.69	21105.58	24613.14	14654.45	20865.88	13949.57
Year of Schooling	13.85	4.86	19.46	2.39	16.14	1.04	16.06	2.11
Year of Work Experience	16.76	10.10	14.01	10.06	10.39	8.62	12.20	10.53
Year of Work Experience^2	4579.94	4687.58	3552.34	4050.53	2173.04	2879.58	3094.76	4700.89
Training Hour	37.72	42.07	31.83	42.62	32.02	46.33	25.72	26.71
Male	0.63	0.49	0.51	0.50	0.50	0.50	0.37	0.49
Father Schooling	6.95	5.26	10.37	6.19	7.48	5.34	8.67	5.04
Mother Schooling	4.90	4.07	9.64	5.90	6.69	5.18	7.03	4.83
Live KKN	6.99	11.38	12.25	12.74	5.63	8.64	6.70	10.24
English Language Skill	10.41	3.95	13.94	2.62	11.75	2.38	11.40	2.16
Esan Language Skill	8.49	2.08	7.09	2.24	8.78	1.76	8.57	1.93
Illness	0.80	0.92	0.86	0.92	0.55	0.82	0.60	0.98
Openness	13.45	2.04	13.44	2.29	13.44	1.82	13.13	1.76
Conscientiousness	13.99	2.16	13.04	2.09	14.17	2.09	12.97	2.36
Extraversion	12.11	2.84	11.44	3.33	11.84	2.86	11.67	2.70
Agreeableness	14.81	1.90	14.37	1.90	14.64	1.78	14.18	2.64
Neuroticism	9.23	3.46	9.80	3.59	9.61	3.28	9.83	3.37
Withdrawing	12.14	3.86	14.00	2.25	12.66	2.63	13.58	2.36
Forcing	5.96	2.91	5.71	2.62	6.38	2.80	6.18	3.27

Table 5.1 (Continued)

Occupations	OCC1		OCC2		OCC3		OCC4	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Smoothing	14.46	2.53	14.37	2.49	14.03	2.23	14.08	3.04
Confronting	12.00	3.61	13.13	2.38	12.52	2.36	12.92	2.56
Compromising	15.50	2.56	15.47	1.86	14.86	2.01	14.72	2.26
Self	57.18	6.01	56.79	6.50	56.42	6.36	54.33	6.30
Locus	83.59	10.62	83.64	10.87	81.77	9.29	82.97	9.77

Table 5.1 (Continued)

Occupation	OCC5		OCC6		OCC7	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Earnings	15,392.44	15,293.31	8,225.07	6,500.45	6,321.88	2,417.72
Year of Schooling	13.82	2.71	8.99	4.28	9.53	3.09
Year of Work Experience	7.22	7.23	14.44	11.78	7.66	5.61
Year of Work Experience^2	1,247.23	2,263.47	4,153.34	6,783.11	1,078.19	1,691.66
Training Hour	17.32	29.17	16.72	24.72	4.21	6.29
Male	0.43	0.50	0.59	0.49	0.67	0.47
Father Schooling	7.33	4.78	4.85	2.80	4.46	2.30
Mother Schooling	6.47	4.32	4.18	2.12	4.16	1.65

Table 5.1 (Continued)

Occupation	OCC5		OCC6		OCC7	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Live KKN	3.87	7.03	2.10	6.53	1.81	5.19
English Language Skill	11.71	2.94	8.27	3.65	8.09	2.80
Esan Language Skill	8.88	1.71	9.51	1.14	9.38	1.36
Illness	0.74	1.06	1.11	1.36	0.91	0.96
Openness	13.61	1.98	13.45	1.97	12.99	2.45
Conscientiousness	13.72	2.18	13.93	2.13	14.69	1.77
Extraversion	12.47	3.09	12.28	2.55	12.89	2.76
Agreeableness	15.13	2.27	14.85	1.78	14.80	1.68
Neuroticism	11.15	3.74	9.32	3.61	9.80	3.73
Withdrawing	13.26	2.94	12.76	3.80	12.74	3.13
Forcing	7.13	3.62	5.59	3.58	5.45	2.50
Smoothing	14.31	2.76	14.59	2.92	14.41	2.83
Confronting	13.07	2.44	12.66	3.02	11.99	3.17
Compromising	15.23	2.12	15.35	2.57	14.68	2.83
Self	54.93	6.39	56.50	7.57	55.80	5.95
Locus	80.30	11.37	78.97	9.64	80.39	9.30

Table 5.2 Different Earnings Across Occupation

Occupation	*OCC1*	*OCC2*	*OCC3*	*OCC4*	*OCC5*	*OCC6*	*OCC7*
OCC1		*			*	*	*
OCC2				*	*	*	*
OCC3					*	*	*
OCC4					*	*	*
OCC5						*	*

There are some differences across occupations in which a multiple comparison of Dunn method from table 5.2 shows that only *OCC3* has income level not different from those in other jobs. *OCC6* and *OCC7* have income levels that are significantly different from other occupations for 5 pairs, i.e., *OCC6* and *OCC1*, *OCC2*, *OCC3*, *OCC4*, *OCC5*, as well as *OCC7* and *OCC1*. From this result we can conclude that the difference in income between *OCC6* and *OCC7* is influenced by the difference cognitive skills as shown in table 5.1, in which years of schooling in *OCC6* and *OCC 7* are quite low.

5.2 Gender and Occupational Attainment

Table 5.3 Average Earnings by Occupations (Baht per month)

Total income			**Females**		
Occupation	Obs	Mean	Std. Dev.	Min	Max
1	30	27,741.00	22545.01	2,500	89,700
2	34	36,993.18	23104.31	12,000	87,320
3	32	24,239.06	14383.22	10,000	70,000
4	38	19,579.03	12400.57	4,898	50,000
5	74	13,321.89	9145.495	3,000	55,000
6	48	5,090.28	3956.204	917	17,067
7	31	7,290.32	2740.116	4,000	

Total income			**Males**		
Occupation	Obs	Mean	Std. Dev.	Min	Max
1	50	**30,981.73**	26403.87	2,500	105,000
2	36	**37,631.94**	24350.19	8,500	117,000
3	32	**24,987.22**	15141.59	7,500	60,000
4	22	**23,088.64**	16358.45	5,000	70,000
5	55	**18,178.27**	20677.2	2,800	115,000
6	68	**10,437.87**	7038.428	4,000	40,000
7	63	5,845.35	2093.248	4,000	15,000

Note: Obs. stand for number of observations

Table 5.3 indicates that males have greater earnings than females in the same occupations with an exception for occupation 7 where females earn more. The difference in the variance among the seven series of occupations was carried out. The p-value was found to be less than 0.05, so it may be concluded that at least two occupations provided different mean values of variance in earnings (see Appendix A for details). As a result, the p-value is 0.0001, which is much less than 0.05. The result

can reject the null hypothesis, Ho: All occupations are not providing different median earnings values. Thus, due to the values that rejected the null hypothesis, at least two occupations are providing different values of medians on earnings.

This study confirms that different skills in different occupations lead to different incomes. The marginal product equals the wage in a perfectly competitive market. However, the labor market is not perfectly competitive, so wages are smaller than marginal products[14]. Thus, the employer would prefer to pay workers by the concept of productivity. In view of productivity, there are many reasons embedded. One issue is the non-cognitive skills commonly valued by the employer. In addition, different incomes among different occupations involve different employers' expectations, i.e., the so called "Occupational Specification."

[14] Frank, Robert H. (1984)

Table 5.4 Weighted Least Square by Occupations , Without Non-cognitive Skills

Dependent : lnw	OCC1	OCC 2	OCC 3	OCC 4	OCC 5	OCC 6	OCC 7
Year of Schooling	0.1024346***	0.0179581	0.1630403***	0.0367532	0.0825024***	0.0391811**	0.0328973**
	(0.0234528)	(0.0200014)	(0.0459598)	(0.0361263)	(0.0223375)	(0.0199687)	(0.0142069)
Year of Work	0.0731664**	0.0595943***	0.0822065***	0.0756746***	0.0574818**	0.0765053***	0.0182063
Experience	(0.0318129)	(0.0183823)	(0.0229533)	(0.0198147)	(0.024984)	(0.0135645)	(0.014541)
Year of Work	-0.0000965	-0.000088**	-0.0001602**	-0.0000584	-0.0000284	-0.0001357***	-0.0000298
Experience^2	(7.230E-05)	(0.0000361)	(0.0000694)	(0.0000405)	(0.0000878)	(0.0000247)	(0.000035)
Training Hour	0.0004439	0.0028677**	0.0014156	0.0046276*	0.0010774	0.0039592	0.0047924
	(0.0021718)	(0.0011744)	(0.0008267)	(0.0024097)	(0.0013522)	(0.0024488)	(0.0035057)
Male	0.2651118*	-0.0949781	-0.2790865**	0.1986372	-0.0839832	0.4166086***	-0.1878814**
	(0.1568132)	(0.0905986)	(0.1271483)	(0.121485)	(0.1024439)	(0.1611319)	(0.0800389)
Father Schooling	-0.0119621	0.0009887	0.0072474	0.0283504**	-0.0071919	-0.0292016	0.0002755
	(0.0173595)	(0.0131055)	(0.0146492)	(0.0115577)	(0.0118697)	(0.0250395)	(0.0100007)
Mother Schooling	0.0169887	0.0024972	-0.0261910	0.0176278*	-0.0033668	0.0510559*	-0.0239133*
	(0.0194723)	(0.0146476)	(0.0167361)	(0.0100978)	(0.013462)	(0.0272762)	(0.013439)
Live KKN	0.0033002	0.0096670	0.0251259***	-0.0106958	-0.0010640	-0.0055908	0.0150597**
	(0.0045858)	(0.006349)	(0.0062948)	(0.0074874)	(0.0079014)	(0.0127612)	(0.0072504)

Table 5.4 (Continued)

Dependent : lnw	OCC1	OCC 2	OCC 3	OCC 4	OCC 5	OCC 6	OCC 7
English skill	0.0533674**	0.0396425*	0.0175585	0.0441147	0.0277807*	0.0295908*	-0.0031017
	(0.0222369)	(0.0222788)	(0.0247998)	(0.0276019)	(0.0168619)	(0.0156837)	(0.0140659)
Esan skill	-0.0657490	0.0121631	0.0237863	-0.0444553***	-0.0672432	-0.0830198**	-0.0050508
	(0.0299974)	(0.0213849)	(0.0431478)	(0.0258047)	(0.0279218)	(0.04007)	(0.0175738)
Illness Work	0.0073752	-0.0526695	-0.1624597	-0.1016782**	-0.0270725	0.0004659	-0.0627733**
	(0.0798404)	(0.0507334)	(0.0812266)	(0.0443785)	(0.0500598)	(0.0423725)	(0.0301476)
Constant	7.492414***	8.7441140	6.554523***	7.877968***	8.236498***	8.00947***	8.5856150
	(0.4819695)	(0.4394715)	(0.9350089)	(0.6998281)	(0.5232759)	(0.4935526)	(0.2689967)
R^2	0.6384	0.5309	0.5536	0.6558	0.4521	0.4531	0.4003
Adjusted R^2	0.5799	0.4420	0.4592	0.5770	0.4006	0.3952	0.3198

Heteroskedasticity-robust standard errors in parentheses

*** is statistically significant at 0.01level and
** is statistically significant at 0.05 level, and
* is statistically significant at 0.1 level

5.3 Occupational Specification

From the regression results on earnings across occupations, years in schooling emerges as seems significant explanatory variables for all occupations, except for professionals and clerks. Plant and Machine Operators and Assemblers workers are occupation that the number of years of work experience is not statistically significant.[15]

Family interaction plays an important role in determining earnings for clerks, craft and related trades. Considering social capital through a period of time in living in Khonkean, it was determined that Technicians and Associate Professionals, plant, machine operators and assemblers, presented positive effects on earnings. More specifically, the longer they stay in Khonkaen, the more money they earn. Nevertheless, with some other occupations, the period of time did not affect their earnings due to the fact that many workers have come from nearby provinces around Khonkaen, such as Kalasin, Burirum, Roy-ed, Srisaket, and Ubolratchathanee.

It was also found that language can affect earnings, i.e., English language skill is important for senior officials, managers, and professional shop attendants, craft and related trades. Within these occupations, employers gave high recognition on the English skills of workers. The reason for this is that Khonkaen is the academic center of the province. However, skills in the Esan language had a negative effect upon the earnings of clerks, Craft and Related Trades Workers. This could be attributable to the sizes of firms, since the Khonkaen labor market comprises of large firms, some of which are international. Therefore, the skill in

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[15] The findings are consistent with Kerckhoff, Raudenbush and Glennie (2001) who proved empirically that education attainment measured by level of education positively affected earnings. Training hours also enhances earnings for the case of professionals and clerks.

using the English language is more likely to be important than other language skills.

When it comes to the health problem factor for clerks, plant, machine operators and assemblers' workers, these workers possessed quite a serious case when the number of people absent from their working days was relatively high, particularly with the machine operators and assemblers who work on the production line or un-skilled labors. Their cumulative number of days being absenting from their work (due to sickness) directly affects their earnings. Therefore, in *OCC*7 it can be said that the health of workers are more advantageous than their colleagues in that they can go to work regularly.

In addition to cognitive skills and health, twelve non-cognitive skills affect earnings in seven occupations as shown in Table 5.5.

Table 5.5 Ordinary Least Square by Occupations including non-cognitive skills

Dependent : lnEarning	OCC1	OCC2	OCC3	OCC4	OCC5	OCC6	OCC7
Years of Schooling	0.1012866***		0.0915413**		0.0583909***	0.0480738**	0.0230797**
	(0.0203441)		(0.042808)		(0.0204314)	(0.0213597)	(0.0097013)
Years of Work	0.0244748***	0.0781493***	0.0227728***	0.0450179***	0.0449111***	0.0664881***	0.0143618**
Experience	(0.0085887)	(0.0135972)	(0.0065588)	(0.005895)	(0.0082297)	(0.0147794)	(0.0062957)
Years of Work		-0.0001119***				-0.0001159***	
Experience^2		(0.0000287)				(0.0000219)	
Training Hours		0.0022359**	0.0014552**	0.0068545***		0.0054552**	
		(0.0009702)	(0.0006072)	(0.0017695)		(0.0028091)	
Male							
Father's Schooling				0.0373492***		-0.0546919**	
				(0.0089326)		(0.0228192)	
Mother's	0.0317267**		-0.0346564***			0.0752469**	-0.0428275**
Schooling	(0.016173)		(0.0099548)			(0.0312969)	(0.0166268)
Live KKN			0.0294596***	-0.0131317**			
			(0.0070948)	(0.0053253)			
English Skill	0.0443142*	0.0521715***		0.0559894***	0.0263174*	0.0762643***	
	(0.0242367)	(0.0180114)		(0.020062)	(0.0160744)	(0.0223814)	

Table 5.5 (Continued)

Dependent : lnEarning	OCC1	OCC2	OCC3	OCC4	OCC5	OCC6	OCC7
Esan skill					-0.0432589*		-0.0231049*
					(0.0258511)		(0.012623)
Illness				-0.1062988***			-0.0888447***
				(0.037824)			(0.023968)
Openness	-0.049934*						0.0230395**
	(0.0287178)						(0.0104327)
Conscientiousness		0.0589545***					
		(0.0216266)					
Extraversion							
Agreeableness							
Neuroticism							
Self	0.0223215*						
	(0.0123256)						

Table 5.5 (Continued)

Dependent : lnEarning	OCC1	OCC2	OCC3	OCC4	OCC5	OCC6	OCC7
Locus	0.0221672**				0.0094364**		
	(0.0091271)				(0.0037841)		
Conflict	-0.0226528**		0.0174556**	0.0289135***	-0.0109532**	-0.025275**	
	(0.0098338)		(0.008493)	(0.0065358)	(0.0052386)	(0.0125757)	
Withdrawing					**0.0391529****		
					(0.017654)		
Forcing		0.043451**	-0.0341003*	-0.053625***			
		(0.0172201)	(0.0198053)	(0.0159735)			
Smoothing					-0.0478066**		
					(0.0245293)		
Confronting	0.0477296**		0.0899929***				-0.0240554**
	(0.0212161)		(0.0224874)				(0.0102076)
Compromising	-0.0781876**			-0.0572406***	-0.0513915**		0.0288966***
	(0.0357983)			(0.0211222)	(0.0257893)		(0.0095581)

Table 5.5 (Continued)

Dependent : lnEarning	OCC1	OCC2	OCC3	OCC4	OCC5	OCC6	OCC7
Constant	5.779988***	7.891034***	7.198336***	9.119053***	7.686119***	8.169869***	8.410651***
	(0.6811462)	(0.4135563)	(0.7602762)	(0.4257756)	(0.484241)	(0.4244812)	(0.2048617)
R^2	0.6922	0.5623	0.5804	0.7481	0.4556	0.4866	0.3463
Adjusted R^2	0.6475	0.5206	0.5194	0.7028	0.4271	0.4323	0.2823

Note: Some blank coefficients are not reported here due to not being statistically significant in the models.

Heteroskedasticity-robust standard errors in parentheses
*** statistically significant at 0.01level
** statistically significant at 0.05 level
* statistically significant at 0.1 level

Successes in working live due to non-cognitive traits are expressed by regression calculations, as shown in Table 5.5 are fully discussed below.

5.3.1 Senior Officials and Managers (*OCC1*)

This occupation group finds individuals who possess a role of leadership in their respective organizations. Years of schooling and English skill seem to be an important requirement for this job. Similar to a number of studies family background, cognitive skills, or education attainment, enhance earnings and affect labor market in a positive effects.

Non-cognitive skills are found significant in explaining labor earning as well. As a result, a Chief Executive Officer (CEO) should behave as follows:

1). Openness, it is known as a qualified trait of a CEO. Creativity, imaginative, intellectual are the characteristics included in openness. However, this result only gave a negative effect at a 90 percent confidence interval. It may be inferred that with the case of openness, it seems to possess poor leadership. Therefore, this trait seems to give a negative impact on the prediction of earnings.

2) Self-esteem, this characteristic supported a positive attitude, which may lead to an increase in productivity and enhance wages.

3) LOC, this characteristic can enhance earnings. It has an internal LOC, which is greater than an external LOC. Workers who has self-confidence, rather than destiny, will earn more than those who believe in fate

4) Confronting, it was found that confronting characteristics have a mean value of 0.0477. It signifies that all CEOs or managers should solve any conflict by confronting themselves with the problems, rather than compromising. Confronting the conflict was considered to be the best solution in firm operations.[16]

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[16] This results is consistent with Feltner and Goodsell (1972)

5) Compromising action is at the opposite end of confronting, due to the concept that the traits establish new alternative outlets, in that the two groups may attain their preferable condition on the outcome. Nonetheless, for this study, it was found that this trait did not provide the appreciable value of the correlation coefficient (-0.0782).

5.3.2 Professionals (*OCC2*)

Years of work experience, training hours, and English skills are important to professionals, which require a high level of competency specific to their jobs. However, diminishing earnings will occur in additional years of work experiences upon a long term working (coefficient is -0.000112). Professionals could be a specific characteristic that requires a high level of self-confidence. Hence, this behavior would be present through "forcing," when they encounter any conflict. Normally, forcing manner is a human behavior that concentrates on working, rather than possessing any friendly relationship. Particularly, doctors, professors, and researchers, are more likely that their working behaviors seem to be quite independent from others. For example, a doctor responsible for his patient's life must depend on his own ability so that his solution to conflict is usually categorical The supported forcing traits, leadership characteristics may lead to successful achievement in their professional career. Any person who has high effectiveness, or conscientiousness, sometimes solves the conflict by win-lose results with the use of the so called "forcing." The result on the positive effects of conscientiousness and forcing are illustrated in Table 5.5; they can support the behavior of professionals who use these traits where it might enhance future earnings. This may be contradicted in the concept of psychology, i.e., forcing might not be an appropriate device to solve conflicts (Burke, 1970: 393).

5.3.3 Technicians and Associate Professionals (*OCC3*)

All cognitive variables found in Table 5.5 (years of schooling, years of work experience, years of work experience square, and training hours) have positive effects on earnings, which are in the line with Mincerian's model. In addition, family interaction through the number of years in schooling of the mother also positively affected future earnings. Moreover, in such a career, it is needed to take more periods

of time at Khonkaen for schooling. From an intensive interview, it was found that almost all workers who had accumulated their work experiences renounced that it provided good assistance to their professionals and smart technicians. Therefore, workers who stayed longer in school can earn more.[17]

Non-cognitive skills expected from employers are that they behave as a confronting trait, not as a forcing trait, to others when any conflict arises. This considers that confrontation takes place in an open exchange with respect to the situation, i.e., both parties can win. This point can be interpreted as an efficient teamwork. It may lead to higher productivity and be positive to earnings. Forcing (win-lose) is a contrary behavior to confrontation and resulted in a negative sign (Table 5.5).

5.3.4 Clerks (*OCC4*)

Likewise, all *OCC3* factors of cognitive skills significantly affected earnings, except English language. Thus, English language skill is not required in this career. Notice that a sign written as "Live in KKN" is negative. Almost all workers have come from other provinces. Illness significantly affects earnings of clerk professions, where the type of work is a routine responsibility, so the number of days absent from work would decrease earnings. The negative sign of "forcing" and "compromising" imply that the expectations of employers could be relatively low in both forcing and compromising where it may indicate that clerks should be the followers due to some behavior of leader are forcing and compromising. However, this result is opposite from skill standard called "Accounting Service: Accounts Payable Clerk: OD2001" which set a problem solving competency for clerk is a "brainstorming"--is a way of confronting and compromising (American Institute of Professional Bookkeepers,

[17] Wage structure could be the evidence necessary to explain the case. It was found with almost all respondents in the metropolis city (Mueang District, Khon Kaen Province) who attained jobs at medium and large firms or even at the Khon Kaen University, which has a flat wage structure. Hence, workers have to continue working for a considerable period of time in order to obtain a marginal increase in wages.

2001: 2-3). It might be explained by the reason that clerk who employed in Khonkaen province should behave to avoid the conflict with a good follower rather than brainstorming.

5.3.5 Shop attendants (*OCC5*)

Shop attendants in Khonkaen province share activities among customers who attained medium up to high levels of education (such as motor salesman and presenters of medicinal products). Therefore, salesman who attained a higher level of schooling, lots of work experience for years, and are able to communicate in English, gain high attention from their employer. Hence, their wages could be higher.

Only one significant item on non-cognitive skills is a trait name, the "LOC." For example, salesman who believes in fate would have lower earnings than those who trust in self-confidence and are able to do the job with a high effort. Effort in terms of economist prospects is a productivity which may be considered via the marginal product of labor. Even though the market, in this case, is not a competitive market (MP = Wage), but more or less a wage that can be a determinant upon effort

5.3.6 Craft and Related Trades Workers (*OCC6*)

This career in terms of cognitive skills, except father's years of schooling, all gave significant variables that possess reasonable explanations. However, a negative effect in the case of father's years of schooling may be explained by psychological reasons (Figure 2.2). Is non-cognitive skills significantly affected by future earnings? By conforming the model on leadership, which is not necessary to this career, workers who always withdraw from problems of conflict avoid smoothing and compromising and may obtain some benefits. Normally, Craft and Related Trades Workers normally avoid conflict and conform themselves to their job assignments. Thus, the role of leadership competency may not be useful for them (Table 5.5).

Table 5.6 indicates that the father's years of schooling are lower than their children at approximately 50 percent. It could be inferred that children have improved their education level over their parents. It was found that low levels of education of parents may drive motivation in children. Thus, the children possess motivation in achieving higher education in the future.

Table 5.6 Level of education in *OCC6*

Variable	Obs.	Mean	Std. Dev.	Min	Max
Worker's year of schooling	116	8.99	4.277576	1	17
Worker's Father Schooling	116	4.85	2.801411	0	16

5.3.7 Plant and Machine Operators and Assemblers (*OCC7*)

Similar to *OOC6*, some cognitive variables (years of schooling and work experience) positively affect labor market outcomes for plant and machine operators and assembles workers. However, the local language ("Esan language") adversely affects their earnings. This is due to the fact that all workers, who attained low levels of education among all occupations, have a similar manner as *OCC6* (8.99 and 9.53 years, Table 4.2). Table 5.7 shows the low number of schooling years of mothers closely related to 50 percent that are comparable to their children, which can be given the same reason as that of *OCC6*.

Table 5.7 Educational attainment for *OCC7*

Year of schooling	Obs.	Mean	Std. Dev.	Min	Max
Workers	94	9.53	3.092489	4	16
Workers' mother Schooling	94	4.16	1.654601	0	16

Plant, machine operators and assemblers are the workers who receive their wages every two weeks. Hence, if workers cannot report to work, then their daily wages are deducted by their employers, e.g., the absence made by their illness. Notice that the illness's coefficient is -0.0888 (negative to earnings), thus, the number of working days has an important impact on their wages.

From all occupational choices, it was found that each choice requires specific personal characteristics.

The Big-five personality, called 'openness,' is positive (0.0230). It was found that female workers with high levels of openness attain higher wages. Considering

two-personality conflicts, i.e., win-win solution, a negative effect was obtained when confronting. This means that workers should not deal with conflict by the win-win solution. However, it may be inferred that the fifty-fifty solution might be a better alternative solution.

All significant cognitive and non-cognitive variables shown in Table 5.5 possess important correlations to the maximum effects. This study illustrates the difference in wages in different occupations that could be explained in cognitive skills and non-cognitive skills (Figure 5.1).

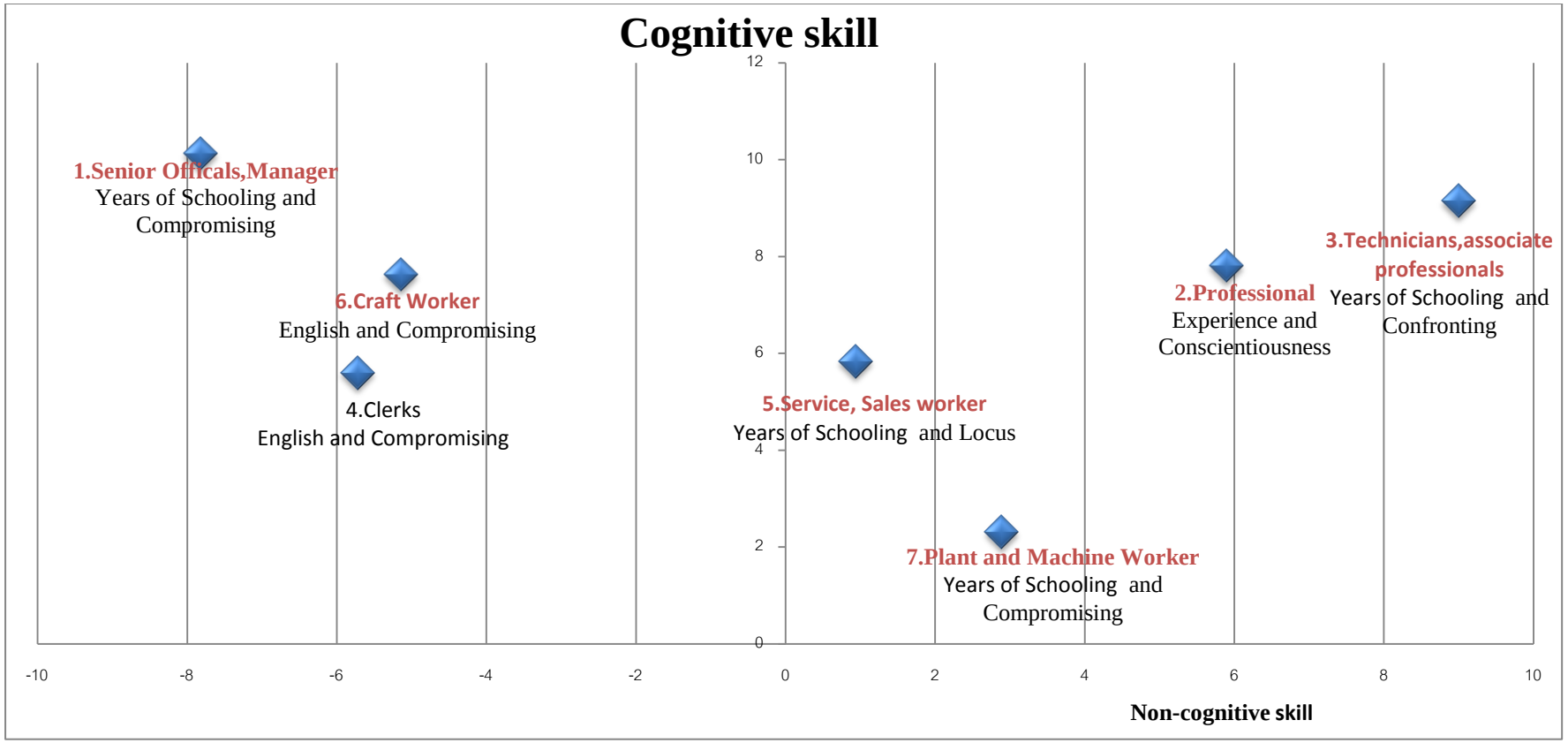

Figure 5.1 Effects of Cognitive and Non-cognitive skills on Earnings by Occupations

Figure 5.1 shows the effects of cognitive and non-cognitive skills on earnings. The composition of Figure 5.1 illustrates a pair of cognitive and non-cognitive skills, which are a maximum effective value to future earnings (select from the highest value of significant coefficient). For example, the maximum coefficient of the cognitive variable that affects earnings in *OCC1* is years of schooling and the maximum coefficient of non-cognitive skills is compromising as seen in the box as "school and compromising." Negative effects of compromising on earnings can be interpreted that leaders who are chief executive officer should not compromise with problems and conflicts.

From figure 5.1, we can compare Cog and NC in each occupation. In *OCC*1, the leaders of companies, the labor market expects a cognitive skill in educational level which is higher than any of other occupations. Less important is *OCC*3, *OCC*5, and *OCC*7 respectively. According to the importance of experience, gaining high experience is necessary for *OCC*2 due to the traits of occupation that accumulate gradual experience since the first day of the work. For Non-cognitive skills, compromising affects income in both positive and negative direction, depending on which occupation we consider. For instance, in the occupation that needs utmost decision like *OCC*1, compromising affects income negatively. This is also true for *OCC*4 and *OCC*6. However, the very same disposition positively affects income of workers in *OCC*7 which needs to follow order. When they encounter conflict, compromising is better for them.

CHAPTER 6

NON-COGNITIVE SKILLS AND MALE-FEMALE WAGE DIFFERENTIALS

6.1 Non-Cognitive Skills and Gender Wage Differentials

Several authors have emphasized many important aspects in attracting and retaining minorities of women in economics. It was found that not many women labor force have been overwhelmingly welcomed in the various professions.[18] The reason behind this may cause by society, tradition, and over discrimination where they tend to make restrictive pattern, the terms by which woman may participate in the labor force(Oaxaca, 1973: 693)

To prove that non-cognitive skills can purify the unexplained term in the decomposition of some wage differentials. If non-cognitive skill is one of the determinants on wage, then the intercepted term for the wage equation, the so called "discrimination", may possess less effectiveness on wage model. With the result derived from the earning equation of *OCC6*: the craft and related trades workers which could be selected upon the reason that *OCC6* is occupation that gender has its highest significance (model without non-cognitive, Table 5.3 found in Chapter 5).

As the samples in this study are not normally distributed the Mann-Whitney Test is used as a comparison tool. Table 6.1 presents some traits differences due to genders in terms of openness, conscientiousness, agreeableness, withdrawing, smoothing, and confronting.

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[18] Sanborn Henry (1964); Cohen (1971)

Table 6.1 Non-cognitive Scores in *OCC6*

Non cognitive Traits	Female	Male	Prob -Z Male-Female	Mean	Min	Max
Locus of control	94.91	**96.06**	0.4330	81.29	48	119
Self-Esteem	41.64	**42.23**	0.8267	55.96	26	73
Openness	13.22	**13.88**	**0.0423 ****	13.38	3	18
Conscientiousness	**13.91**	13.48	**0.0886 ***	13.84	6	18
Extraversion	**11.86**	11.56	0.8605	12.19	4	18
Agreeableness	**14.81**	14.39	**0.0299 ****	14.76	7	18
Neuroticism	10.09	**10.52**	0.3528	9.90	3	18
Withdrawing	**13.46**	12.70	**0.0184 ****	12.99	3	18
Forcing	5.97	**6.51**	0.6244	6.09	3	18
Smoothing	**14.52**	14.06	**0.0992***	14.35	5	18
Confronting	**12.99**	12.59	**0.0036 *****	12.62	3	18
Compromising	**15.36**	14.94	0.1515	15.14	5	18

*** statistically significant at 0.01level

** statistically significant at 0.05 level

* statistically significant at 0.1 level

Bold number presents a higher score between male and female

As a whole the openness score for males is greater than that of females; conscientiousness, agreeableness, withdrawing, smoothing, and confronting score of females are higher than males. However, it is interesting to further explore careers that males and females show significant difference in each of non-cognitive traits.

Table 6.2 Non-cognitive Scores: 12 Personalities Different by Gender

Non-cognitive skills	***OCC1***	***OCC2***	***OCC3***	***OCC4***	***OCC5***	***OCC6***	***OCC7***
1.Locus of Control						.0055***	
2.Self-Esteem				.0837*			
3.Openness	.0866*	.0029***					
4.Conscientiousness		.0077***		.0793*			
5.Extravesion							
6.Agreeableness	.0611*	.0025***	.0639*			.0042***	
7.Nueroticism						.0144**	
8.Withdrawing							
9.Forcing		.0050***		.0257**		.0909**	
10.Smoothing						.0000***	
11.Confronting		.0584*	.0009***			.0004***	
12.Compromising				.0930*		.0000***	.0328**

*** statistically significant at 0.01level

** statistically significant at 0.05 level

* statistically significant at 0.1 level

OCC1: Senior officials and managers, OCC2: Professionals, OCC3: Technicians and Associate Professionals, OCC4: Clerks, OCC5: Shop attendants, OCC6: Craft and Related Trades Workers, OCC7: Plant and Machine Operators and Assemblers

Results from two-sample Wilcoxon rank-sum (Mann-Whitney) test as seen in table 6.2 which present difference in median score in occupation by gender, for *OCC6,* a lot of traits are different by gender, namely LOC, agreeableness, neuroticism, forcing, smoothing, confronting, and compromising. However, at the opposite end, men and women in *OCC5* are similar in all traits. In other words, both male and female workers behave identically in their jobs.

6.2 Gender Wage Gap and Decomposition Technique

Male and female workers earn different pays for a number of reasons. This study attempts to argue for one possible cause coming from a different performance and personality.

Previously, for employed women, job conditions that encourage self-direction are related to effective intellectual functioning and an open, flexible orientation to others. Those that constrain opportunities for self-direction are related to ineffective intellectual functioning and a rigid social orientation. "For women, as for men, occupational conditions have a decided psychological impact"[19]

Earlier in Chapter 5 men and women in senior officials and managers (*OCC1*), technicians and associate professionals (*OCC3*), craft and related trade workers *(OCC6)*, and plant and machine operators and assembles workers (*OCC7*) earn differently, particularly male workers in craft and related trade workers *(OCC6)* significantly earn more than female. Previous study related to gender wage differential between male and female, Oaxaca (1973) explained this gap through by the decomposition technique. The reasons explaining this gap are employee's endowment (years of schooling and work experience) and employer's judgment. However, there are some unexplained reasons in this gap. For example, the same occupation with same years of schooling and work experience shows different earnings.

Therefore, we have further linked to the hypothesis of "Does non-cognitive skill play the part of unexplained terms in earnings equation?" and "What happen if we refine this factor out of unexplained term?" The expectation answer could be shown as the significance of non-cognitive skills that can reduce the proportion of the unexplained, which several economists called "Gender Discrimination."[20] Therefore, focusing on *OCC6*, Table 6.3 presents the mean statistics of males and females.

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[19] Miller, et al. (1979)

[20] Chiplin, Brain (1979)

Large differences of earnings, as seen in Table 6.3, present male's earnings average of 10,437.87, while female's is 5,090 baht per month. In addition, male workers have more years of schooling than female workers. In contrast, females have more work experience and training hours than male.

Considering the factors of English skills, illness, and some non-cognitive skills, there could be the explanatory factors of the differences due to a large margin between genders in these variables. Table 6.4 and 6.5 show the significant factors to future earnings, and compare with and without non-cognitive skills in the earnings equation.

Table 6.3 Samples Mean for Craft and Related Trades Workers (*OCC6*) by Gender

Variable	Mean of all variables	
	Male	**Female**
Earnings	10,437.87	5,090.28
ln Earnings	9.10	8.18
Years of Schooling	11.40	5.56
Years of Work Experience	11.61	18.45
Years of Work Experience^2	2,427.33	6,598.52
Ttraining Hours	10.16	26
English Skill	9.91	5.94
Esan Skill	9.28	9.83
Father's Schooling	4.94	4.73
Mother's Schooling	4.37	3.92
LiveKKN	2.04	2.19
Illness_work	0.82	1.52
Openness	13.34	13.60
Conscientious	13.79	14.13
Extraversion	11.96	12.75
Agreeableness	14.44	15.44
Neuroticism	9.96	8.42
Withdrawing	12.54	13.06
Forcing	5.54	5.65
Smoothing	13.72	15.81
Confronting	11.91	13.71
Compromising	14.56	16.48
Self	54.37	59.52
Locus	81.17	75.92
Conflict	1.84	1.96

Table 6.4 WLS: Earnings Function for Craft and Related Trades Workers (*OCC6*) with Non-cognitive Skill**s**

Variables	Male			Female		
	Coefficient	**Robust S.E.**	**t-Ratio**	**Coefficient**	**Robust S.E.**	**t-Ratio**
Intercept	7.8596	0.8171	9.62***	8.1576	2.7050	3.02***
Years of Schooling	0.0488	0.0242	2.02**	-0.0019	0.0522	-0.04
Years of Work Experience	0.0667	0.0281	2.38**	0.0751	0.0493	1.52
Years of Work Experience2	-0.0001	0.0001	-1.39	-0.0001	0.0001	-1.53
Training Hours	0.0047	0.0034	1.38	0.0095	0.0043	2.21**
English Skill	0.0041	0.0153	0.27	0.0393	0.0527	0.75
Esan Skill	-0.0720	0.0474	-1.52	-0.1688	0.0758	-2.23**
Father's Schooling	-0.0059	0.0282	-0.21	-0.0148	0.0136	-1.09
Mother's Schooling	0.0140	0.0382	0.37	0.2007	0.0815	2.46**
LiveKKN	0.0010	0.0150	0.07	-0.0306	0.1372	-0.22
Illness	0.0370	0.0512	0.72	0.1100	0.0975	1.13
Openness	-0.0137	0.0378	-0.36	0.0780	0.0776	1.00
Conscientious	0.0059	0.0307	0.19	-0.1454	0.0973	-1.49
Extraversion	-0.0131	0.0284	-0.46	-0.1442	0.0641	-2.25**
Agreeableness	0.0401	0.0474	0.85	-0.0580	0.1015	-0.57
Neuroticism	-0.0025	0.0215	-0.12	-0.0062	0.0414	-0.15
Withdrawing	0.0021	0.0180	0.12	0.0663	0.0226	2.94***
Forcing	0.0308	0.0140	2.2**	0.0221	0.0198	1.11
Smoothing	-0.0155	0.0182	-0.85	-0.0236	0.1727	-0.14
Confronting	-0.0024	0.0274	-0.09	0.0535	0.0348	1.54
Compromising	-0.0127	0.0321	-0.4	-0.0591	0.0500	-1.18
Self	0.0126	0.0129	0.98	-0.2137	0.0956	-2.23**
Locus	0.0006	0.0053	0.11	-0.0560	0.0684	-0.82
Conflict	-0.1170	0.0602	-1.93	0.0311	0.1056	0.29

***statistically significant at 0.01level
** statistically significant at 0.05 level
* statistically significant at 0.1 level

Table 6.5 WLS: Earnings Function for Craft and Related Trades Workers (*OCC6*) without Non-cognitive Skill s

Variables	Male			Female		
	Coefficient	**Robust S.E.**	**t-Ratio**	**Coefficient**	**Robust S.E.**	**t-Ratio**
Intercept	8.59	0.55	15.72***	7.97	0.93	8.61***
Years of Schooling	0.044	0.02	2.14**	-0.065	0.031	-2.14**
Work Experience	0.08	0.019	4.31***	-0.055	0.028	-1.96**
(Work Experience)^2	-0.000116	0.000045	-2.6***	0.000063	0.000038	1.64*
Training Hours	0.0017	0.0023	0.76	0.0098	0.004	2.25**
English Skill	-0.0023	0.014	-0.17	0.18	0.04	4.72***
Esan Skill	-0.077	0.05	-1.52	-0.018	0.065	-0.28
Father's Schooling	-0.013	0.02	-0.61	0.003	0.036	0.09
Mother's Schooling	0.02	0.03	0.75	-0.000137	0.06	0
LiveKKN	-0.0019	0.013	-0.14	-0.0055	0.014	-0.38
Illness	0.03	0.046	0.67	0.0175	0.09	0.2

Table 6.6 Oaxaca-Blinder Decomposition Technique

Without NC		With NC	
E	**V**	**E**	**V**
0.259	0.610	0.285	0.145
-0.551	2.497	-0.456	-0.867
0.483	-1.178	0.340	1.074
-0.027	-0.210	-0.074	-0.158
-0.009	-1.092	0.016	-0.142
0.043	-0.577	0.040	2.126
-0.003	-0.075	-0.001	0.204
0.009	0.080	0.006	-0.636
0.000	0.008	0.000	0.100

Table 6.6 (Continued)

Without NC		With NC	
E	**V**	**E**	**V**
-0.021	0.020	-0.026	-0.090
		0.004	-0.547
		-0.002	2.487
		0.010	2.200
		-0.040	1.627
		-0.004	0.233
		-0.001	-0.631
		-0.003	-0.045
		0.032	0.661
		0.004	-0.357
		0.024	1.503
		-0.065	13.483
		0.003	4.652
		0.014	0.058

Table 6.7 Oaxaca-Blinder Decomposition Summary

Without NC		With NC	
E	0.183	***E***	0.107
V	0.083	***V***	27.079
R	0.621	***R***	-0.298
Total difference	0.887	Total difference	26.888
%R of Total different earnings	69.94	%R of Total different earnings	-1.11

Consider Craft and Related Trades Workers (OCC6), the earnings function was estimated for both disaggregated groups and for the whole sample. An F-test was

performed to verify if significant differences exist between the earnings functions of large and small firms. The F-statistic was significant at the 0.01 level. The empirical results in Tables 6.5 and 6.6 indicate that all coefficient estimates have the expected signs.

These coefficient estimates and the sample means from Table 6.3 yield the Oaxaca-Blinder decomposition presented in Table 6.6, where positive figures represent higher wages for male employees. Considering two cases, one is without non-cognitive skills in the model and the second is with non-cognitive skills in the model. As a result, Table 6.7 presents the ratio of the residual portion of the differential to total differential from the two cases.

The first case, without non-cognitive skill, illustrates the residual portion of the differential to the total different from the two cases (69.94%). This ratio has declined if the model adds non-cognitive skills inside (-1.11%) (consider absolute vale). Percentages of the residual to the total illustrate different declines after the non-cognitive skills are added to the model. An implication is that non-cognitive skill is a factor significant to earnings. Moreover, the gap in wage between genders can be explained by non-cognitive skills. For example, in *OCC6*, the non-cognitive skill named "forcing" (positive to earnings) in the case of male workers in Mueang district, Khonkaen province, is an appropriate measure as it can be noticed from the positive coefficient of income.

For female workers, some of the non-cognitive skills named "extraversion" affect earnings negatively. This fact could be from Esan tradition that female should behave demurely. The next significant disposition is withdrawing which affect earnings positively. This is how workers solve conflict by running away from conflict instead of solving it, which is not a leader characteristic.[21] However, according to the study, smoothing is leniency, which should affect earnings positively, but happen to have negative effect perhaps due to data limitation. Self-esteem is the optimistic and self-confident behaviors which are embedded in female, and affect earnings positively

[21] This is consistent with Weerapong Worrawat (2008) stating that females should be followers more than leaders.

"self-esteem." (positive to earnings) This is the main reason for gender's wage difference (Table 6.4).

All significant non-cognitive variables from Table 6.4 show in Table 6.8 where illustrates the non-cognitive skills between genders of this occupation (*OCC 6*). Forcing, Extraversion, Withdrawing, Smoothing, and Self-Esteem are significant traits affecting the personality of gender. Those mean scores of traits in females are greater than those of males (Mann-Whitney test is employed by the reason of non-normality distribution). From scores in Table 6.8, the dispositions statistically different between male and female are **forcing, smoothing, and self-esteem**. Each of these is demonstrated in female more than male. When compared with dispositions affecting earnings, female's dispositions that have impact upon earnings and have dissimilarity between gender are **smoothing and self-esteem** (see Table 5.5). Thus, in case of Mueang district, Khonkaen province, smoothing and self-esteem are two dispositions responsible for statistically significant difference in earnings.

Table 6.8 Non-cognitive skills by gender

Non-cognitive Skills	Mann-withney test	Male		Female	
	Prob>Z	Mean Score	Std.Err.	Mean Score	Std.Err.
Forcing	0.0909**	5.54	0.36	**5.65**	0.62
Extraversion	0.1672	11.96	0.33	12.75	0.33
Withdrawing	0.1994	12.54	0.40	13.06	0.65
Smoothing	**0.0000*** **	13.72	0.35	**15.81**	0.36
Self-Esteem	**0.0001*** **	54.37	0.74	**59.52**	1.21

In conclusion with this technique, it is found in the forecasted equations that there is an item left out unexplained (residual term). Thus for this study, the item on non-cognitive skills will be added into the earnings equation for both male and female workers hence with the unable explained item, it may be possible that the non-

cognitive skill within the equation could be the endogenous variables where it gave differences in income between male and female workers.

CHAPTER 7

SUMMARY AND POLICY IMPLICATIONS

7.1 Summary

It is well established that natives of northeastern region (or Esan) have their own distinctive culture and tradition. The society as a whole is that of patriarchal society, i.e. males are generally recognized and accepted by members of the society as leaders. This is, more or less, similar to many other countries around the world. Males have a dominant role in family leaders; while female members tend to take a passive role as followers. This indicates that males do the planning and set the direction for the family to go forward. So it is males who will provide essential elements for the family in achieving their goals. This domestic tradition has long been practiced from generation to generation and in most parts of the world (Roongwi Mart-ngam-mueng quoted in Weerapong Worrawat, 2008).

In Esan society, it is well justified that girls will be prepared by their parents while growing up for skills and responsibilities are considered necessary and desirable for good wives and mothers. This has been practiced as an old tradition that all children must obey and follow. This practice has long since turned out to be essential part of family life and married women have accepted it as their way of live wholeheartedly. On the other hand, boys must be well equipped for a leading role in the family. Thus having possible highest schooling will ensure finding a good job and high pays enough to support their families. Over the time, this Esan tradition has differently shaped its male and female off springs both psychologically and behaviorally.

7.1.1 Non-Cognitive Skills: Male

It is found that males' scores are higher than those of females only in terms of openness and the difference is large and statistically significant. One possible explanation is leadership performance since men have had far more greater leadership to lead the family, thus scoring higher on openness. Openness is one of the important characteristics of male who possesses leadership performance. With this characteristic, it includes creative mind, complicated thinking and learning fast in most disciplines. These may be the reasons why male workers attain priority in job opportunities, social recognition, and ability to attain higher income than those of female workers (Muller and Turnur, 2010: 437-448).

7.1.2 Non-Cognitive Skills: Female

For five non-cognitive scores, i.e. agreeableness, conscientiousness, withdrawing, smoothing, and confronting, females' scores are found higher than those of their male counterparts. The differences are large and statistically significant. On agreeableness, it reveals that females possess warmth, understanding, and caring for others. As a result female workers tend to be good followers. The results are consistent with a study by Weerapong Worawat (2008) on Esan social communities which stated that male is the leader whilst female is the follower. Male establishes a plan for activities and female has to be the person who put them into practice. Therefore, it may be inferred that Esan community is a patriarchal society. On conscientiousness, the results show that females perform better in carrying out the tasks, i.e., they neatly and carefully perform their jobs systematically. A case in point on weaving job, female workers have gone through different steps in preparing for weaving garments and handicrafts. Their products turn out beautifully and neatly. When it comes to withdrawing, it is found that female workers possess means and ways to solve any confrontation problems differently from males. The difference is large and statistically significant. Females could withdraw themselves from problems easily thanks to their behavioral characteristics as the followers. On smoothing, this may be due to their overwhelming mind as a result of being the followers, not the leaders. They could be able to solve out any conflicts with a smooth environment instead of carrying confrontation on by offering new outlets to solve out the problems.

Therefore, the results derived from this investigation carried out at Khonkaen Province signify that among all of the five non-cognitive skills, females possess superior behavior and personality traits than male. The differences are large and statistically significant.

7.1.3 Non-Cognitive Skills Commom to Workers in Mueang District, Khonkaen Province

The results on non-cognitive skills of male and female workers on locus of control reveal that they are similar with scores higher than 60 %. The results indicate that Esan people believe in themselves more than fate. This was found in people who live in Mueng District. Hence it is possible that they may believe in themselves. Another similar result is found with the item on self-esteem as seen on table 6.1, where this item receives the scores nearly in moderate level (score around 42, average score is 56) when they possess a moderate degree of self-esteem. On extraversion, it is a kind of a social function that both male and female have shown off their high confidential attitudes towards outspoken gesture or even readiness in facing any problems and both give a similar score. Finally, with the item on compromising when some conflicts are arising, it reveals that both male and female possess similar attitude to solve problems, i.e. both could manage to meet half way of any compromising issue. This reflects Esan people on the concepts that they naturally conform to their tradition, thus easily trusting other people. When facing problems, they could always make a compromising decision.

Although Esan male and female have many traits in common, types of their jobs indicate some significant differences in non-cognitive skills, taking a case of craft and related trades workers. This profession requires, in general, specialized workers equipped with a very high level of skills. The results in chapter 6 show that male and female workers in this occupation differ substantially in a range of traits, namely, locus of control; agreeableness, neuroticism, forcing, smoothing, confronting, and compromising.

7.2 Policy Implication: Before Labor Markets Entry

Policy implication in enhancing cognitive skills, in general, is a need for workers to attain some kinds of training before joining labor markets. it is recognized that a kind of general trainings is required for some non-cognitive skills but more specialized trainings are needed for some specific labor markets. This may be developed through some particular disciplines for some specific professions. Perhaps, all kinds of required skills being advocated within this work are responsibilities of teachers and parents due to the reason that these two institutes have so much influence on workers. The background on the implication is that all of the cognitive skills (include English skill) requires advices from school teachers. The school teachers have to consider and support student's skills. With some particular skills upon non-cognitive skills, parents should provide some good practices to their children. For various training courses including the Buddhist teaching course, they are all important learning sources for parents to search for their children to attend. Any of the attended courses has its significant value and they are soon embedded as non-cognitive skills to their kids who will become workers in the labor markets.

To enhance labor competencies or in other words to reduce a mismatch among labor markets, all family and academic institution should emphasize on what is needed for their children and they must put forward questions about how we can educate and assemble labor force in terms of traits and personalities. Normally, parents and teachers have to think about suitable training conforming to behavior and personality of the children. However, from this study, it is found that some non-cognitive skills do enhance future earnings but some personalities limit their opportunities. With the results of previous researchers, they revealed that it is well advocated that personality traits are rewarded items on labor markets because they are associated with a better outcome due to better attraction. Employers presumably seek to use both cognitive and non-cognitive measurements when recruiting labors for their company because they aim to acquire as much information as possible on hand in relation to their potential employees (Farkas, 2003: 553). Therefore, the parental role in preparing labor force before going to labor markets is upbringing, and academic

institutions mean academic management. i.e., counseling. These roles are described as follows.

7.2.1 The Role of Family on Non-Cognitive Skills

In view of the Mincer earning function, it was stated that labor income depended most on the attained level of education (Mincer, 1958: 281-302). When considering educational background of parents upon the feedback on income of their children on some professions, it is found in this study that legislators, senior officials, managers and clerks who attained adequate background of schooling encourage better income for their children. When parents attained a good level of education, their children future income will be relatively high. It is found with those legislators, senior officials and managers that educational background of the mothers encourages high income of their children, whilst educational background of the fathers of the clerk profession encourages high income for their children. This finding confirms the work reported by Rossetti and Tanda (2000:5-34) where they stated that educational background of parents has significant impact on income of their children. Therefore, it may be possible to advice on wage policy that family institution has its impact on income of their children. Thus parental education should be adequate where it reflects income of their children. The better the parents' educational attainment, the better the education and income of their children including living conditions. In addition to parental income which will positively affect children income, parents should pay attention to non-cognitive traits of their children for the jobs they are suited in order to prepare their off springs to labor markets. Furthermore, parents should encourage dominant traits by emphasizing their children to be the center of enhancing their potential. For instance, if they like to be leaders, parents should then encourage their self-assertiveness, self confidence, and their resolution. If they like to do works with efficiency and responsibility, parents might convince them that for jobs like teachers, physicians, engineers, etc, they should plan their own future because their personality will augment their future income.

7.2.2 The Role of Schooling on Non-Cognitive Skills

Before labors have participated in the labor markets there is some inadequacy of non-cognitive skill education. Nowadays, for the mass production of education system, particularly for undergraduate level, there is serious weakness in a mismatching issue between employers and employees. In many cases, schools do not show enough effort in cooperating with firms in order to reduce this gap of cognitive and non-cognitive skills between employer's expectation and employee's skills, i.e., leadership, team spirit, etc. (Ashvin Ahuja et al., 2006; Yongyuth Chalamwong, 2006). In some particular curriculum, it provided no appropriate direction to educate students to be prepared for specific qualification in each occupation for the approaching future earnings.

At present, Thailand has already involved with free trading contract where education is an item on free trade thus the Thai institutions must offer international academic standard in all institutions and they are mainly under responsibility of the Ministry of Education. All of the learning bodies must be accounted for their academic performance to meet the requirements of the Thai Qualifications Framework for Higher Education (TQF). This educational standard requires that all offering courses must provide knowledge on morality, ethics and their contents must be competitive ones where they could compete with other institutions under management of the Office of the Higher Education Commission 2011. Up to this present time, there has been no evaluation process taken place for graduates with respect to non-cognitive skills. There is a question to be asked whether the graduates attain adequate knowledge on these aspects or not. Therefore, each curriculum should contain elements on professional careers, i.e. approximately 70 % of the whole course units should emphasize on professional subjects with good behavioral and personal traits. These elements have been widely described by public without revising the inner elements. Although some university professional subjects have been newly offered, but there are still relatively few at the school level e.g ,Demonstration School for primary and secondary education have few subjecs relating to non-cognitive skills in their curricula.

When we considered levels for students' development on non-cognitive skills, there is little emphasis on non-cognitive skill development. Thus, Ministry of Education of Thailand are required to have core subjects as of the established Charter of 2008. It is found that for subjects emphasizing on non-cognitive skills on different aspects such as a good teamwork, a high responsibility, and an ability to solve out the problems, all together are given only 8 % of all subjects (P1 –P6, primary school) with an increase to 20 % (M1-M3, secondary school) and 47 % for M4 up to M6 (Ministry of Education, 2008). However, it is found that the highest percentage was lower than 50 %. When students continue their undergraduate studies, Thai universities have improved their curricula on general education approximately 20% of total credits.

The course contained subjects on humanity, social sciences, and morality and ethics, while psychology subjects and some non-cognitive skills are included in a group of management skills (human skills) where they comprises: (1) Life Skills (morality and ethnics, aesthetic); (2) Social/Organization Responsibility, (3) Leadership, (4) Morality (ethics, team working). Students are required to enroll for two subjects with 6 units or only 4 to 5 percent. In order to better attractive traits of students to employers, only 4-5 percent of all units might prove difficult to learn and improve their own personalities. Four mentioned aspects are good development despite insufficient units. If academic institutions at all levels perceive the importance of creating good workers more than intelligent workers, they may concurrently assimilate non-cognitive skills in harmony with what is taught from the texts, i.e., classroom activities, group projects, or community services, etc. When mentioning creating the good before the intelligent, in case of Thailand where the majority of residents are Buddhists there was one academic executive using this concept under the hypothesis that intelligence follows virtue. (Art-ong Jumsai Na Ayudhya, 2003).

7.2.3 The Good Practice on Non-Cognitive Skills in Schools in Thailand

Although the existing educational curriculum has been applied among public schools, there is none of a clear cut evaluation carried out to identify that the schools have been successfully attained its outstanding academic performance among students

including the important items on decorum and courtesy. It is found that some private schools have realized and intended to build up students to be morally well behaved rather than to produce bright and outstanding students upon their academic performance alone, but they taught their students with religious aspects.

There are common linkages between good behavior and religious precepts. The teaching of Buddhism is one of the religions that provide definitions in achieving good personalities, for instance, caring, sharing, forgiving, and many others. In this contest, a community school, namely "Institute of Sathysai", was established in Petchaboon Province with a focus on merit rather than intelligence based on the Buddha's teaching, Actually, Sathyasai Institutes are in many parts of the world, such as India, USA, Philippines, Malaysia, Singapore, Thailand, Vietnam, Austria, China, Japan, and etc. Nowadays, there are 53 Sathyasai schools around the world. Not only have schools been established, but in some countries Sathyasai Foundation has also been established where they teach Buddhism to students.

For Thai people, they concern most on how to enhance good traits of students through educational system. For example, the Sathyasai School has been offering both primary and secondary school levels. This educational body has been established for 16 years by Dr. Art-ong Jumsai Na Ayudhya (Art-ong Jumsai Na Ayudhya, 2003). He has introduced methods of carrying out research on human values where the work has included an item on an integrated learning concept.

The action research carried out by Dr. Art-ong Jumsai Na Ayudhya includes the gathering of information to answer a set of learning processes through the six activities mentioned earlier. Then the non-cognitive skills have been changing from time to time. In return, most students who receive training from school (Sathyasai) would have good nature and become good citizens. In turn, all students from passed national entrance examination continued on in stride to higher education. However, there is no tested evidence to confirm how much difference between the outcomes of this school comparing with that of other schools in terms of non-cognitive skills, and there is no research evidence to ensure that the Sathyasai's students benefit more from non-cognitive skills for their future earnings.

In the case of Demonstration School at Khon Kaen University, its reputation has come from their new innovative teaching methods which are attractive for

outstanding students in Northeastern region.This can be seen from a consistently large pool of student applications taking school entrance exams year after year. This school has its own curriculum but more or less it conforms to the curriculum granted by the Ministry of Education. It is found that there are 3 periods per week out of 80 periods per week emphasizing on teaching non-cognitive skills (Satit Khon Kaen University 2011).Additionally, the school also offers extra curriculum activities for students to develop teamwork skills including sport day, language and cultural working camps. The students are free to choose the activities that appeal to them.

7.3 Policy Implication: After Participating in Labor Markets

Khonkaen has just one training center which is under state management, i.e. Khonkaen Skill Labor Training Center. This center has been offering various training programs for the general public covering on courses in mechanics, car driving, and computer skills. Attendants are predominately men while the training on household chores, say, cooking and sewing clothes is offered for women. One course being offered for both man and women is the use of foreign languages, such as English, Japanese, and Korean (see appendix A, Figure 2), but it takes a small portion (10%) of all courses offered, and is available once in 18 months period. Unfortunately, the course on leadership is relatively insignificant(Department of Skill Development, 2011).

The training courses being offered by the government put an emphasis mainly on upgrading professional skills. The center fails to offer training for individual development in non-cognitive skills such as the training on changing working attitudes, behavior, and personal traits. It is imperative that the government should pay more attention to the development on individual attitudes through training in both general and specific skills in behavior and personal traits. It is surprising to know that non-cognitive skill development received more attention for a long time in private sectors as seen from their relatively high spending on their training programs (when considering private companies that offer such services). There is a program on personality development established by private sector, e.g. John Robert Power Co., Ltd; Personality Development Co., Ltd and many other companies in the markets.

Mostly, courses being offered emphasize clients from private sector because they serve employer's expectation, i.e., elocution, personality development, advanced leadership development, etc. This confirms that the training on non-cognitive skills could be possible to develop them when training program is offered. Thus the government should pay more attention on this particular skill apart from other essential skills needed for a high competency of the jobs.

7.3.1 The Improvement on Individual Occupation with Respect to Cognitive and Non-Cognitive Skills

According to the competency of labor, it is essential to use different instrument for measurement. First, Human Capital Approach (HCA) looks at a number of years in schooling, standard test score, training, work experience, and wage. Second, Work-Centered or Situative Approach (WCA) measures worker proficiency via both education and current workplace, in which the micro-level must be determined. Then, the use of the WCA is needed as measurement. Third, at a broader level, it is worthwhile to scrutinize the competency model which serves as a test of performance and a self assessment report needed to evaluate preference, attitude, and behavioral observation such as an interview, observed behavior.[22]

Cognitive and Non-cognitive skills, so far, possess their important role in human capital. An investment in these skills should originally be generated from families, schools, and finally on the job training. Both skills could be produced from parents, teachers, and employers. From case studies, we can conclude that the most anticipated cognitive skill is years of schooling which is found in Legislators, Senior Officials and Managers , Technicians and Associate Professions , Shop Attendants, and Plant and Machine Operators. For Professional, years of work experience prove more advantageous in determining income than years of schooling. As for the findings about non-cognitive skills, case studies find that compromising, which is the way to conciliate conflicts, can either have positive or negative effect across occupations. It

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[22] Yongyuth Chalamwong and al., et. (2004)

has positive effect in Plant and Machine Operators but negative effect in Legislators, Senior Officials and Managers, Craft and Related Trades Workers, and Clerks.

It is interesting that the trait called locus of control only affect Shop Attendants while conscientiousness positively affect income raise in Professional. This is consistent with the fact that these occupations, i.e., physicians, teachers, etc, rely on correctness and efficiency in working.

Based on empirical results shown in this research,[23] one may conclude that the non-cognitive skills are dominant across occupations. It is essential for family and school to have an active role in providing non-cognitive skills whilst children are at an early age. When they get older, the responsibility shifts to firms. Here, workers will receive training to improve their personality traits

7.3.2 Language Capacity in Khonkaen Worker Skills

It is found that English language is a key determinant of future earnings especially Legislators, Senior Officials and Managers, Professionals, Shop attendants, and Craft and related trades workers. A recent result in International English Language Testing System (IELTS) for Asian students has revealed that Thai students have a moderate score of 5.5 (out of a full score of 9). Against standard score, Thai students' competency is not impressive and lower than that of Malaysia, Korea, Japan, and Indonesia but higher than that of Vietnam and China (see Appendix A, Figure3).

For undergraduate students at Khon Kaen University (KKU), English language skill seems to be the poorest of all skills (including general skill, specific

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[23] Likewise, Hernández-Marcha, Martin del Peso and Leguey stated that employers expect and value the following competencies, i.e. technical field-specific knowledge, interpersonal skill as well as some ability related to the communication skill, and the teamwork spirit. An implication from Hernández-Marcha's work is that employees, the graduate students in higher education, should have been generated by the balance between the cognitive and the non-cognitive skills.

skill, punctuation, responsibility) in 2008. Employee who graduated from Khon Kaen University attained a satisfactory level (approximately 68 %) on the English language capacity (Office of Quality Management, 2008: 1-88). Therefore, the education provider at all levels i.e. primary, secondary and tertiary education should devote greater effort in learning process of English skills since their students have shown unsatisfactory progress in learning the English language. Some research investigating on this particular learning process may be needed so that Thai labor force could be improved for more prosperous future.

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APPENDICES

APPENDIX A: Empirical Findings

Table 1: Occupations by Gender

Occupation	Legislators, senior officials and managers	Professionals	Technicians and associate professionals	Clerks	Service workers and shop and market sales	Craft and related trades workers	Plant and machine operators and assemblers	Total
Female	30	34	33	38	74	48	31	288
Male	50	36	31	22	55	68	63	325
Total	80	70	64	60	129	116	94	613

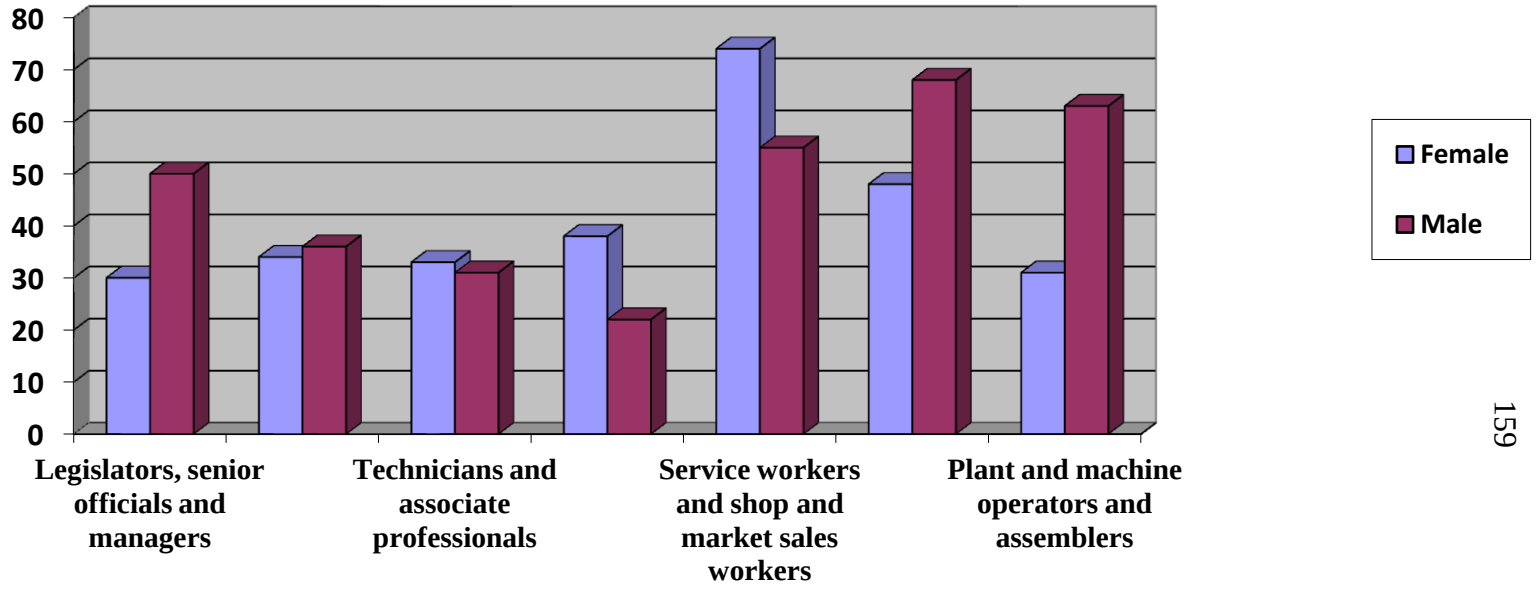

Figure 1: Occupations by Gender

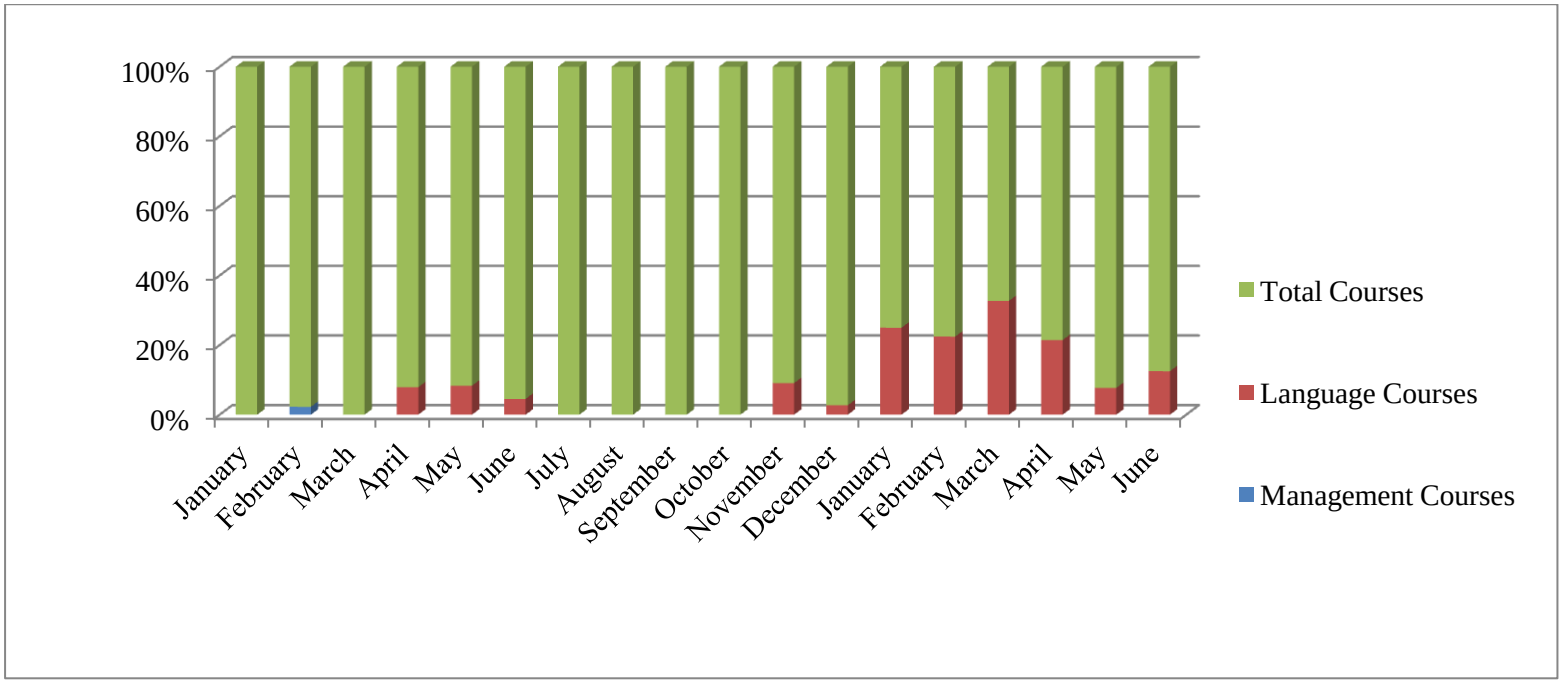

Figure 2 Public Training Course in Khonkaen Province
Source: Department of Skill Development, Ministry of Labor

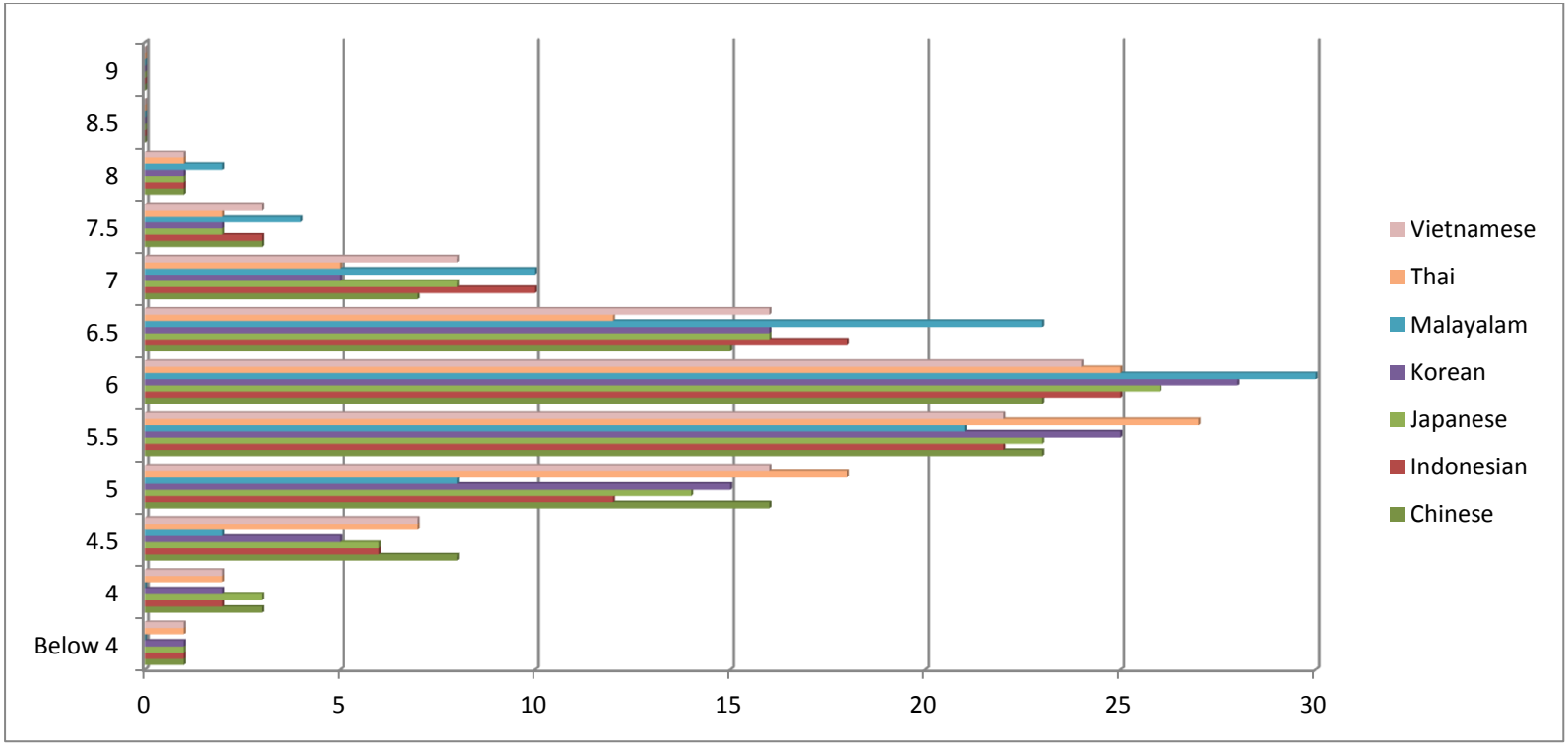

Figure 3 IELT score, 2005
Source: Modified from the Data of Foundation for Life Long Learning in Thailand, 2005

Table 2 Correlations Matrix for Non-cognitive Skills: 12 Variables and Frequency of Conflict

Variables	Conflict	Openness	Conscientious	Extraversion	Agreeableness	Neuroticism	Withdrawn
Conflict	1						
Openness	0.0731	1					
Conscientious	-0.1717*	0.0447	1				
Extraversion	0.025	0.1072	0.1689*	1			
Agreeableness	-0.0871	0.2304*	0.3357*	0.2815*	1		
Neuroticism	0.2189*	0.0837	-0.3140*	0.0562	-0.1957*	1	
Withdrawn	0.0437	0.0415	-0.066	-0.0738	0.0256	0.0326	1
Forcing	0.3048*	0.0017	-0.2501*	0.0281	-0.2209*	0.2657*	0.0191
Smoothing	-0.1179	0.1751*	0.1818*	0.1098	0.2550*	-0.2154*	0.2927*
Confronting	0.0729	0.1639*	-0.0383	-0.0295	0.0689	0.0553	0.4090*
Compromising	-0.1	0.2479*	0.1509*	0.0935	0.2082*	-0.0704	0.3482*
Self	-0.1388*	0.2008*	0.3419*	0.1874*	0.2549*	-0.2261*	0.0717
Locus	-0.0457	0.1656*	0.1068	0.0725	0.1763*	-0.1208	0.0953

Table 2 (Continued)

Variables	Forcing	Smoothing	Confronting	Compromising	Self	Locus
Forcing	1					
Smoothing	-0.049	1				
Confronting	0.1055	0.3724*	1			
Compromising	-0.1842*	0.5521*	0.4839*	1		
Self	-0.1787*	0.3838*	0.1187	0.3534*	1	
Locus	-0.2290*	0.1599*	0.0751	0.2122*	0.2997*	1

* is statistically significant at 0.05 level

Use Sidak-adjusted significance level

Table 3 Means and Standard Deviations

Variable	Obs	Mean	Std. Dev.	Min.	Max.
Total income	613	18,523.69	18,315.38	916.67	117,000
Year sch	613	13.36	4.73	1	27
Year exp	613	11.49	9.85	0.08	53
Year exp squared	613	2,746.90	4,433.82	0.08	33,708
training_hour	613	21.87	33.70	0	300
Male	613	0.53	0.50	0	1
OCC					
1	613	0.13			
2	613	0.11			
3	613	0.10			
4	613	0.10			
5	613	0.21			
6	613	0.19			
7	613	0.15			
FatherSch	613	6.87	4.88	0	23
MothSch	613	5.92	4.39	0	18
LiveKKN	613	5.04	9.25	0	44
English_skill	613	10.56	3.61	4	20
Esan skill	613	8.78	1.86	2	10
Illness	613	0.82	1.06	0	5
Openness	613	13.38	2.07	3	18
Conscientiousness	613	13.84	2.16	6	18
Extraversion	613	12.19	2.90	4	18
Agreeableness	613	14.76	2.01	7	18
Neuroticism	613	9.90	3.63	3	18
Withdrawn	613	12.99	3.17	3	18
Forcing	613	6.09	3.19	3	18

Table 3 (Continued)

Variable	Obs	Mean	Std. Dev.	Min.	Max.
Smoothing	613	14.35	2.72	5	18
Confronting	613	12.62	2.87	3	18
Compromising	613	15.14	2.37	5	18
Self-esteem	613	55.96	6.55	26	73
Locus	613	81.29	10.32	48	119
Conflict	613	1. 9	1.13	1	6

Table 3.1 How Often Do You Encounter Conflicts in a Month?

Conflict Issue	Number of Conflicts
Communication	2.08
Attitude/Belief	1.96
Relationship	1.49
Power/Authority	1.17
Finance/Money	0.77

Table 4 Means and Standard Deviations by Gender

Males

Variable	Obs	Mean	Std. Dev.	Min.	Max.
Earnings	326	19,292.07	20,108.07	2,500	117,000
Year sch.	326	13.35	4.36	1	27
Year exp.	326	11.84	8.99	0.08	40.67
Year exp.2	326	2,647.81	3,505.35	0.08	19,845.33
Training hour	326	19.12	27.76	0	200
OCC					
1	326	0.15			
2	326	0.11			
3	326	0.10			
4	326	0.07			
5	326	0.17			
6	326	0.21			
7	326	0.19			
Father Sch.	326	6.72	4.73	0	19
Moth Sch.	326	5.75	4.28	0	18
Live KKN	326	4.73	8.71	0	41
English skill	326	10.56	3.40	4	20
Esan skill	326	8.81	1.86	2	10
Illness	326	0.77	1.00	0	5
Openness	326	13.56	2.04	3	18
Conscientious	326	13.68	2.19	8	18
Extraversion	326	12.17	2.90	4	18
Agreeableness	326	14.56	1.93	8	18
Neuroticism	326	10.13	3.54	3	18
Withdrawn	326	12.67	3.21	3	18

Table 4 (Continued)

Variable	Obs	Mean	Std. Dev.	Min.	Max.
Forcing	326	6.22	3.16	3	18
Smoothing	326	14.06	2.71	5	18
Confronting	326	12.29	2.90	4	18
Compromising	326	14.81	2.50	5	18
Confronting	326	12.29	2.90	4	18
Compromising	326	14.81	2.50	5	18
Self	326	55.66	6.24	36	72
Locus	326	81.75	10.64	54	119
Conflict	326	1.96	1.13	1	6

Females

Variable	Obs	Mean	Std. Dev.	Min.	Max.
Earnings	287	17650.89	16028.54	916.67	89700
Year sch.	287	13.37	5.13	4	26
Year exp	287	11.10	10.75	0.08	53
Year exp squared	287	2859.46	5299.07	0.08	33708
Training hour	287	25.00	39.19	0	300
OCC					
2	287	0.12	0.32	0	1
3	287	0.11	0.32	0	1
4	287	0.13	0.34	0	1
5	287	0.26	0.44	0	1
6	287	0.17	0.37	0	1
7	287	0.11	0.31	0	1

Table 4 (Continued)

Variable	Obs	Mean	Std. Dev.	Min.	Max.
Father Sch.	287	7.03	5.05	0	23
Moth Sch.	287	6.11	4.50	0	18
Live KKN	287	5.40	9.83	0	44
English skill	287	10.56	3.84	4	20
Esan skill	287	8.74	1.86	3	10
Illness	287	0.88	1.12	0	5
Openness	287	13.18	2.09	7	18
Conscientious.	287	14.02	2.12	6	18
Extraversion	287	12.22	2.91	4	18
Agreeableness	287	14.98	2.08	7	18
Neuroticism	287	9.64	3.72	3	17
Withdrawn	287	13.36	3.09	3	18
Forcing	287	5.95	3.22	3	18
Smoothing	287	14.68	2.69	5	18
Confronting	287	12.99	2.79	3	18
Compromising	287	15.52	2.16	5	18
Self	287	56.31	6.88	26	73
Locus	287	80.75	9.95	48	113
Conflict	287	1.85	1.13	1	6

Table 5 Non-Cognitive Score by Occupations

Occupation	**OCC = 1**	**OCC = 2**	**OCC = 3**	**OCC = 4**	**OCC = 5**	**OCC = 6**	**OCC = 7**
Number of Obs.	**80**	**70**	**64**	**60**	**129**	**116**	**94**
Locus of Control							
Mean	83.59	83.64	81.77	82.97	80.30	78.97	80.39
Std. Dev.	10.62	10.87	9.29	9.77	11.37	9.64	9.30
Self-Esteem							
Mean	57.18	56.79	56.42	54.33	54.93	56.50	55.80
Std. Dev.	6.01	6.50	6.36	6.30	6.39	7.57	5.95
Openness							
Mean	13.45	13.44	13.44	13.13	13.61	13.45	12.99
Std. Dev.	2.04	2.29	1.82	1.76	1.98	1.97	2.45
Conscientiousness							
Mean	13.99	13.04	14.17	12.97	13.72	13.93	14.69
Std. Dev.	2.16	2.09	2.09	2.36	2.18	2.13	1.77

Table 5 (Continued)

Occupation	**OCC = 1**	**OCC = 2**	**OCC = 3**	**OCC = 4**	**OCC = 5**	**OCC = 6**	**OCC = 7**
Number of Obs.	**80**	**70**	**64**	**60**	**129**	**116**	**94**
Extraversion							
Mean	12.11	11.44	11.84	11.67	12.47	12.28	12.89
Std. Dev.	2.84	3.33	2.86	2.70	3.09	2.55	2.76
Agreeableness							
Mean	14.81	14.37	14.64	14.18	15.13	14.85	14.80
Std. Dev.	1.90	1.90	1.78	2.64	2.27	1.78	1.68
Neuroticism							
Mean	9.23	9.80	9.61	9.83	11.15	9.32	9.80
Std. Dev.	3.46	3.59	3.28	3.37	3.74	3.61	3.73
Withdrawn							
Mean	12.14	14.00	12.66	13.58	13.26	12.76	12.74
Std. Dev.	3.86	2.25	2.63	2.36	2.94	3.80	3.13
Forcing							
Mean	5.96	5.71	6.38	6.18	7.13	5.59	5.45
Std. Dev.	2.91	2.62	2.80	3.27	3.62	3.58	2.50

Table 5 (Continued)

Occupation	**OCC = 1**	**OCC = 2**	**OCC = 3**	**OCC = 4**	**OCC = 5**	**OCC = 6**	**OCC = 7**
Number of Obs.	**80**	**70**	**64**	**60**	**129**	**116**	**94**
Smoothing							
Mean	14.46	14.37	14.03	14.08	14.31	14.59	14.41
Std. Dev.	2.53	2.49	2.23	3.04	2.76	2.92	2.83
Confronting							
Mean	12.00	13.13	12.52	12.92	13.07	12.66	11.99
Std. Dev.	3.61	2.38	2.36	2.56	2.44	3.02	3.17
Compromising							
Mean	15.50	15.47	14.86	14.72	15.23	15.35	14.68
Std. Dev.	2.56	1.86	2.01	2.26	2.12	2.57	2.83

Note: *OCC1: Senior officials and managers; OCC2: Professionals; OCC3: Technicians and associate professionals; OCC4: Clerk; OCC5: Service workers in shop and market sales; OCC6: Craft and related trades workers; OCC7: Plant and machine operators and assemblers.*

Table 6 Correlation

Correlation	total income	year of schooling	years of experience	years of experience squared	training	father's schooling	mother's schooling
tot income	1						
year of schooling	0.5428	1					
year_exp	0.3788	-0.0584	1				
year_exp squared	0.2806	-0.0899	0.9335	1			
training	0.2605	0.1748	0.1506	0.1246	1		
father schooling	0.1559	0.3448	-0.1333	-0.0941	0.1108	1	
mother schooling	0.1087	0.3401	-0.2036	-0.1644	0.0917	0.7249	1
LiveKKN	0.4385	0.3081	0.3863	0.3437	0.1777	0.0521	0.0219
English_skill	0.3811	0.6821	-0.1776	-0.1863	0.1064	0.3508	0.3853
Esan_skill	-0.2968	-0.2989	-0.0789	-0.076	-0.0614	-0.2452	-0.2382
illness	-0.0945	-0.1965	0.194	0.2056	-0.0087	0.0312	-0.0049
Gender*type of firm	-0.1106	-0.1427	-0.0744	-0.1075	-0.1954	-0.1222	-0.1114
Gender*training	0.2399	0.1351	0.1365	0.0888	0.5056	0.0751	0.0309
Gender*primary	0.0447	-0.0027	0.0375	-0.0238	-0.0871	-0.0318	-0.0413

Table 6 (Continued)

Correlation	LiveKKN	English_skill	Esan_skill	illness	Gender_type of firm	Gender_training	Gender_primary
LiveKKN	1						
English_skill	0.1896	1					
Esan_skill	-0.1974	-0.2839	1				
illness_work	0.0092	-0.1306	-0.0566	1			
Gender*type of firm	-0.1127	-0.0523	0.0605	-0.0227	1		
Gender*training	0.1183	0.0568	-0.0117	-0.0481	0.1845	1	
Gender*primary	-0.0361	-0.0009	0.02	-0.0512	0.8582	0.4269	1
Gender*first_second	0.0063	0.1508	0.0008	-0.0854	0.7339	0.3935	0.8775
Gender*second_second	0.0532	0.2001	-0.0827	-0.0701	0.4382	0.2802	0.5671
Gender*bachelor	0.2188	0.2666	-0.1585	-0.0831	0.1635	0.4547	0.4677
Gender*master	0.2093	0.2497	-0.151	-0.0366	0.0016	0.3126	0.2887
Gender*doctoral	0.0981	0.2297	-0.103	0.0281	-0.0258	0.1453	0.1585
Gender*year schooling	0.0711	0.1816	-0.0498	-0.0848	0.6848	0.4727	0.9028

Table 6 (Continued)

Correlation	Gender* first_second	Gender* second_second	Gender* bachelor	Gender* master	Gender* doctoral	Gender* years schooling
Gender*first_second	1					
Gender*second_second	0.6462	1				
Gender*bachelor	0.533	0.5202	1			
Gender*master	0.329	0.3648	0.6172	1		
Gender*doctoral	0.1806	0.2346	0.3388	0.4783	1	
Gender*year schooling	0.9265	0.689	0.7092	0.5075	0.3291	1

Table 7 Coefficient of Interactiom Terms

Correlation	total income	year of schooling	years of experience	years of experience squared	training	father's schooling	mother's schooling
Gender*first_second	0.1195	0.207	0.0139	-0.0366	-0.0639	0.0129	-0.0012
Gender*second_second	0.1411	0.2747	-0.0391	-0.0517	-0.024	0.0831	0.0718
Gender*bachelor	0.4134	0.4463	0.1164	0.0603	0.1286	0.1704	0.1798
Gender*master	0.3307	0.3844	0.0861	0.0416	0.1006	0.1918	0.2043
Gender*doctoral	0.2913	0.2898	0.0586	0.0198	0.0377	0.186	0.198
Gender*year schooling	0.2173	0.286	0.0521	-0.0112	-0.0207	0.0687	0.0594

Place of work .....……**Rd.**.....**Tel**.....	**No. [ ]**
Respondent's name.....……**Tel**.....	**Team** .....
Collector's name..... …….**Tel**.....	**Date...../…../09**

APPENDIX B: Questionnaire

Questionnaire: Attitudes of Workers in Amphur Mueang, Khonkaen Province

This questionnaire is a part of Ph.D. thesis undertaken by Mrs. Jongrak Hong-ngam, a doctoral candidate at the National Institute of Development Administration (NIDA). Survey results would support schools in their curriculum management for quality human resource and productive labor force.

Instruction: The questionnaire is intended for workers in the list of ISCO occupations. Respondents must give their answers individually. Data collected will be kept confidential and treated with extremely care in the analysis.

Part 1: General information

1. Gender □ Male □ Female
2. Age…….years
3. Occupation (ISCO classification)

□ 1) Senior officials and managers (Dean, CEO, General manager, Manager, etc.)

□ 2) Professionals (Teacher, Professor, Doctor, Dentist, Pharmacist, etc.)

□ 3) Technicians and associate professionals (Lab technician, Medical assistant, Research assistant, Purchasing staff etc.)

□ 4) Clerks (Cashier, Accountant, etc.)

□ 5) Service workers and shop and market sales (Pretty in auto showroom, Sales rep., etc.)

□ 6) Craft and related trades workers (Machinery technicians, Handy craft, Chef, etc.)

□ 7) Plant and machine operators and assemblers (Worker in production line, etc.)

□ 8) Other (Specify).....

3.1 Type of Organization □ Public Sector □ State Enterprise □ Private Sector □ Other.....

4. Years of experience _____years_____months

5. Years of previous experience _____ years_____months

6. Current Salary _____Baht

7. Other earnings (monthly average)_____ Baht

8. **Educational Attainment**

8.1 **Education Level**	8.2 **Type of School**	8.3 **School Activity**
( ) **Elementary**	( ) **Gov.** ( ) **Private**	
( ) **Lower secondary school**	( ) **Gov.** ( ) **Private**	( ) *Head* ( ) *Member* ( ) *Never*
( ) **Upper secondary school**	( ) **Gov.** ( ) **Private**	( ) *Head* ( ) *Member* ( ) *Never*
( ) **Vocational**	( ) **Gov.** ( ) **Private**	( ) *Head* ( ) *Member* ( ) *Never*
( ) **Bachelor**(….years)	( ) **Gov.** ( ) **Private**	( ) *Head* ( ) *Member* ( ) *Never*
( ) **Master(.....years)**	( ) **Thailand** ( ) **Overseas**	( ) *Head* ( ) *Member* ( ) *Never*
( ) **Doctoral** (.....**years**)	( ) **Thailand** ( ) **Overseas**	( ) *Head* ( ) *Member* ( ) *Never*

Family Background

9.1 Parents' years of schooling

9.1.1 Father.....(.....years) 9.1.2 Mother.....(.....years)

9.2 Parents' occupation

9.2.1 Father (.....) 9.2.2 Mother (.....)

☐ (1) Public Sector (or retiree) ☐ (2) Part-time/temporary workers

☐ (3) Private Sector ☐ (4) Own business

☐ (5) Unemployed/housewife ☐ (6) Farmer

☐ (7) State Enterprise (or retiree)

9.3 Parents' marital status when you were 14 years old

□1. Married □2. Separated □3. Divorced □4.Father deceased □5. Mother deceased

□6. Both deceased □7. Other.....

9.4 Marital Status

□1. Single (go to question 12)

□2. Married husband/wife age .....years; his/her years of schooling..... years

□3. Divorced □4. Legally separated □5. Widowed

9.5 Current type of family

□ 1. Single family

□ 2. Extended family

10. Do you have any children?

□ 1. No (go to question 12) □ 2. Yes

11.1 Gender and ages of children

1st child □ male □ female age _____ years

2nd child □ male □ female age _____ years

3rd child □ male □ female age _____ years

11.2 Who offers the child care service for your babies/toddlers?

□ 1. Myself □ 2. Maternal/paternal grandmother

□ 3. Day care □ 4. Nanny □ 5.Other.....

Training and Development

12. Training in the previous year

Total programs attended ..... hr. Total training hours .....hr.

How much were those training programs relevant to your work?

□Wholly □ Partially □ Not at all

Who financed those programs?

□ Offered free of charge □ Entirely out of my own pocket

□ Partially out of my own pocket □ Fully covered by my company

13. Place of Birth

□ 1. Khonkaen (go to question 13.1)

□ 2. Outside Khonkaen ( ) North ( ) Northeast ( )Central ( ) South ( ) East

Years of residence in Khonkaen .....years

Language Skills

English and Esan Skills	Excellent	Good	Average	Poor	None
13.1 English Speaking					
13.2 English Listening					
13.3 English Reading					
13.4 English Writing					
13.5 Esan Speaking					
13.6 Esan Listening					

Health Status

14. In the previous year, did you have any problem with your health?

□ 1. No □ 2. Yes

Severity of Illness	Very strong	Strong	Average	Weak	Very weak
14.1 My illness affected my work					

Part 2 Motivations /Attitudes/ Behaviors

Section 1 Mini-Markers

I see myself as someone who is …

1. Negligent	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
2. Creative	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
3. Thorough	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
4. Unorganized	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

5. Efficient

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

6. Friendly

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

7. Agitated

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

8. Artistic

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

9. Irritated

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

10. Reserved

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

11. Rude

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

12. Chatty

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

13. Temperament

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

14. Uncompassionate

Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

15. Warm

Strongly agree	Agree	Somewhat agree	Somewhat agree	Disagree	Strongly disagree

Section 2 Locus of Control

1. Bad things to people come from bad luck.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
2. No matter how hard we try to prevent a war, it happens anyway.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
3. It was a case of ill fate for people who have worked very hard but have gone unnoticed.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
4. Without the right breaks, leadership is difficult.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

5. Getting a good job is being in the right place at the right time.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
6. Our world is run by a small group of power and there is not much little guys can do.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
7. It is unwise to plan way ahead because everything has been destined from heaven.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
8. Often times we make decisions by flipping a coin.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
9. Who gets to be the boss is a matter of possessing the right birth fortune for the company.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

10. There really is no such thing as luck.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
11. With good enough effort, we surely can clean up political corruption.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
12. Everything in my life comes from my own doing.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
13. Eventually, people will be held responsible for bad government at local and national levels.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
14. Goodness in me explains how many friends I end up having.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

16. Bad things to people come from their own deeds.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
17. Eventually, talented people will definitely get what they deserve.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
18. Someone is nobody's favorite because he/she can't figure out how to live with others.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
19. Success is earned from working hard. It has nothing to do with luck.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
20. Planning for me is how to chart my own destiny.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

21. Getting what I desire has little or nothing to do with luck.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
22. Being a boss is earned from own abilities. It has nothing to do with luck.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
23. There are times when I feel that I lose control over my life.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

Section 3 Conflict Management

When I encounter a conflict, I will…

1. Be compromising in words.	Always	Often	Quite often	Few	Very few	Never
2. Use power to solve it rather than reasoning or favoring human right.	Always	Often	Quite often	Few	Very few	Never

3. Attempt to avoid it even though it is likely to return later.	Always	Often	Quite often	Few	Very few	Never
4. Do everything to win and eliminate opponents for good.	Always	Often	Quite often	Few	Very few	Never
5. Give and take which is the best solution.	Always	Often	Quite often	Few	Very few	Never
6. Open to ideas and work with others to solve it.	Always	Often	Quite often	Few	Very few	Never
7. Be polite in words.	Always	Often	Quite often	Few	Very few	Never
8. Avoid getting into an argument for it makes me unhappy.	Always	Often	Quite often	Few	Very few	Never
9. Find ways to remove those who disagree with me.	Always	Often	Quite often	Few	Very few	Never
10. Be soft in solving it.	Always	Often	Quite often	Few	Very few	Never
11. Learn to lose which is a better way.	Always	Often	Quite often	Few	Very few	Never
12. Brainstorm with my fellow workers which is the best way.	Always	Often	Quite often	Few	Very few	Never

13. See no point in winning.	Always	Often	Quite often	Few	Very few	Never
14. Get an equal share which is a better way.	Always	Often	Quite often	Few	Very few	Never
15. Be sincere and reliable in solving it.	Always	Often	Quite often	Few	Very few	Never

3.1. How many times did you encounter conflicts in the last three month?

Conflict Issue	**Number of Conflicts**							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**> 6**
11.1 Communication								
11.2 Attitude/Belief								
11.3 Relationship								
11.4 Power/Authority								
11.5 Finance/Money								

Section 4 Self-Esteem

1. I am happy with my life.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
2. Often times, I don't feel good about myself.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
3. I feel that I am talented.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
4. I can do things just like other people.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
5. I feel that I am behind others.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

6. Often times, I feel that times goes by without me doing anything good.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
7. I take pride in my own self.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
8. I wish for a better life.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
9. As a whole, I have a feeling/thought that I am a failure.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree
10. I am positive that there's still hope in life.	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree

BIOGRAPHY

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PRESENT POSITION	Assistant Professor of Faculty of Management Science, Khonkaen University
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