Factors Influencing on In-migration from the Northeastern of Thailand to Bangkok: An Application of Logistic Regression Analysis

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Abstract

The purpose of this research is to analyze the factors affecting labour migration from the Northeast of Thailand to Bangkok; to describe the characteristics of migrant labour, and to study the demand of labour on social welfare. The random sampling of populations included the two provinces in the upper Northeast, which are Roi et and Khon Kaen province, and the other two provinces from the lower Northeast, which are Buri Ram and Srisaket province. Data was collected from 682 migrated labourers, and data analysis applied the logistic regression analysis method. The results indicated that in the past several years, Bangkok has attracted an increasing numbers of migrant workers, especially from the Northeast. Factors affecting labour migration from the Northeastern of Thailand to Bangkok are the age of labour, the unemployment occurrence before migration, the difficulty of looking for jobs in local areas before migration, and the distance between the original province and the destination province.

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1   Introduction

Economic development and social progress cause a variety of changes on transportation, communication, medical systems, and so on. The developed areas with high growth rates encourage the development of industries, which create work that will attract more people to migrate than other areas. Bangkok is the capital of Thailand. It is the economic center of both public and private agencies and education institutions. It is also equipped with several facilities. It is not surprising, therefore, that the majority of the emigrant populations are residents living and working in Bangkok. In 2004, out of a population of about 6.35 million people in Bangkok, 431,767 people were immigrants. Most of these migrants came from the Northeast region.

The migration of workers from the Northeast of Thailand has long been influenced by different factors from each period. In the early period, it was the migration of peasants from the countryside spreading to other developed cities in order to escape from drought and poverty. In the following period, the development focused on industry. This caused big waves of labourers of working age to migrate to the industry sector. In the current era, despite a policy of decentralized development, the phenomenon of migration is obvious. The migration of the Northeast is mainly to Bangkok metropolitan and central regions. Additionally, migration appears in almost all ages, not only the workforce.

Table 1 shows the number of net migrants, which is the difference between the migration into and out-migration of a population. The data from the Population and Housing Census in 2000 showed that the greatest numbers of out-migration of a population were from the Northeast with 352,156 people. The central region, which absorbed the greatest number of migrants, was the favorite destination of 719,518 migrants (National Statistical Office, 2004).

The Census of the Population and Housing in the past three decades (1980, 1990, and 2000) shows a picture of migration patterns in Thailand. The direction of migration is from different regions to the major cities. The largest number of migrants head to Bangkok. In the past decade, however, the migration of Thai people has changed. Although Bangkok is the center destination of migrants from all regions, in the recent decade, the central region also contains the largest number of migrants, due to the saturation of work in Bangkok, where working positions are inadequate to the needs of the workers. Therefore, the government has implemented a policy to spread prosperity to other regions by improving the transportation and infrastructure. It has caused the development and growth of secondary cities to absorb the numerous migrant population (National Statistical Office, 2010).

Table 1: Net internal migration

Year Region	1980 (Persons)	1990 (Persons)	2000 (Persons)
Bangkok	230,072	**431,767**	118,102
Central	118,758	268,074	**719,518**
North	-109,851	-23,176	-55,265
Northeast	48,274	**-240,144**	**-352,156**
South	32,804	-391,398	74,868

Source: National Statistical Office, 2004.

Note: Net internal migration is the difference between in-migration and out-migration (National Geographic Society, 2005)

Table 2 indicates that the Northeast region contains a large number of migrants. Most migration includes the migration within the country, from the countryside to cities, due to a change in the economy, with the focus shifting from agriculture to industry.

In Thailand, more than half a century of first generation youth migrants in rural areas have abandoned their villages to travel to work in the city with the intention of raising a family income and overcoming poverty. However, only some workers are successful in improving their family's lives, having money to repay debt, buying farmland and developing their villages. For the other group of workers who are not successful as expected, they choose to emigrate in the future or go back to their original settlement. So, the challenging of the workers are how to settlement at the new environment with the sustainability.

The challenge of the workers is figuring out how to establish a settlement in a new environment with sustainability. Whether or not the workers encounter either good or bad experiences, the impact of labour migration is great. There are several issues that affect different parts of society. The extreme cases of the failure of migrants result in the wandering of migrants in cities without shelter. The starving migrants often are involved in criminal and illegal offenses. They cause trouble and threaten the security of the everyday lives of people. It is important to recognize and resolve these problems. The success of decentralization development policy should be indicated by the expansion of flourishing rural areas and the reduction of the new generation of rural people's migration. However, the fact of rural life is the youth neglect their houses and leave the elders alone for long periods of time. This continuously increasing number of labour migration prompted policymakers to review the causes or the main factors which serve as incentives for people to emigrate.

Table 2: The number of migrants that have moved to Bangkok; classified by the
habitation before move and present habitation data in 2006

Habitation before Move	Total	Present Habitation					
		Bangkok	Central	North	Northeast	South	Aboard
Total	**1,062,155**	**440,641**	**234,754**	**95,179**	**183,474**	**50,031**	**58,077**
Bangkok	93,241	-	20,200	19,124	46,933	5,617	1,367
Central	249,931	80,736	-	43,311	111,676	8,677	5,531
North	181,595	77,873	70,141	-	12,413	6,447	14,721
Northeast	**474,883**	**256,754**	130,095	24,986	-	29,290	33,758
South	62,505	25,278	14,318	7,758	12,451	-	2,699

Source**:** National Statistical Office, 2006.

The main reason behind migration is to alleviate poverty. Migration labourers attempt to increase incomes and to smooth consumption. However, not all of them are successful. They face different problems, and some of them are even exploited. The separation from their families can be stressful for migrants. The large scale of migration in Thailand can pose serious challenges that need to be solved. Therefore, this research attempts to describe the characteristics and the patterns of migration. The analysis of the factors affecting labour migration from the Northeastern of Thailand to Bangkok is also important for the implementation of the social welfare policy to support the migrant group.

2   Literature Review

Migration (human) is the movement of people from one place in the world to another for the purpose of taking up permanent or semi permanent residence, usually across a political boundary. An example of "semi permanent residence" would be the seasonal movements of migrant farm labourers. People can either choose to move ("voluntary migration") or be forced to move ("involuntary migration"). Migration occurs at a variety of scales: **intercontinental** (between continents), **intracontinental** (between countries on a given continent), and **interregional** (within countries). One of the most significant migration patterns has been **rural to urban migration**—the movement of people from the countryside to cities in search of opportunities (National Geographic Society, 2005).

Migration has economic, social, and cultural implications for the sending and host societies. Remittances the migrants have sent home are perhaps the most tangible and least controversial link between migration and development (Ratha, D., and S. Mohapatra, 2007). Migration has important impacts on the welfare of the household, the home community, and the whole economy in various ways. The positive impacts of migration are the improvement of household wealth, the development of knowledge and skills, and the exchange of information between areas. On the other hand, the negative impacts of migration are the brain drain of high skilled and productive labour from local areas, which may cause that area to lose public resources invested in their education and face severe shortages of highly skilled workers.

Furthermore, the social impacts on the original region of the migrants are significant. The emotional impact is not just limited to the migrants themselves, but also to the families left behind, especially in poorer households where the whole family cannot afford to emigrate together. Thus, these families must   emigrate one member at a time, resulting in eroded family structures and relationships. As described by D'Emilio *et al.* (2007), the longer the separation between the migrating parents and their children, the more children lose their parents' reference in the management of the household and their authority and role as providers of love and material care. Parents are either gradually replaced by other family members, or the children take the task of parenting upon themselves. Feelings of rejection, abandonment, and loss follow the children left behind, and migrants cannot compensate for these feelings by sending material gifts and remittances from abroad. To some extent, however, the recent technological advances in terms of e-mail and affordable telephone calls might allow transnational families to form and foster social ties even at a distance (UNDP 2009, p. 76).

Thailand development plan focuses on the development of infrastructure and major cities, which is regarded as the main reasons that attract labourer from agricultural sector to the industrial and service sector**.** It is apparent that labour migration from the northeast displaying in the greatest number of the nation migration from the past to present. Several researchers have studied labour migration in Thailand. Main factors of migration are **economic factors** (Chalit Wipattanaporn,1986), which consist with the work of Seri Phongphit and Kevin Kewison (1990). Chalit explain cause of northeast labour emigration of the original settlers to find new homes, to acquire of fertile land, and to seek for new opportunity to increase income, which are similar to the report of F. Hayao, Y. Kaida and M. Kuchiba (1985), who studied at Don Dang, Don Han district, Khon Kaen province and finds out that the villagers immigrants to established new houses in order to **flee from the drought**, and to look for the **land for the cultivation**. Besides this, the **increasing population** is as the result of a densely inhabited and the land is not enough.

Some people migrate to the new abundant land. Moreover, the **pursuit of economic revenue** is as the result of the migration for temporary employment from May to February. After this period, people return to the field at the same residence.

Toemsak Sukhvibul (1991) studies the effects of urban development on labour migration in the eastern region of Thailand. The most important cause is the **economic factors**, which consistent with the work of Chalit Wipattanaporn (1986). The work of Toemsak shows that most of the migrants in major urban areas and rural areas have his own decision on migration but family members play an important role on the migration decision of the migrants in the secondary city. Economic factors are associated with migration significantly. Urban development in the east is as a source of growth and employment center, which attracts the migration of working age population and almost all of them wish not to migrate out. The migration in the urban and rural areas is an important condition that results in different migration. Research of Tippavasukon Pradubpongse (1992) differ from the work of Chalit Wipattanaporn (1986) and Toemsak Sukhvibul (1991) in the point that economics factor is not the main factor to incentive for migration. Result found that **relative income** variable has the positive effects on in-migration only in the case of Nakorn Pathom, Pathum Thani, Samut Prakan, and Samut Sakorn. The **relative unemployment** variable positively relates with in-migration into Bangkok Metropolis, Nonthaburi, Pathum Thani, Samut Prakan, and Bangkok Metropolitan Area. The **education** variable in the origin provinces has positively affects in-migration into Bangkok Metropolis, Nakorn Pathom, Samut Prakarn, and Bangkok Metropolitan Area. The **relative urbanization** variable has the unexpected sign but it is not statistically significant. However, factors affecting on migration can be divided into personal factors and family factors (Pramote Prasartkul and Pimonpan Isarabhakdi, 1999). **Personal factors** include sex, age, and marital status, which consistent with the work of Kerry Richter and others (1995). **Family factors** include number of family member, money transfer receiving by family and family status of the migrant. The findings of Supachai Butwisate (2009) differ from the others. This study suggest that the primary factors that cause migration within the country include **gross provincial product per capita** with the statistically significant at 99 percent and the **proportions of provincial poverty** with the statistically significant at 95 percent. These factors derive from the results of economic development plan. The migration has been spread out in industrial area and new services. Kerry Richter and others (1995) identify the determinant of labor migration in the northeast region is caused by **personal factors**, which include sex, marital status, educational level, experience of migration in the past, and agricultural season. This factors are similar to the work of Pramote Prasartkul and Pimonpan Isarabhakdi (1999). Moreover, **family factor** such as the decision of family member on migration is also being an important factor, which consists with the findings of Toemsak Sukhvibul (1991). Montree Piriyakul (2006) research on determinants of internal migration flows in Thailand. The research findings are different from others but have some part relate to the work of Tippavasukon Pradubpongse (1992), which explain that income and employment have influenced on migration. Montree (2006) finds that key determinant of migration in Thailand include **distance**, **boundary**, **population size**, **previous migration size**, and the proportion of **working-age population**, specifically the youth. Other factors that also affecting current migration include **personal income**, **cost of living** (using population density as its proxy variable), **poverty**, **urbanization**, **area size**, **employment rates**, **proportion of labor forces in industrial sector**, **new job availability**, and the government's **health and social services and facilities** i.e. education,

doctor-population ratio, bed-population ratio, arrested crime rate and road density.

3 Data and Methodology

The population of this study is the Northeast labourer who migrates to work in Bangkok. The sample selection includes four provinces, which are Khon Kaen and Roiet, the representative sample from the upper Northeast region, and Srisaket and Burriram, the representative sample from the lower Northeast region.

3.1 Descriptive Analysis

The descriptive analysis of labour migration involved the following areas: gender, age, education, occupation, work experience, previous job of migrant, secondary occupation of migrant, demand of employment, debt, income, expenditure and living cost of labour, burden on family, severity of unemployment among the migrant, length of migration, type of migration, reason of migration, economic sectors which receive the most migration, impact on society and the economy, the severity of poverty, the length of time to stay and find a job, the social aid and networks available, the unemployment compensation, the occurrence of problems and the problem solving capability of the migrant, demand on social welfare, and so on.

3.2 Model and Data Analysis

The dependent variable in logistic regression is usually dichotomous, that is, the dependent variable can take the value 1 with a probability of success θ, or the value 0 with probability of failure $1-\theta$. This type of variable is called a Bernoulli (or binary) variable. For our analysis, let θ represent the probability of an event that depends on n covariates or independent variables (Tabachnick and Fidell, 1996).

As mentioned previously, the independent or predictor variables in logistic regression can take any form. That is, logistic regression makes no assumption about the distribution of the independent variables. They do not have to be normally distributed, linearly related, or of equal variance within each group. The relationship between the predictor and response variables is not a linear function in logistic regression. Instead, the logistic regression function is used, which is the logistic transformation of θ:

$$\theta = \frac{e^{\alpha + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n}}{1 + e^{\alpha + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n}} \tag{1}$$

Where α is the constant of the equation, β is the coefficient of the predictor variables. An alternative form of the logistic regression equation is:

$$logit[\theta(X)] = \log\left[\frac{\theta(X)}{1-\theta(X)}\right] = \alpha + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n \tag{2}$$

The goal of logistic regression is to correctly predict the category of outcome for individual cases using the most parsimonious model. To accomplish this goal, a model is created that includes all predictor variables that are useful in predicting the response variable. Several different options are available during model creation. Variables can be entered into the

model in the order specified by the researcher or logistic regression can test the fit of the model after each coefficient is added or deleted, called stepwise regression (San Francisco State University, 2002).

The quantitative analysis of factors influencing the migration of labourers from the Northeast to work in Bangkok applied a logistic regression analysis using the following model.

Y = f (GENDER, AGE, EDU, STAT, UNEMPLOY, WORK, INCOME, DIFFICULT, DISTANCE, HOUSE, POPDEN, POOR)   (3)

Y   is log odds of the willingness to migrate in the future. It is an endogeneous variable, which is divided into 2 groups.
Y = 1   represents the labourer who expects to migrate in the future.
Y = 0   represents the labourer who has no intention of migrating in the future.
SEX   is gender, which is a nominal scale.
AGE   is age of migrant, which is quantitative data.
EDU   is the number of years of study, which is quantitative data.
STAT   is marriage status.
UNEMPLOY is unemployment status before migrating.
WORK   is the share of employed family members to total family members.
INCOME   is total household income.
DIFFICULT   is the difficulty of finding a job in the local area.
DISTANCE   is distance between the original province and the destination province.
HOUSE   is the population at home in the migrant's own hometown.
POPDEN is the share of population density between the original province and the destination province.
POOR   is severity of poverty.

Hypothesis of the variables:

GENDER: Man has a higher tendency to migrate than woman because man is strong and most of the man must response on family expenses.
AGE: Young age labourer expects to migrate more than the elder because the elder has more health problem. Thus, age has opposite relation to migration.
EDU: High educational labour has the tendency to migrate a lot because they have more opportunity to search for high income work. So, education level has the correlate with the migration.
STAT: Single or separate marital status of labour has more tendencies to migrate than the married one because the marriage labour must take care of family. So, marriage status may have the opposite direction to migration.
UNEMPLOY: The unemployed worker has the tendency to migrate than the employed worker in order to search for work to support his own living cost. So, the unemployment has the same direction with the migration.
WORK: The higher the number of employing family member to family size, the lower the migration rate. Ratio of worker to total family member has the opposite direction to migration.
INCOME: Member of low income household has the more tendencies to migrate in order to search for high income to support family expenditure. So, household income has the opposite relation to migration.

DIFFICULT: The difficulty to find work in local area is the push factor for labour to migrate such as some area has drought or natural disaster problem, which causes the difficulty to do agricultural work. So, the difficulties to find work in local area have the correlated with the migration.

DISTANCE: If the labourers can find good work close to the original province, they do not need to migrate so far to receive the same income. So, distance between original province and destination province has the opposite direction with migration.

HOUSE: Labourers who have own house has more stable status and want to stay at home to take care of their own asset. So, housing belonging to labourer has opposite relationship with migration.

POPDEN: The destination province that has more population indicate a good infrastructure and contain high opportunity for employment. Thus, the share of population density between original province and the destination province has the opposite relation with migration.

POOR: Labourer from poor household has the high tendency to migrate. Therefore, the severity of poverty occurring in household has the correlation with migration in the same direction.

4   Main Results

4.1   Descriptive Analysis of Labour Migration

The data showed that migrant workers have an average eight years of working experience in Bangkok. The average age of migrants is 33 years old. The average household size is five people. Most members have graduated from secondary school. An average of three persons per household are employed. Each household has an average of two children below the age of 15 years old, an average of two members aging from 15-60 years old, and an average of one member whose age is above 60 years old. The average number of migration members in a household is two persons. The average number of migration followers is one person. In each family, an average of one member has completed primary school, an average of two members have completed secondary school, and an average of one member has completed vocational school. Most family members are unemployed before migration. At present, most of them are employed. The severity of the problem of unemployment is ranked at the medium level (Table 3).

Table 3: Household data of labour migration

Household Data	Mean	Std. Deviation
Working Experience in Bangkok (Years)	8.17	6.66
Age (Years)	32.98	8.80
Household Sizes (Persons)	5.00	2.11
Number of Employed Family Members (Persons)	2.83	1.94
Children Age Below 15 Years (Persons)	1.53	1.55
Member Age 15-60 Years (Persons)	2.21	2.04
Member Age Above 60 Years Old (Persons)	1.26	1.08
Number of Migration Members in Household (Persons)	1.85	1.41
Number of the Migration Follower (Persons)	0.97	1.35

Number of Member who Complete Primary School (Persons)	1.52	1.74
Number of Member who Complete Secondary School (Persons)	1.40	1.27
Number of Member who Complete Vocational School(Persons)	0.51	0.79
Number of Member who Complete Bachelor Degree (Persons)	0.45	0.83

Source: Own Calculations.

Most migrant workers, with percentages as high as 83.58%, think that migration is worthwhile. In addition, most of them, as many as 73.9%, do not have health problems. The majority of migrant workers, about 81.67%, do not have their own home. Most migrant workers, 72.73%, live in their parents' home. When they migrate to work in Bangkok, they generally stay in rented houses and dormitories.

The first group of the labourers, about 52.5%, expects to move again in the future. The second group of labourers, 28.3%, expresses the idea that migration is temporary. The rest, 19.5%, feel that their migration is permanent. In terms of the length of the migration, most workers, 60.41%, cannot determine the duration of stay in the shelter of a new residence that is not their home. Only a minority can expect that their migration will be short term.

When considering current occupations and occupations before migration, it was discovered that most of the jobs prior to migration, as high as 46.04%, were agriculture work. Most of the labourers, 48.24%, have current occupations as plant and machine operators, followed by sales and trading services work, at 12.46% respectively. Most migrant workers work in the production sector at 43.99%, followed by the construction sector, amounting to 15.98%, and finally the hiring labour in the household, at 10.26%, respectively. The migrant workers are mainly employed by private sectors, accounting for 76.5% of the employment, followed by work as government employees, accounting for 15.7%, and the rest work at their own businesses or private work. One characteristic of the work of most migrant workers is that it is permanent work, about 83.58%. The migrant workers' current income is between 5,001 and 10,000 Baht per month. 80.35% of migrant labourers have no income from secondary work. More than a half or 67.45% of the workers get jobs as soon as they migrate. About 74.78%. of all workers receive help from family members and relatives. Nearly all of the migrants send remittances to their homes in the Northeast, with numbers as high as 91.64%. Most workers migrate to other regions that are the central, east, northeast, north and south regions, respectively. Most workers, 88.27%, move and return home, but they move only for a short period of less than 6 months. The workers mainly move temporarily, with numbers back up to 97.36%.

Most households indicate that their household financial status after migration is better. Household incomes have increased a lot. They have adequate incomes to sustain family costs, and family finances have more liquidity than before the migration. The ability to pay the debt of households is increasing. However, the spending and liabilities are also increasing as well. Most migrated labourers, 64.1%, agree that they must bear the burden of family costs more. Most of these labourers, 65.98%, encounter difficulties in finding employment in their local area. This may be the driving force behind the reasons that compel them to migrate.

Reasons for migration are firstly from the need to change work, at 20.23%, the need to search for new opportunities and income, at 18.91%, the duty of present work, such as the police moving to work in Bangkok, etc, at 17.3%, the need to find work due to

unemployment in agriculture work, at 13.34%, the migration to escape drought and natural disasters at home, which causes losses in agriculture production, at 9.09%, demand for further education, at 6.89%, and the need to respond to family expenses, at 3.08%, respectively (Figure 1).
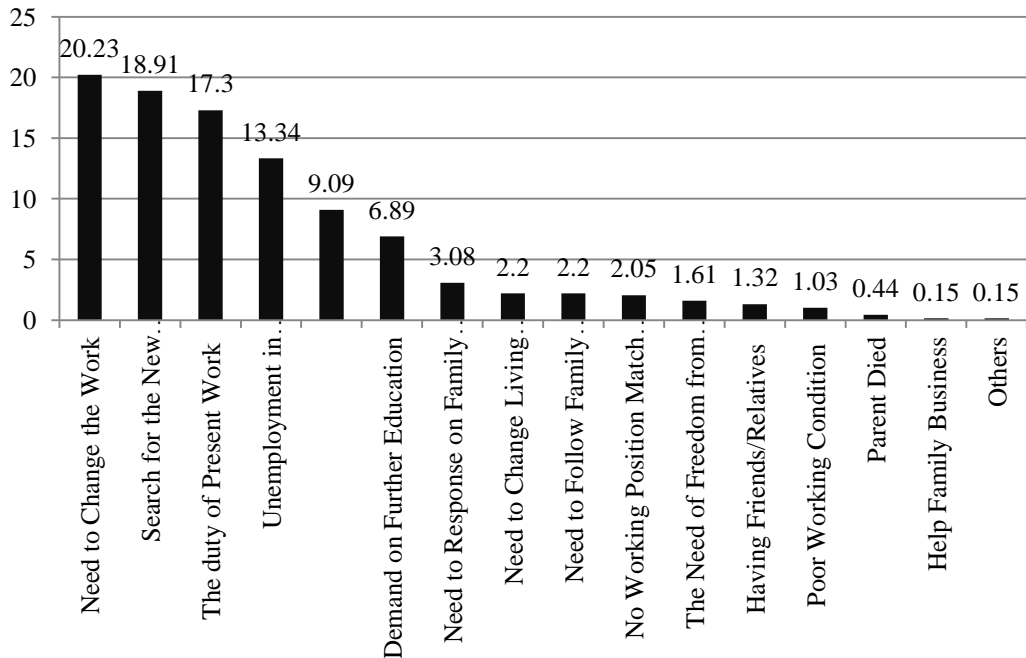

Figure 1:   Reasons for migration (percentages)
Source: Own Calculations.

Problems of migration, ranked at the highest level, are as followed: problems of unemployment, problems of lacking financial liquidity, problems of the unsatisfied new work that is not what was expected before migration, problems of exploitation from previous work, problems of work where the salary is not promoted, problems of criminal effects, problems of the cost of living, and problems of pollution and traffic jams. Problems of migration that are ranked at the moderate level are as followed: problems of poor working conditions, problems of the emergence of slums, which invade public places, problems of lacking contact with family members, problems of decreased agricultural production due to lack of labour, problems of mental sickness from being without friends, problems of controversy, problems of crowded living conditions, problems of having less time to take care of babies and elders, problems of separating family relationship, problems of excessive consumption, problems of local areas investing in the high cost of labour capital but loosing human resources, and problems of rural labour shortages, especially among young labourers (Table 4).

In order to solve the impact of labour migration, labourers generally must face the difficulty of living in a new environment. Most labourers adapt themselves to city life, adapting to the changes in their economic and social well-being, implementing patience when faced with problems, and finding new ways to address the various situations. They have more cost savings, perform harder work, and seek additional work. The way to

encourage family members to live together in urban areas is to select ways that reduce the pressures of living alone. The ability to talk and consult with relatives closely can motivate family members to have a sustainable living in the different environment.

Note: in order to benefit the migrant workers, many changes need to occur. Migrant workers mostly need improvements in social welfare covering the case of unemployment after migrating. Most labourers demand collateral security for their work. Someone needs to reduce the burden of paying social security premiums. For workers with low wages, they need to increase the minimum wage because of insufficient incomes unable to pay the high cost of living and working in Bangkok. For the older labourers, they need to receive increasing grants so that when they are elderly, they will not be a burden on their children. For the young labourers, they need the manufacturing sector to expand its employment positions, to expand the manufacturing or industry sectors in their own hometowns in order to expand the opportunities and incomes of local people, reduce migration to towns, and reduce the impact of migration on society.

Table 4: Problems of labour migration

Problem of	Mean	Std. Deviation	Meaning
Lacking of Financial Liquidity	3.78	1.19	A
Criminal Effect	3.77	1.36	A
Being Exploited from Previous Work	3.74	1.25	A
The Cost of Living	3.72	1.17	A
The Unprogressive and Low Promoted Work	3.61	1.13	A
Pollution and Traffic Jams	3.58	1.35	A
Unemployment	3.56	1.26	A
Getting New, Unexpected Work	3.51	1.12	A
Poor Working Conditions	3.38	1.14	B
Crowded Living Conditions	3.38	1.34	B
The Emergence of Slums and the Invasion of Public Places	3.38	1.29	B
Agricultural Product Reduction Due to Lack of Labour	3.32	1.18	B
Investing High Labour Capital Cost but Loosing Human Resources in Local Areas	3.29	1.24	B
Rural Labour Shortage, Especially Young Labour	3.18	1.18	B
Having No Time for Babies and Elders	3.18	1.23	B
Excessive Consumption/High Luxury Goods Cost	3.16	1.24	B
Lacking Contact with Family Members	3.07	1.33	B
Separation Among Family Relationship	3.04	1.28	B
Mental Sickness from Being Without Friends	2.78	1.27	B
Controversy and Argument	2.74	1.29	B

Source: Own Calculations.
Note: A is High Level. B is Moderate Level.

4.2 Factors Affecting on Labour Migration

Logistic regression analysis was performed to identify the factors that influence labour migration. The dependent variable in the logistic regression model is the willingness of the migrated worker to migrate again in the future. The independent variables include gender of respondent, age, education, marriage status, employment status before migration, share of working family members, household income, difficulty to find jobs in local areas, distance between the original province and the destination province, possession of a house in their hometown, the share of population density between the original province and the destination province, and the severity of poverty. Each of the independent variable was tested for univariate association with willingness to migrate using simple binary logistic regression. The selected independent variables are the ones with p-value < 0.05.

According to the analysis of factors that are associated with labour migration, a chi-square test was conducted and revealed that all factors are significant. All independent variables are considered to be important factors that should be explored. Chi-square test results for the analysis of factors that are associated with labour migration are presented in Table 5 below.

Table 5: Results of pearson chi-square tests

Variables	Value	df	Asymp. Sig (2-sided)
Gender * Migrate	2.31	681	0.02
Age * Migrate	93.92	681	0.00
Education * Migrate	40.53	681	0.00
Married Status * Migrate	10.26	681	0.00
Unemployment* Migrate	57.60	681	0.00
Share of Worker per Family Member* Migrate	39.51	681	0.00
Household Income * Migrate	-36.97	681	0.00
Difficulty to Search Work* Migrate	-5.42	681	0.00
Distance between Province* Migrate	-209.65	681	0.00
Own House Belonging* Migrate	57.93	681	0.00
Population Density* Migrate	63.49	681	0.00
Severity of Poverty* Migrate	-34.99	681	0.00

Note: * significant at .05

The study of re-migration illustrates that 52.5% of the labourers maintain a high likelihood for migration in the future. Most of the workers from Buriram province want to continue to migrate in the future at 65.7%, follow by Roi Et province with 55.3%, Srisaket province with 49.4%, and Khon Kaen province with 39.4%, respectively. These results are consistent with the data of the National Statistical Office, which found that workers from the province of Buriram, Roi Et, and Srisaket are the groups with the highest migration population. The study also found that labour migrants from these provinces are likely to have a high migration probability in the future.

The migration of workers from the Northeast of Thailand can be examined for factors behind labour migration from Khon Kaen, Srisaket, Roi et, and Buriram provinces.

4.2.1 Factors affecting on Labour Migration from the Northeastern of Thailand to Work in Bangkok

Table 6 indicates the results of univariate logistic regression. The results presented are Wald statistics for all variables with the exception of outside involvement and are less than 0.05. Following these findings, all variables with p-values less than 0.05 are useful and are entered into the model.

Therefore, factors affecting labour migration from the Northeastern of Thailand to work in Bangkok can be written as equation 4. These factors include age of labourer, unemployment prior to migration, the difficulty of finding employment in local areas or residence prior to migration, distance between the origin and destination provinces, housing ownership in hometowns, and the ratio of population density between the origin and destination provinces. Following the logistic regression results, the factors associated with labour migration are:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n$$

$\text{Logit}_{\text{MIGRATTOTAL}}$ = 7.28 - 0.02 AGE - 0.58 UNEMPLOY + 0.5 DIFFICULT
- 0.01 DISTANCE - 0.64 HOUSE - 14.29 POPDEN   (4)

Table 6: Factors affecting labour migration from the northeastern of Thailand to work in Bangkok

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)	95% CI for Exp(B)	
								Lower	Upper
AGE	-0.02	0.01	5.51	1.00	0.02	-0.06	0.98	0.96	1.00
UNEMPLOY	-0.58	0.22	6.92	1.00	0.01	-0.07	0.56	0.36	0.86
DIFFICULT	0.50	0.18	8.10	1.00	0.00	0.08	1.65	1.17	2.34
DISTANCE	-0.01	0.00	12.01	1.00	0.00	-0.10	0.99	0.99	1.00
HOUSE	-0.64	0.22	8.56	1.00	0.00	-0.08	0.53	0.34	0.81
POPDEN	-14.29	3.30	18.73	1.00	0.00	-0.13	0.00	0.00	0.00
CONSTANT	7.28	1.54	22.39	1.00	0.00				

Source: Own Calculations.

Table 7 presents the correlation matrix of factors affecting labour migration from the Northeastern of Thailand to work in Bangkok. For example, the AGE variable has a positive correlation with the UNEMPLOY variable. This means that increasing the age of the labourer has a tendency to increase the unemployment situation. The AGE variable has a negative correlation with the DIFFICULT variable. This implies that increasing the age of the labourer has a tendency to reduce the difficulty of finding work because the older labourer may have more working experience and skills. Furthermore, the AGE variable has a positive correlation with the DISTANCE variable. The older labourer has a

tendency to move farther or to have more distance between the original and destination province. The AGE variable has a negative correlation with the HOUSE variable. The older migrate labourer has a lower tendency to own a house in his or her hometown. The AGE variable has a positive correlation with the POPDEN variable. This means that increasing the age of the labourer has a tendency to increase the chance of moving to a province that contains a larger population or to increase the ratio of the population density between the original and destination province.

Table 7: Correlation matrix of factors affecting on the labour migration from the northeastern of Thailand to work in Bangkok

	Constant	AGE	UNEMPLOY	DIFFICULT	DISTANCE	HOUSE	POPDEN
Constant	1.00	-0.29	0.09	-0.06	-0.85	0.04	-0.87
AGE	-0.29	1.00	0.05	-0.12	0.06	-0.26	0.12
UNEMPLOY	0.09	0.05	1.00	-0.15	-0.11	0.03	-0.09
DIFFICULT	-0.06	-0.12	-0.15	1.00	0.12	0.13	-0.09
DISTANCE	-0.85	0.06	-0.11	0.12	1.00	0.00	0.55
HOUSE	0.04	-0.26	0.03	0.13	0.00	1.00	-0.04
POPDEN	-0.87	0.12	-0.09	-0.09	0.55	-0.04	1.00

Source: Own Calculations.

4.2.2 Factors Affecting on the Labour Migration from the Khon Kaen Province to Work in Bangkok

Factors affecting labour migration from Khon Kaen province to work in Bangkok are the difficulty of looking for a job in local areas before migration, the share of working family members to total members, the share of income between the destination and original province, and gender (Equation 5 and Table 8). Ratio of worker to total family member is an important factor for labourer from Khon Kaen province. If a household has a lot of working family member comparing to household member, the migration rate will decline.

$$\text{Logit}_{\text{MIGRATKK}} = -1.91 + 0.98 \text{ DIFFICULT} -1.97 \text{ WORK} -4.0\text{E-}05 \text{ INCOME} + 0.86 \text{ SEX} \qquad (5)$$

Table 8: Factors affecting labour migration from Khon Kaen province to work in Bangkok

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)	95% CI for Exp(B) Lower	Upper
GENDER	0.86	0.35	6.12	1.00	0.01	0.13	2.36	1.20	4.65
WORK	-1.97	0.75	6.94	1.00	0.01	0.15	7.17	1.66	31.07
INCOME	0.00	0.00	5.82	1.00	0.02	-0.13	1.00	1.00	1.00
DIFFICULT	0.98	0.43	5.13	1.00	0.02	0.12	2.66	1.14	6.19
CONSTANT	-1.91	0.65	8.62	1.00	0.00				

Source: Own Calculations.

4.2.3 Factors Affecting Labour Migration from Srisaket Province to Work in Bangkok

Factors affecting labour migration from Srisaket province to work in Bangkok are gender, age, unemployment occurrence before migration, share of income between destination and original provinces, and the ownership of a house in the migrant's hometown (Equation 6 and Table 9).

$$\text{Logit}_{\text{MIGRATSK}} = 0.91 - 0.78\ \text{GENDER} - .05\ \text{AGE} - 1.51\ \text{UNEMPLOY} + 8.88\text{E-}05\ \text{INCOME} - 1.3\ \text{HOUSE} \tag{6}$$

Table 9: Factors affecting labour migration from Srisaket province to work in Bangkok

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)	95% CI for Exp(B)	
								Lower	Upper
GENDER	-0.78	0.35	4.89	1.00	0.03	-0.11	0.46	0.23	0.92
AGE	-0.05	0.02	5.55	1.00	0.02	-0.12	0.95	0.91	0.99
UNEMPLOY	-1.51	0.69	4.71	1.00	0.03	-0.11	0.22	0.06	0.86
INCOME	0.00	0.00	11.33	1.00	0.00	0.20	1.00	1.00	1.00
HOUSE	-1.30	0.48	7.40	1.00	0.01	-0.15	0.27	0.11	0.70
CONSTANT	0.91	0.83	1.22	1.00	0.27				

Source: Own Calculations.

4.2.4 Factors Affecting on Labour Migration from Roi Et Province to Work in Bangkok

Factors affecting labour migration from Roi et province to work in Bangkok are the share of income between the destination and original province, the difficulty of looking for a job in local areas before migration, and the ownership of a house in the migrant's hometown (Equation 7 and Table 10). The study indicate that to be the house owner is a significance factor for labourer from Roi Et province, to determine on the decision on whether labourer is going to migrate again in the future or not. In this case, most of the migrate labourer who has own house feel not want to migrate in the future.

$$\text{Logit}_{\text{MIGRATRT}} = -0.73 + 3.18\text{E-}05\ \text{INCOME} + 1.13\ \text{DIFFICULT} - 1.55\ \text{HOUSE} \tag{7}$$

Table 10: Factors affecting labour migration from Roi Et province to work in Bangkok

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)	95% CI for Exp(B)	
								Lower	Upper
INCOME	3.18E-05	1.24E-05	6.61	1.00	0.01	0.14	1.00	1.00	1.00
DIFFICULT	1.13	0.41	7.60	1.00	0.01	0.16	3.09	1.39	6.88
HOUSE	-1.55	0.46	11.44	1.00	0.00	-0.21	0.21	0.09	0.52
CONSTANT	-0.73	0.48	2.31	1.00	0.13				

Source: Own Calculations.

4.2.5 Factors Affecting Labour Migration from Buriram Province to Work in Bangkok

Factors affecting labour migration from Burri Ram province to work in Bangkok are the number of years of study, marital status, the share of working family members to total members, and the share of income between the destination and original province (Equation 8 and Table 11). It is interesting that the higher the educational level of labourer, the higher the number of migrates labourer. Furthermore, family status of the migrant indicates that the single labourer is mostly migrating. The study also finds that migration is as a response to the pressures of living cost in rural area. Bangkok is the place of destination of migrants. Migration help rural survival due to the migrants sends money to their families.

$$\text{Logit}_{\text{MIGRATBR}} = 7.28 + 0.99 \text{ EDU} + 0.76 \text{ STAT} - 1.53 \text{ WORK} - 4.5E\text{-}05 \text{ INCOME} \qquad (8)$$

Table 11: Factors affecting labour migration from Buriram province to work in Bangkok

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)	95% CI for Exp(B)	
								Lower	Upper
EDU	0.99	0.39	6.39	1.00	0.01	0.14	2.68	1.25	5.77
STAT	0.76	0.35	4.65	1.00	0.03	0.11	2.13	1.07	4.24
WORK	-1.53	0.64	5.81	1.00	0.02	-0.13	0.22	0.06	0.75
INCOME	0.00	0.00	17.91	1.00	0.00	-0.26	1.00	1.00	1.00
CONSTANT	7.28	1.54	22.39	1.00	0.00				

Source: Own Calculations.

5   Policy Recommendations

From the aforementioned research findings, this study recommends several policy implementations. Firstly, policymakers should implement the decentralization policy through the expansion of manufacturing sectors to rural areas. A large scale investment and mass production can absorb the labour force. The advantages of the expansion of this industry to other provinces include   risk sharing, such as in the case of the great flood crisis in 2011 where the industrial estate loss was enormous. The distribution of industries to other provinces is also another way to support agricultural labour, to create a network amongst the Thai economy, and to increase the country's income distribution.

Secondly, the educational setting must meet the needs of the employer and the policy of job creation for higher education. It is important to reduce the migration of qualified labourers. At present, a huge number of young, highly educated labourers migrate to Bangkok because the nature of work at their homes does not match the needs of the workers. Major public organizations, including educational institutions, government agencies, state hospital, and other agencies, should, therefore, increase their working positions. These organizations should send representatives to plan together with policymakers their goals for the labour force.

Thirdly, the government should run the policy of increasing the minimum wage in rural areas, which is a large incentive for labourers to return to work at home. In the past, the policy setting relied on the view that the minimum wage in Bangkok is high due to the high

cost of living. In fact, Bangkok is the center of logistics. The price of food and goods is relatively low. Fuel cost in far provinces after including the cost of transportation is higher than Bangkok. Fuel acts as the main factor affecting the input price of the production process. Hence, local people consume higher prices of output. Thus, the minimum wage should not vary a lot between areas. Otherwise, migration will still continue to occur. Therefore, government should give the important on raising the minimum wage or the average income level in other provinces.

Fourthly, the development of modern agriculture is an essential choice for farm doing, profit gaining, and increasing rural employment. Therefore, the government should provide more support to the agriculture sectors, which contain a great number of labourers in Thailand.

Finally, one reason of migration labour is because there is no work at home. People move from a rural small district to work in a big province. Although it can cause more stressful work environment, it may give the better chance of income. Hence, government can help to reduce the unemployment rates by creating more employment opportunities for rural people and implementing the policy to lessen disparities in urbanization among provinces.

6   Conclusion

Human migration affects population patterns and characteristics, social and cultural patterns and processes, economies, and physical environments. As people move, the environment surrounding them also changes. These migrants can be classified into two groups. The first group of workers is comprised of the majority of the employees who works at various industries and receives low incomes. They move back and forth to and from home for the festivals. The other group of workers graduates with a high education and still cannot find work in their hometown because their education and knowledge are not fit with the local work, which often does not require a high skill level. Moreover, they require a higher income, but the employer cannot afford to pay them. Therefore, the arrangement of the migration policy should be aware of both migrant groups, the determinants of migration, and the impact of migration altogether.

According to research in this field, the researchers visualize a mass number of migrants on the train going back home to the Northeast during the major festivals. Trains are tightly packed and crowded, with a high density of mass labourers. People migrate with the full expectation of getting better employment. After the long holiday, we see, again and again, the crowds of people who are busy traveling back to Bangkok. People do not want to separate from their homes,   leave their families behind, travel so far, and work at different places from their family members if there is the possibility of finding a descent working position at home.

The result from the quantitative analysis indicates that main factors affecting on the labour migration from the northeastern of Thailand to work in Bangkok are age of labourer, unemployment prior to migration, the difficulty of finding employment in local area or residence prior to migration, distance between origin and destination provinces, the housing owner at hometown, and ratio of population density between the origin and destination provinces. Among these variable, the ratio of population density between the origin and destination provinces is relative important. The density of population in the destination province is high because of the out-migration, which is as a means to reduce

the rural poverty and is the way to increase family income. The families receive money sent back by migrants demonstrate the success of migration, which encourage more migration. Family spends money from the migrants for the cost of education and other expenses.

These results have major implications on current and future government policies with regard to the labour migration management. The continuous migration movement may be faced with many problems in reaching out to the younger generations and leaving the older ones alone at home. This will inevitably affect family ties and social relationships, and create a vulnerable society. At present, the government should recognize and reevaluate the labour migration policies, not only in the limited scope of internal migration, but also the government should consider international migration as countries become more open to Asian economic communities.

In conclusion, the policies to divert in-migration into Bangkok Metropolis and its surrounding provinces will not be achieved unless the government has to implement the decentralization policy through the expansion of the manufacturing sectors to rural area, set the education meets the need of the employer, run the policy of increasing of minimum wage in rural area, support more on agriculture sector, create employment opportunities for rural people and lessen disparities in urbanization among provinces.

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