

# THE DEVELOPMENT OF THAI ENGINEERS' POTENTIALS FOR AEC

**Dr. Natnaporn Aeknarajindawat**

*Graduate School, Suan Sunandha Rajabhat University, Thailand*

*Email: natnaporn.ae@ssru.ac.th, touch\_life@outlook.co.th*

## ABSTRACT

The purposes of this research were to (1) study direct influences, indirect influences, and total influences of the factors that affected the development of Thai engineers' potential to enter AEC market (2) to develop the structure model of factors which affected the development of Thai engineers' potential to enter AEC market, and (3) to monitor the congruence of the Thai engineers' potential to enter AEC market. Questionnaire was developed and used as research tool. Sample group included the proportion of engineers who were working with the companies registered with the Thai Industry Association. Statistics used included percentage, means, standard deviation, skewness, alpha and Amos program version 21. The findings revealed that competency had a direct effect to the readiness of Thai engineers ( $p < 0.001$ ) and competency had an indirect effect to the readiness of Thai engineers with no statistical significance. The statistics showed that  $CMIN/DF = 1.102$  and  $p$  value equals to 0.076 and  $GFI = 0.872$  and  $RMSEA = 0.037$ . In addition, the findings also revealed that competency and needs can predict about 12 percent and the total factors can predict about 57 percent.

**Keywords:** Potential Development, Thai Engineers, AEC

## INTRODUCTION

In the modern world, the cooperation with regional level for economic and social enhancement are common such as Europe, America, Asia, and Africa. It is essential for each group of countries to create opportunities and negotiation power to regional level to make certain that their resources would be managed with sustainable level (Ministry of Commerce, Department of International Commerce, 2012). The constant changing in the globalization allows the free movement of the impacts of economics, politics, and technological communications. Therefore, it is essential for each country to cooperate with each other to reap the benefits of globalization (Ratapong and Lakanahatai, 2007). For the South East Asian, there is an integration of 10 ASEAN members called AEC to develop the regional cooperation among the members (Sutantivanichkul, 2011). From the Bali Concord II meeting, there were three main pillars of ASEAN which were ASEAN political security community (APSC), ASEAN economic community (AEC), and ASEAN socio cultural community (ASCC) in order for the ASEAN members will be living together in harmony, good welfare, and social stability (Ministry of tourism and sport, Institution of Human Resources Development, 2016).

Since there are an expansion of economics and level of competitions, especially the impacts from the China and India, it is important to focus on the cooperation of ASEAN members seriously (Ministry of Foreign

Affairs, Department of ASEAN, 2009). Nowadays, there are mutual agreement of the cooperation in seven occupations which are engineering, nurse, architect, survey, medical, dentist, and account (Office of National Development, 2011). These occupations must be in a conditions of ASEAN standard. There are both positive and negative effects to the ASEAN members depends on the level of readiness of each member country (Lichavee, 2010). Therefore, it is important to study the readiness of these occupations to enhance the potential development and the focus is on the readiness of Thai engineers in terms of their potential development and business services (Matthew et. al, 2008).

## **RESEARCH METHODOLOGY**

The purposes of this research were to study direct effects, indirect effects, and total effects of the factors influencing the potential development of the Thai engineers to enter AEC, to develop structure model of factors influencing the potential development of the Thai engineers to enter AEC, and to assess the concurrence and agreement of the factors and structure model of factors influencing the potential development of the Thai engineers to enter AEC. The scope of this research included all Thai engineers that registered with the Thai Industry Associations. The exogenous latent variables included manifest variables and needs and wants variables. Mediator latent variables included skills of communication, management, and teamwork. Endogenous latent variables included wisdom, environment, and motivation and personality. Moderate variable included the readiness of Thai engineers to enter AEC. The data collection was conducted during September to November of 2016. There are two parts of questionnaire which is the demographic information and the competency of the Thai engineers. Statistics analysis included the use of frequency, percentage, mean, Standard Deviation, coefficient of variation, skewness, and kurtosis. In addition, Pearson's product moment correlation coefficient. The Path analysis was used to assess the direct effects, indirect effects, and total effects of the factors influencing the potential development of the Thai engineers to enter AEC with the confirmation from the confirmation factor analysis. Finally, the advanced statistics to analyze the data included Structure Equation Model (SEM) with the use of program AMOS.

## **FINDINGS**

Since Thailand is entering the AEC with confidence, there are at ten occupations that will be moved freely according to the ASEAN conditions. One of the free movement occupations is engineering. In comparison with other ASEAN member nations. Thailand has a high potential for engineering and it is imperative that the Thai government focus on the potential development of Thai engineering in the present and the near future. From the survey questionnaire, the majority of the respondents were male subjects with the age between 31-40 years old with the undergraduate in engineering. The majority of the respondents had the experience between 1-10 years and ready to work in ASEAN member countries. Less than 50 percent of the engineers had involved in the movement of work in ASEAN nations. However, the large companies with 200 million baht registered had high potential in the movement of work and they were ready for the ASEAN

works. The findings of this research revealed that competency had a direct effect to the readiness of Thai engineers ( $p < 0.001$ ) and competency had an indirect effect to the readiness of Thai engineers with no statistical significance. The statistics analysis revealed that  $CMIN/DF = 1.102$  and  $p$  value equals to  $0.076$  and  $GFI = 0.872$  and  $RMSEA = 0.037$ . In addition, the findings also revealed that competency and needs will predict about 12 percent and the total factors can predict about 57 percent. From the testing hypothesis, there can be accepted for two hypothesis which are (H1) the competency had a direct effect on readiness of Thai engineers with the positive influence of 0.31 and (H4) the need had a direct effect on readiness of Thai engineers with the positive influence of 0.57.

## **DISCUSSION**

Competency had a direct effect on the readiness of Thai engineers with the positive influence of 0.31. This is because competency included emotion, personality and environment which were important ingredient for the readiness according to Marshbum (2007) who studied the competency and satisfaction of the nurses. Moreover, the study of Hoffman (2011) found that problem solving and communication were the two important factors influence the readiness. However, from the finding it showed that competency had no indirect effect on the readiness of Thai engineers to enter the AEC since the indirect influence had a negative value or  $-.37$ . This finding was not concurred with the findings of Craig (2002) who had studies the competency and found that there were an important of indirect effects from the high score to high management ability and to readiness. In fact, many researches in the past often stated that both direct effect and indirect effect are important for the success of the preparation and the readiness of the organization or social to enter the new form of environment changes. The factors such as ethic, learning ability, and teamwork are simple but it is actually an important ingredient for the success of the implementation of the readiness. The needs had a direct effect on the readiness of Thai engineers with the positive influence of value of 0.52. The need included ethic, cooperation, response, leader, learn, and basic knowledge. Wongleedee (2017) who had studies the readiness of the tourists to choose the particular tourist destination found that both direct and indirect effects were vital to the decision making and the readiness. Moreover, the structural model implied that both direct effect and indirect effect are important to the success of the preparation and the readiness of Thai engineers to enter the AEC labor market successfully in the near future and it can be applied to other occupations that will be freely movement in the ASEA market, too.

## **FUTURE STUDY/SUGGESTIONS**

This study covered mainly for the engineering occupation. The future study should focus on a more variety of other occupation which will be freely movement among the ASEAN nations by comparing the differences of each variable and each factor that influencing the readiness of the occupation studied in order to improve the knowledge and understanding of the labor market in AEC. Moreover, the Thai engineers and management level need to plan to enhance the development of potential enhancement plan for Thai engineers

to be able to work as a team and face with future challenges in the ASEAN labor market. Since the findings of this research showed that direct effects are vital to the readiness. The focus should be on the improvement of factors that has the direct effects on the readiness of Thai engineers to enter AEC.

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