

Demand for Logistics Management Studies in North Eastern Thailand

Pichit Prapinit^{#1}, Rohafiz Sabar^{*2}, Mustakim Melan^{*3}

[#]Loei Rajabhat University, 234 Loei-Chiang kan, Loei 42000, Thailand

^{*}School of Technology and Logistics Management (STML), Universiti Utara Malaysia, Malaysia

¹pichitprapinit@gmail.com

²rohafiz@uum.edu.my

³mustakim@uum.edu.my

Abstract— The research investigates the demand on education in the field of logistics management among the high school and vocational students at North Eastern of Thailand. The research explores the needs for labor market in logistics between the private enterprises and government agencies. The surveys were conducted among 830 respondents which include students, entrepreneurs, public and private enterprises through in-depth interviews and brainstorming sessions. The result indicates that the needs for further education among students, mostly female, aged between 19-21 years old. A total of 72.30 % required the logistics disciplines in future businesses (4.31, SD = 0.962). The nature of the curriculum should be focusing on logistics theory (4.35, SD = 0.962). The equation of multiple regressions showed that the logistics education met the labor market (Dem), income level of the parents (inc), distance from home to schools (Dis) and the labor demand in Logistics dropped even at the Northeast. The entrepreneurs and the private sectors indicated to 70 %, 18 %, state agencies, enterprises and other organizations in 12 % which agreed on education for better development in logistics market. Personnel in logistics is critical for the future (4.31, SD = 0.692), demand for logistics in trades border (4.12, SD = 0.798), transportation movement at the Northeast links with neighbouring countries (4.12, SD = 0.798) and personnel logistics with a good command of English (4.01, SD = 0.561). The exhibit shows slightly reduction on logistics trend at the Northeast due to knowledge and education. Logistics shall be the important factors due to growing of business volumes, enhance on its competitiveness and focusing on costs reduction. The government policy was very encouraging towards logistics businesses. The demand for logistics personnel are increasing and this will contribute to the economic growth at the North East. Suggestion for future development is to have a real learning on the logistics theory through government and private partnership. This will enable the best of logistics education towards improvement and quality labor for better economic in Thailand.

Keywords: *logistics management, demand for logistics education, labor logistics market, logistics activities and economic growth*

1. Introduction

The development of ASEAN economic links under the framework of ASEAN Economic Community (AEC) in economic cooperation between the Mekong Sub Region

Strategic Plan for the development of the logistics has reference. The goal of the 20-year strategic framework under the National economic and Social Development [3] No. 12 (2560-2564 BC) was on the development of logistics and supply chain in the region. The first stage of this plan is the development of the country into the center of trade, services and investment for the region. This plan suggests for upgrading the capacity of the logistics industry as new income base and support the competitiveness for the country [4]. Development for the skilled workers and high demand of the labor market in Thailand were also part of the agenda [6]. It also includes Customs, logistics, freight forwarding, transportation and inventories management. Thailand consists of 20 provinces through a total population of 23 million which engaged border connections with neighbouring countries, namely Lao PDR., Laos and Cambodia. The strategy is to provide the gateway to Indochina towards the strategic movements in the region of logistics. The major problems in the activities were inadequate, incompetent in meeting the demand of present businesses [3]. This may invite further impacts on production and costs in daily activities. There were growing demand in the logistics businesses, key personnel and labor market. This is to accelerate the development of logistics and meeting the labor requirement with sufficient manner [5]. It is important to have a clear analysis in demand and market especially on the shortages of personnel. One of the factors is to provide the educational requirements and to prepare students for having a proper qualification and knowledge in the logistics fields [8]. The education planning is suggested to be organized through collaboration between private partnership and government universities. This is part of the planning and suggestion in the research and expected to be better education plan in future [7].

2. Research Objectives

1. To investigate the needs for further education in the field of logistics management of high school students and vocational at the Northeast Thailand.
2. To study the needs of the labor market, management of logistics enterprises, government and enterprises at the Northeast Thailand.

3. Research Methodology

1. This research explores the Mixed Method with both quantitative and qualitative

2. Population and sample; The overall total respondents were 830 samples which include students, entrepreneurs, state government staff. The brainstorming session is to determine the personnel requirements of the logistics at Northeast Thailand.

3. The instruments used were data collection, questionnaire and interviews.

4. Data were collected by means of specifically targeted to meet the required number of samples. Interviews with stakeholders such as parents, school administrators. Representing students, teachers, counselor's association representing the logistics. Heads of government agencies in the Northeast (brainstorming stage).

5. Demand study refers to the behavior of consumers or service providers such as students, parents, community, social enterprises towards better education in Logistics and Transportation and determined by them. The sizes of the school are based on the demand and the needs of the population, such as small, medium or large schools [1]

Demand for education also refers to variety of formats and based on the types population, society from an early stage until the highest level of education [1]. Other concept refers to the requirement in labor demand for the market of entrepreneurial development towards the future market [15]. As conclusion, demand in education refers to curriculum for students, teachers, school administrators, parents and for future graduate in logistics. The study suggests to all stakeholders to be expert in logistics especially in the high school, diploma, degree holders with deferent fields, entrepreneurs, local businesses government officials and relevant agencies [11]. Technical characteristics of the demand for education are as follows;

1. There are other factors that contribute to the demand of labor market in certain fields. As a result, demand for education is the highest demand as recorded.

2. The education demand is based on external factors such as culture, values, social and politics rather than economic issues. Factors affecting the demand for educational programs are as follows;

1. The costs of the investment in education
2. The population and values
3. The nature and structure of the course
4. The duration of the study
5. The distance traveled to school
6. The income level of the people.
7. The personnel needs in various disciplines
8. The contribution of the eminent university
9. The cultural and social factors.

Labor demand of logistics for the years 2001-2003 has increased on manpower requirements which parallel with the

expansion of domestic market and international trades [17]. The conditions of employment in the country using secondary data from 1993-2009. In 17 years the data had derived on the estimated of labor demand and in the year 2010-2015, the demand for labor is equal to the number of persons employed.

The study estimates the demand for labor in Thailand from 2010-2015 with two (2) independent variables which the value of gross domestic product (GDP) and the value of capital stock (capital stock) are correlated with the number of people employed (L). In one direction if the country's Gross Domestic Product (GAP) has been expanded. Increases of 2.98 % per year, and the capital stock (K) with a growth rate increase of 3.16 percent per year.

The factors affecting to the demand for labor in Logistics industries and forecasting the demand for labor in future [9]. Using secondary data time series from 1986-2007 in modeling the concepts in a complex polynomial regression. The study indicated that the wages have relations and in line with the demand for labor in industrial logistics statistically significant at the 99% confidence level which relates to knowledge on logistics. The communication, language skills and trade relations were in line with the demand for labor in industrial logistics and statistically significant at the 99 % of the confidence level.

Thailand should be focusing on the workers with Burmese language in future preparation for the ASEAN Economic Community (AEC). Other than that, the requirement of labor market and education refers to the following:

1. Research papers (Exploratory Research)
2. In-depth interviews and highlighted by a group of academics, government agencies, private operators and workers in Thailand. The data was analyzed using the content analysis and the results are summarized as follows;

1. The emergence of the ASEAN Economic Community (AEC) has resulted in a group of knowledge workers Thailand
2. The Burmese language was in demand for labor market but still limited
3. The government agencies and the private sector had ready on the economy and investment
4. Society and culture have given priority on the development of human resources
5. Internal departments to ensure consistency and ready to enter the ASEAN Economic Community (AEC).

Burmese were also required in the Thailand as competent labors. They also required for being equipped with the related skills such as listening, speaking and writing. This is greatly importance in the operation and for their daily activities at the borderlines [13]. Myanmar Language is also important which is able to support in the entry of the ASEAN Economic Community (AEC). The Thailand workers should be well equipped with the knowledge of the Burmese language.

The government should consider on the improvement in quality of labor force which is part of the economic growth [12]. It is associated with significant changes in employment, which measured accordingly. The economists have shown that education is one of the industry which related to country's development [1].

Investment in education by the public, private enterprises is greatly important. The values of the education are analyzed as follows;

1. The needs on manpower development in education.
2. The worthiness of an effective investment and for better returns in future
3. To enter each level of education and meeting the target.

It is a possibility that the investment in education is part of the risk for the industry. The human capital theory has developed a model to analyze the investment in education [15]. The empirical data were used to calculate the rate of return on education by comparing future benefits throughout the human life[10]. It implies on the different of wages between the two communities. The first group is the graduate levels. The second group is high school levels. Concepts in education the key variable in this study were;

1. The variables include demand for education in Logistics Management's and demand for labor in the labor markets was dropped at the North East of Thailand
2. The Two (2) Independent Variables under two (2) groups including the amount of resistance on the course and students. The size of the school, the cost of education, distance and the size of the business are also important. The logistics education required to be taught in foreign language. The framework can be shown as follows;

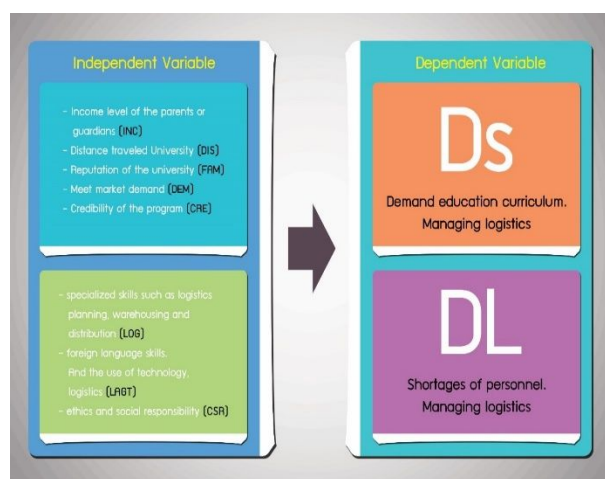


Figure 1: The conceptual framework of the study

Data Analysis in this research examines the mixed (Mixed Research) was quantified by using simple and to test the relationship of the factors that influence the demand for

education and the labor market by creating regression (Multiple regression analysis). Analyses of factors that affecting the demand management in logistics education were analyzed that the factors which influenced the demand for human resources management. Functions and equations can be written as follows;

$$Ds = f(Inc, Dis, Fam, Dem, Cre)$$

$$Ds = a + b_0 Inc + b_1 Dis + b_2 Fam + b_4 Dem + b_5 Cre \dots \dots \dots (1)$$

Where

Ds = demand education curriculum. Managing logistics

Inc = income level of the parents or guardians

Dis = distance traveled University

Fam = reputation of the university

Dem = meet market demand

Cre = credibility of the program

And demand of personnel. managing logistics as

$$DL = f(Log, Lagt, Csr)$$

$$Ds = a + b_0 Log + b_1 Lagt + b_2 Csr + e \dots \dots \dots (2)$$

Where

DL = shortages of personnel. Managing logistics

Log = specialized skills such as logistics planning, warehousing and distribution

Lagt = foreign language skills. And the use of technology, logistics

Csr = ethics and social responsibility.

4. Results and Discussion

The student requirements in this research were mostly female, aged 19-21 years, 53.50 %, 36.25 % to 65.00 % general and vocational education in schools 35.00 % of the 80.20% of

study. A total of 89.50 % in higher education 72.30% and higher education institutions with reputation of 33.00% as target in market was 37.50%. Most of the students believed that the logistics management disciplines are essential to related businesses in the future. ($t = 4.31$, $SD = 0.962$) indicates that the nature of the curriculum should focus on compliance with the theory. Factors affecting industry demand for education management courses logistics. Based on the results from the equation tray pitching pluralist found that managing logistics branch that meets the labor market (Dem) income level of the parents (inc) and the distance from home to school. (Dis)

$$\begin{aligned}
 Ds &= -0.39 + 0.03 \text{ Inc} + 0.56 \text{ Dis} \\
 t &= (-2.125) (3.096) * (3.256) * \\
 &+ 0.86 \text{ Fam} + 0.40 \text{ Dem} + \\
 &(2.104) (3.235) * \\
 &+ 0.86 \text{ Cre} \\
 &(2.546) \\
 F &= 444.185 \\
 R^2 &= 0.72 \\
 DW &= 3.341
 \end{aligned}$$

Demand-side management logistics was dropped even in the Northeast Thailand. The entrepreneurs indicated to 80%, the private sector 18%, state agencies, enterprises and other organizations in 12% had agreed that the labor market and personnel in logistics are so critical for the future ($t = 4.31$, $SD = 0.692$) demand for logistics transporting the trades border ($t = 4.12$, $SD = 0.798$), and transportation logistics in the Northeast links with neighboring countries ($t = 4.12$, $SD = 0.798$) and personnel logistics should have good communication in English ($t = 4.01$, $SD = 0.561$). The factors affecting the demand of personnel indicated that the Logistics in the Northeast through the demand management, transportation and distribution (Log) foreign language personnel employment and technology (Lagt) were established. The following equation were related in the study;

$$\begin{aligned}
 Ds &= 0.89 + 0.74 \text{ Log} + 0.25 \text{ Lagt} \\
 t &= (1.520) (3.014) * (2.150) * \\
 &+ 0.86 \text{ Csr} \\
 &(1.250) \\
 F &= 328.140 \\
 R^2 &= 0.52 \\
 DW &= 2.131
 \end{aligned}$$

Based on the interviews which represented by the parents, school directors, agents and student counselors, the study was recognized on the establishment of that National Development Policy, National Strategy, National Economic and Social Development Plan[3]. This also affected on the demand for personnel management in Logistics. Institutions are required to prepare the logistics programs to meet the demand by collaborating with the private sectors. The

framework of ASEAN represents the operators' associations in logistics were also established [12]. The government agencies in the Northeast are encouraged for having cooperation under the national strategy and government policies and affecting on the labor organizations for future demand [14]. The educational institutions in the region should speed up the production of graduates in logistics in meeting the needs of labor markets in the region. This enables to support the growth of the regional economy and the country [15].

5. Conclusion

The North East Thailand has the potential on logistics businesses especially in the border trades. Therefore, the better communication skills and logistics education are required in meeting the market trends. The demands for logistics workers at North eastern Thailand have increased in line with the development policy as suggested in logistics framework. Factors affecting the demand side of logistics are important. The needs of labor with proper skills and education are essential. The private partnership and universities need to work hand in hand on developing the knowledge, not only higher education diplomas and degrees but also the certifications program. The curriculum suggested should be focusing on the theory and practical education. The competitiveness linked to neighboring countries such as Lao PDR., Laos, Vietnam and China which therefore the education in logistics should be established accordingly and meeting with the demand of the skills workers in the region.

6. Recommendation

The study suggested for the planning decisions as follows:

1. To develop the improvement of educational institutions at the Northeast
2. Better information in policy framework for better workforce development in the region and country.

Suggestions for further research;

1. Should establish a comparative study on education abroad
2. Should develop the short courses on logistics, workforce development and communication skills and knowledge in logistics.
3. The requirements of the labor market in the future.

7. Acknowledgement

The authors acknowledge the financial support from National Research Council of Thailand (NRCT), Bangkok, Thailand.

References

- [1] Pichit Prapinit, "Management, Economics. Faculty of Management Abstract", 2005.

- [2] Pichit Prapinit et al., "*Study of supply chain trade routes in the Northern Region. Thailand - Laos - Vietnam - Guangxi Autonomous Region, People's Republic of China*", Office Research Fund. Bangkok, 2015.
- [3] Pichit Prapinij, "*Economics Supply Chain Management. Faculty of Management Loei Rajabhat University Loei*", 2014.
- [4] Office of the National Economic and Social Development Board, "*Strategic Plan Development Thailand's logistics system No. 2*", Bangkok, 2016.
- [5] Research and Evaluation at the University Press, "*Case studies of the border trade business successful. Development of measures to promote and enhance small and medium-sized enterprises (SMEs) in border areas. Small and Medium Enterprises Promotion Agency*", Bangkok, 2015
- [6] Suriya Atri Act., "*Strategic Analysis of the commercial side of the border provinces*", Northeast to support the ASEAN Economic Community, 2013.
- [7] Journal No. 2 University 33 years of logistics centers and border trade. Loei Rajabhat University, "*The result of the operation, logistics and border trade to an ASEAN Economic Community (AEC) for fiscal year (2017)*". Loei Rajabhat University. Loei province, 2017.
- [8] Alberto Behar and Phil Manners, "*Logistics and Export*", 2018.
<http://www.csae.ox.ac.uk/workingpapers/pdfs/2008-13text.pdf>.
- [9] Cunningham, J.B. & Lischeron, J., "*Defining Entrepreneurship. Journal of Small Business Management*", 29, 1 (January) : 45, 1991.
- [10] Drucker, P.F., "*Innovation and Entrepreneurship: Practice and Principles*, Harvard Business Review 76, no.6: 149-157, 1985.
- [11] Festus EboTurkson, "*Logistics and Bilateral Exports in Developing Countries: A Multiplicative Form Estimation of the Logistics Augmented Gravity Equation*", CREDIT Research Paper, 2006.
- [12] Hildegunn Kyvik, "*Logistics and Time as a Trade Barrier*. OECD trade Policy Working Paper No.35, 2006.
- [13] Pichit Prapinit, "*The Consumer goods supply chain of loei, Thailand-Laos PDR-Social Republic of Vietnam-Republic of China*", World Conference on Supply Chain Management 2016. Loei Rajabhat University, Thailand & University Utara Malaysia, Malaysia 2016.
- [14] Rudjanakanoknad J., Sabhasri, C., and Wilaikaew, A., "*Existing Condition and Future Opportunities on Route 12 Economic Corridor*", Journal of Society for Transportation and Traffic Studies (JSTS), Vol 2. No. 2, June 2011, pp. 56-65, and Ergonomics Society Annual Meeting, vol. 44, no. 5, pp. 534-537, 2000
- [15] Melan M. " *Determinants of an open market concepts towards haulage industry in Malaysia*" Journal of Technology and Operations Management 10(1), 49-61 (2015)