

Analysis of Labor Migration Decision: Its Determinants and Benefits The Case of Khmer Families in Tra Vinh Province of Viet Nam

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Abstract

Since the mid 1990s, miracle development of the private and foreign sectors in the Southern economic region of Viet Nam has attracted a large number of migrant flows from the Mekong Delta region and the Khmer migrants have a recognized contribution to those migration flows. Based on the survey of 76 Khmer families in Tra Vinh province where the Khmer is dominant in its total population, this paper examines demographic and socio characteristics of the Khmer families affecting the determinants of migration decision by using of the logistic regression model. This result indicates that migration decision is importantly depended on number of members, plot size, poverty and so on. In addition, this result also points that migration not only brings migrants an increased income, but also contributes positively to their family's income in rural origin.

¹ The data used in this paper was cited from the survey dataset of my doctoral research. This survey was done with the financial support by the international cooperation framework between Can Tho University and Universities of the Netherlands, namely NPT project.

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1. Introduction

Labor migration is intrinsically linked with the development and economic transition process of countries like China, India, Philippines and Vietnam. In past decades, theory of labor migration gradually developed from Ravenstein's empirical laws of migration Ravenstein (1889) to more sophisticated theories of rural to urban migration by Derek (1974) and Michael (1997).

Rural to urban labor migration in Viet Nam is one of the results of economic reform towards industrialization since 1986. Due to rapid economic growth of the Southern economic region² (not imply the South-Eastern region), this region has become a potential destination for many migrants from other regions of Vietnam. The substantial divergence of income between rural and urban is a decisive component to migrate (Ravenstein, 1889). The speed of economic transition in rural areas is slower than in urban areas because of poor infrastructure and human resource. This results in unbalanced development between rural and urban and creates increases income divergence and an incentive to migrate. .

Labor migration in Viet Nam has been studied intensively by many researchers (Anh 1997, Sang 2004, Loi 2005). Most studies concentrate on explaining migration behavior of family across regions, particularly rural to urban. Very little is known about labor migration of the Mekong Delta region and especially of migration among ethnic groups. In the global flow of labor migrants, the Khmers have a long history of labor migration. They have a preference on working for other households rather than working for themselves. As a result, some of Khmer families are migrate in group.

This paper aims to explain labor migration behavior of Khmer families in Tra Vinh province³. More specific objectives of the paper are (i) to examine a situation of labor migration for the Khmer; (ii) to identify determinants of migration decision; and (iii) to calculate benefit from migrants to their family.

² This region includes 8 cities which are Hochiminh, Dong Nai, Vung Tau, Binh Duong, Binh Phuoc, Tay Ninh, Long An and Tien Giang. It's growth rate is above 8% per year and income per capita is 2.4 times compared to average level of whole country

³ Tra Vinh is a coastal province which locates at the Eastern of Mekong Delta in which the Khmer lives crowdedly compared with all provinces in the region; above 30% of the total population.

This paper is organized as follows. First, section 2 reviews briefly on theoretical and empirical knowledge of labor migration process. Section 3 describes the data and reports the basic analysis of demographic and social aspects of the migrated families. Section 4 shows the model of migration decision and its discussions on the estimated coefficients. Section 5 displays the result of calculations about benefit and cost of migration. Some conclusions are in section 6.

2. Labor migration decision: a literature review

In his paper on laws of migration, Ravenstein (1889) pointed out that economic factor is considered as key motivation to migrate. He argues and demonstrates that, income divergence between the rural and urban areas or between the farm and the non-farm sector is the most important factor that drives people to migrate. Further, he found that initially migrants often move over short distances, but afterwards extend to longer distances to reach larger cities or commercial or industrial zones.

According to Michael P. Todaro (1997), the determinants of migration are very diverse and complicated. He models migration has a choice process implying that the decision is also taking the specific socio-economic situation into account. In general, there are several possible reasons for migration such as (i) social aspects, with migrants having the aspiration to escape from poor socio-economic condition or to change traditional life style in their region of origin; (ii) natural ecological reason such as the impact of natural calamity, water pollution, etcetera driving people to migrate; (iii) demographic reasons, such as pressures from population growth, and bulges in the population at working; (iv) broader reasons having to do with cultural or needs for information and education.

Yaohui (1999) examined determinants of migration decision in China. The author found that the availability of land and of paved roads in an area were negative related to the decision to migrate. Reductions in the availability of land per head in rural drives part of the labor force to migration from the non-farm sector to other sectors in urban. On the other hand, a good rural road system countervails migration pressures as it creates many opportunities for people in business and increases of production value.

Some researchers focused on personal characteristics of migrants rather than on economic factors. According to Mark and Oded (1997) age and education of migrants are two important factors. For example, David; Herrington (1969) show the high

concentration of migrant in specific age brackets with the highest propensity to migrate in the 20-29 age brackets.

A few studies focus on explaining rural to urban migration in Vietnam. Loi (2005) argues that that pressure of population growth and urbanization are key determinants of labor migration for people in rural. Ian and Diep (2006) explained migration by focusing on plot size and the distance between origin and destination. Results from the analysis of inter-provincial out-migration to urban in the period of 1994 – 1999, Sang (2004) also found that distance is the strongest determinant of migration.

Most models estimate the importance and influence of migration determinants using log-linear regression model. One study for Vietnam incorporates demographic and socio economic factors in a log-linear regression to explain migration (Sang, 2004). Similar studies using the log-linear regression model to examine migration behavior of households are David H. Kaplan's work (David, 1995) on explaining the difference in migration determinants for linguistic groups in Canada or Anh (1997); Sang (2004) explaining inter-regional migration in Vietnam.

Other works, for example Somik, Harris and Zmarak (2006) and Yaohui (1999) were used the binary logistic model to explain migration decision for households. Apart from the works of the estimation of determinants of migration behavior reviewed, other authors such as Ann (1979); Ian and Diep (2006) are interested in measuring the costs of migration associated with the migration decision of household.

3. Description of data and basic statistics

Data in this paper was collected by the author and research team in July of 2007. The data was collected from the secondary and primary source. Of which, the secondary data includes documents, reports obtained from local agencies (see Annex 1) and the field survey consists of 76 Khmer households in Tra Cu district that are representative for the Khmer families of Tra Vinh province.

In Vietnam, the Khmer minority accounts for more than one million of population. Khmers live mainly in specific provinces of the Mekong Delta like Tra Vinh, Soc trang, Vinh Long, Can Tho, An Giang and Kien Giang. Among these provinces, Tra Vinh has the highest density of Khmer in the Mekong Delta, accounting for above 30% total population of Tra Vinh.

In addition, the so-called PRA⁴ tool is used to draw a more detailed picture of the socio - economic situation, the availability and use of natural resources and the labor migration pattern of the Khmer minority in rural area. 40 and 36 are the number of the migrated and non-migrated Khmer families respectively that are chosen for an extensive interview.

Demographic aspects

The survey indicates that the Khmer families have on average about six persons and 80% of persons in family are of working age bracket of 15 and 60. More than one third of the numbers of family's members are active as migrant laborers working outside their village, corresponding to 45.47% of the laborers in family.

The information of the PRA review of the studied village reveals that 70% of migrants moved individually but 10% of them moved as a complete family (including children) and 20% of migration moved as a group of several families. In general, such case of family based migrations are mostly seasonal as workers engage mainly as farm laborers during harvest or soil preparation times, but this seasonal pattern of migration is not predominant in the studied village.

Table 2: Characteristics of labor by migrated households

Variables	Unit	Mean	Min	Max	S.D
Household size	Head	5.60	3.00	12.00	1.86
Number of Labor	Head	4.54	1.00	12.00	2.14
Number of migrant	Head	1.88	1.00	4.00	0.91
Ratio of labor ^a	%	79.59	33.33	100.00	19.99
Ratio of migrant ^b	%	35.19	16.67	71.43	15.22

Source: the survey data, 2007

Note, ^a this ratio is calculated by number of labor divided by household size; ^b this ratio is calculated by the division of number of migrant by household size.

Because of a long traditional history, Khmer often have been working for other families engaged as harvesting paddy, portal jobs, farm work, etcetera. Hence, the major sources of Khmer household income are farm wages. Compared with other minorities the Khmer population has less education. According to the job and unemployment survey of Tra Vinh province in 2006 (see annex 2), some 85% of Khmer migrants did not attend any vocational training before moving out, and only 13% of migrants having a certificate of apprentice awarded by the vocational centers.

⁴ PRA - Participatory Rural Appraisal is one of useful tools to create the participation of community in planning and performing a development program.

This limited education seriously affects migrants in terms of job opportunities and in possibilities to upgrade income after migration.

Besides, some people have motorbike work as motorbike driver service in village. This work is very popular and suitable for men who are being unemployment, poor education; but it is required to have capital to buy a motorbike (price of a “Chinese style” motorbike is under 10 million VND⁵). As showed in figure 1, on average, wage is a main source of income for the migrated households, because most of them limit in resources of human and cultivated land as well. So, they often have to work for other households or as motorbike driver service. Only 20.3% of income is depended on farm work, as mentioned previously, natural resource constraint is not suitable for agricultural production, because of influence of sea water from September to May of following year.

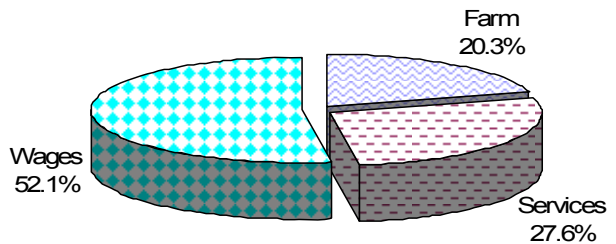


Figure 1: Source of income for the khmer household
Source: the survey data, 2007

Some characteristics of migrants from the studied village are summarized in Annex 3. There are 76.32 of migrants who have moved above 6 months outside their province. Their destinations are the commercial or industrial cities like Ho Chi Minh and Binh Duong where they may initially engage in informal sector jobs such as construction work (for men), working as waitress in small eating bars or family servant (for women). The survey reports that migrants are likely young, 57.5% of those are in age of 20-29 and the male migrants are more likely dominant than their female counterparts, accounting for closely 70% of the sample. In traditional style of family in the Asian nations and as well as in Viet Nam, women are often responsible for home works (e.g. taking care of children and elder). It was also evident by Yaohui (1999), Wang, Maruyama, Kikuchi (2000). Furthermore, the single migrants are dominantly found in the survey.

Labor migration flow of the Khmer families

By the report on migration from Tra Vinh DOLISA in 2007, it found that most migrants in the studied site moved out their province, making up 88.45% of total migrant

⁵ 1USD = 16,200 VND in July, 2007

population, as shown in annex 4. The remaining moved within province are women, because they wanted to work closely to their home to manage their home work.

Box 1: Married women prefers to work within province

A case of Mrs Kim Ngoc C, 27 years old, lives in Ward 1 of Tra Vinh Town. Prior 2007, she moved to Ho Chi Minh city for working with a monthly salary of VND 1.3 million. However, currently she comes to Tra Vinh job creation center for seeking a informal job at the Tra Vinh Town in order to go back her home everyday for taking care her parents and child. Although, salary for new job is as a half as of the previous one.

Source: Interviewed information for job seekers at Tra Vinh Job Creation Center.

In developing countries where information system has not developed yet, thus most migrants often get access to job information from the informal sources (Wang, Maruyama, Kikuchi, 2000 and Andrés, 2004). The survey shows that 82.5% of respondents obtained the job information from their relatives before moving (see annex 4). To maintain their link with family and village, migrants often go back their village on occasion of holidays like Traditional New Year when they have opportunity to exchange of works with their relatives. Therefore, this is a useful source of information for a potential migrant because their migrated relatives have experienced on migration at urban destinations. In addition, they also get the job information from the formal networks like job creation center (see annex 5) and recruitment companies, but that such cases are not popular in the survey.

Types of jobs which migrants have engaged at the destination are summarized in annex 4. Because of limit of education and skills, most migrants can only engage in the informal sector works such as portal, construction work (making up 57.5%), waitress in eating bars (accounting for 22.5%) and 20% of them work as house servant, respectively. This result is also appropriate with few previous studies, for example Wang, Maruyama, Kikuchi (2000) and the ILO (2001).

4. Labor migration decision: its determinants

Model specification

Normally, the determinants of migration decision are examined by a probability function to predict a likelihood of decision of migration for a certain household. Some researchers, such as Mohammad (2008), Qain (2003), Richard (2001), Hossain (2001), Yaohui (1999), Hoddinott (1994) and Ann (1979) used the binary regression model (so called probit or logistic model⁶) to estimate the relative effects of the explanatory variables on the likelihood of migration decision. These models are the most popular techniques with a dichotomous dependent variable.

An alternative to probit model is logistic (or logit) model, currently the logistic regression analysis is more commonly used than probit analysis due to some reasons: *first*, explanatory coefficients in the logistic model are transformed into exponential terms as odd ratios; *secondly*, it is used extensively in the social sciences.

The logistic model is defined as

$$f(z) = \frac{1}{1 + e^{-z}} \quad (4.1)$$

where z is a group of explanatory variables and $f(z)$ is output of the logistic model (e.g. probability of migration decision for household).

In another hand, z is usually defined as

$$z = \beta_0 + \beta_1 x_{1i} + \dots + \beta_k x_{ki} = \ln \left(\frac{p_i}{1-p_i} = odd \right) \quad (4.2)$$

where β_0 is called the intercept and $\beta_{1...k}$ are logistic coefficients of the explanatory variables, namely $x_1 \dots x_k$ respectively; p_i is the probability of the presence of event and $1-p_i$ is the probability of even absence. Ratio between the probability of the presence and absence of event is called as odd ratio. The equation (4.2) is transformed into the exponentiation term and finally we have the odd ratio, as follow:

$$odd = e^z = e^{\beta_0 + \beta_1 x_{1i} + \dots + \beta_k x_{ki}} \quad (4.3)$$

⁶ The probit and logistic regression models are to produce very similar predictions, but the estimated coefficients of the logistic analysis are higher than those of the corresponding probit analysis. In addition, logistic (logit) analysis is based on log odds which are appropriate to make some inferences on the predicted probability of dependent variable in the survey.

Theoretically, the odds are often used to express the predicted change of a unit increase in the corresponding explanatory variables. For example, if the odd is less than one which corresponds to decrease; the contrast is to increase; and it equals to one meaning that unit change in the explanatory variable does not affect the dependent variable.

Now returning the model of migration decision in the survey, more specifically the dependent variable is binary that is coded by 1 for the migrated households and 0 for otherwise; the reduce form of migration decision model is shown follows:

$$\ln(odd) = f(hh_i, D_i) \quad (4.4)$$

where $f()$ is a general function including a group of quantitative variables (hhi) and some of qualitative variables (Di). The quantitative variables are household size (person) and plot size ($1,000m^2$), while most qualitative variables are in terms of dummy forms taking positive values equal to one for temporary house status, landless household, relatives at destination and non-farm based income.

Estimated result of the migration decision

The logistic regression model was run on both the migrated and the non-migrated families in the surveys. Table 3 below shows the result of estimated coefficients in terms of odds ratio and their statistical properties. Generally speaking, there are some interesting findings from the survey.

Table 3: Result of migration decision model

Logistic regression	Number of obs	=	76
	LR chi2(6)	=	33.24
	Prob > chi2	=	0.0000
Log likelihood = -35.953543	Pseudo R2	=	0.3161

var1	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
var2	1.992761	.4841792	2.84	0.005	1.237769 3.208269
var3	.8267264	.0603353	-2.61	0.009	.7165398 .9538571
var4	4.746498	3.106084	2.38	0.017	1.31629 17.11572
var5	2.43433	1.51307	1.43	0.152	.7199643 8.230911
var6	1.289553	.8051594	0.41	0.684	.3792918 4.384345
var7	.4902282	.3147975	-1.11	0.267	.1392527 1.72581

Note: Var2,3, 4,5,,6 and 7 are household size, plot size, temporary house, landless, relatives, non-farm, respectively.

First, the large families have many opportunities in making migration decision rather than the small families in the survey. More detail, the probability of migration decision will increase by twice corresponding with adding one person in family at p-value <

0.01. Previous studies argued that migration decision is positively linked with the household size, those were done by Mariapia, 2008; Hossain, 2001; Alan, 1999; Sekhar, 1993 and Connell, 1976. Obviously, people migrate mostly from the large families because it is easy to select out of members to send to urban destination.

Secondly, as expected, family's plot size has a negative effect on migration decision; as noted previously, most rural people are much belonged to agricultural sector. In other words, cultivated land is seen an essential resource for them to survive. So, the survey also reports that people will stay at village as having much land for production. In contrast, probability of migration for the landless families is greater twice than that for the families with land holding.

Thirdly, poverty circumstance of family has been seen as a main reason driving rural people away from their home village (Derek, 1994; Skeldon, 2003; IOM, 2005 and Moshe, 2008). In the survey, it is interesting that most migrants are originated from the poor families and they live in temporary built houses. Therefore, the estimated result shows that people in the temporary built households have a greater probability of migration than the others live in either a semi or permanent built household at the statistical significance of 0.05.

Besides, the remaining explanatory variables have no statistical effects on the probability of migration decision including landless, relatives at destination and non-farm. And finally, there is no multicollinearity problem among the variables found in the model.

5. Labor migration: its benefits

How does benefit be identified?

As known widely on literature of migration decision, an amount of expected income at destination not only improves his/her life there, but also affect to livelihood of his/her relatives at rural origin. Hence, in the study of migration's income and poverty impact, Maurice (2006) argued that a divergence in income between before and after moving is considered as income contribution (so called financial benefit) from migrant to his/her family. In addition, the income contribution also includes flows of goods, money from migrant to his/her family in rural area.

The data also allow us to measure the contribution of labor migrants to total family's income. This contribution is identified by the ratio of the difference in family's income and number of labor between before and after moving or

$$\Delta Y_{hh} \equiv \frac{1}{n-m} (Y_M - Y) \quad (5.1)$$

where, ΔY_{hh} income contribution to family, n: household size, m: number of migrant, Y_M family's income as migrated and Y refers to family's income before moving.

However, one limitation of the Equation (5.1) is not described on costs of migration. Therefore, an individual will decide to migrate, if he receives the positive amount of differential in income between rural and urban area after subtracting all costs of migration or

$$X_j(h) - X_i(h) - D_{ij}(h) > 0 \quad (5.2)$$

where, $X_j(h)$: income at urban, $X_i(h)$: income at origin, and $D_{ij}(h)$: costs of migration.

Cost of migration is measured by a sum of all involved costs during finding a job. That includes tuition of apprentice, administrative procedure on applying a job, testing health, transport costs etc, but the tuition for apprentice is not existed in the study. This can be explained by two main reasons: *first*, they did not attend any training before moving; *secondly*, all candidates, who are Khmer minority, are granted a subsidy of tuition from the Government as attending school. Apart from these explicit costs, an opportunity cost of finding a job is also calculated in cost of migration. It is considered as an amount of income to be loss during seeking a job (Derek, 1974); the opportunity cost of migration is identified, as follows:

$$C_o = N_d * w_r * p \quad (5.3)$$

where, C_o is the opportunity cost (VND); N_d is number of day of finding a job and doing administrative procedure on applying, w_r refers to current wage of migrant at origin (VND a day) and p is a probability of finding the current work at origin with wage w_r (%).

Measuring benefit of labor migration

From the result of analysis displayed in table 6, migrant earns on average about VND 12 millions a year (equivalent to VND one million a month). Generally speaking, this is a popular wage for the manual laborer which is far higher than the wage in rural area. Based on testing a pair comparison⁷, it is evident that there is found on the statistical difference in annual income for the migrated families before and after migration. For

⁷ This statistical tool is appropriate with a case of small sample size, it was cited online at <http://www.answers.com/topic/t-test?cat=health>

example, VND 13 millions is an annual increased amount of money for the family after migration with its statistical significance at 0.05 level (see annex 7).

Table 4: Income and benefits of migration

Indicator	Unit: 1,000 VND/year			
	Mean	Min	Max	S.D
Migrant's income at destination	11,787	5,000	36,300	6,023
Income contribution ^a	4,540	250	35,280	6,443
Benefit of migration ^b	9,986	665	36,265	6,572

Note: ^{a, b} calculated by Equation 5.1 and 5.2 respectively.

As shown in Equation 5.2 and 5.2 on calculation of contribution and benefit form migration by Maurice 92006) and Ian & Diep (2006), as a result of analysis in table 3, Working at destination has not only improved income for migrant, but also increased in income for his/her home at origin with an amount of 4.5 millions VND a year. On average, after subtracting all costs involved to migrate, the clear evidence is found that income at destination is higher than that at origin. This base fosters rural residents to migrate, because migration is an investment in human capital, a person will move if he expects the benefits outweigh the costs (Julie, 1983).

6. Conclusion

Rural to urban labor migration has a long history for rural people and as well as for Khmer minority in the Mekong Delta. This study examines 76 Khmer families in Tra Vinh province of the Mekong Delta region. The survey indicated that most migrants are characterized by unskilled, male, and single. The result of the logistic regression model revealed that migration decision is interpreted by following factors: number of member in family, plot size, poverty setting and some others. As expected, labor migration not only brings to an improvement of income for the own migrants, but also contributes to total income of their family at origin.

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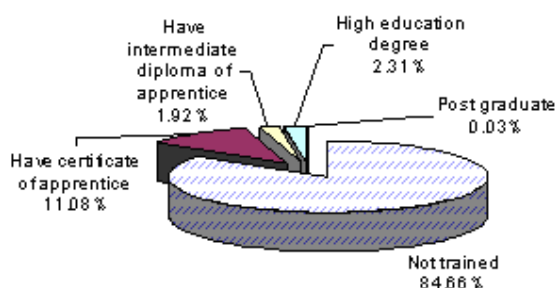
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Annex 1: Summary of the collected data and information

Tool	Provider	Information
KIP	Group A	Secondary data on labor and labor migration, policies on vocational training and job creation. From this data source, district with a high density of Khmer is chosen to be surveyed
KIP	Group B	Secondary data on labor and labor migration, policies on vocational training and job creation. Similar to previous way, the targeted village where has a high density of Khmer migrants, is selected as a sample.
KIP PRA	Group C	Secondary data on socio-economic situation, natural resource condition, population and labor in village. Characteristics of labor migration for Khmer and determinants of labor migration. 76 Khmer families are proposed to extensively interview
Interview	Group D	Household’s characteristics of resources are evaluated by the stable livelihood framework that consists of the following capitals: natural, human, financial, physical and social. Household information of labor migration: determinants, job information, training, income, costs, advantages and disadvantages.

Note: Group A, which are the provincial agencies, includes Department of Labor - Invalids and Social Affairs (DOLISA), Center for Job Creation, Board of Ethnic Groups; Group B consists of district agencies like Division of Labor, Center for Vocational Training, Statistical Division; Group C consists of village organizations like People Committee, Association of Women, Youth Union; Group D includes 40 migrated Khmer households.

Annex 2: Distribution of the education standard of migrants



Annex 3: Some characteristics of migration from the survey

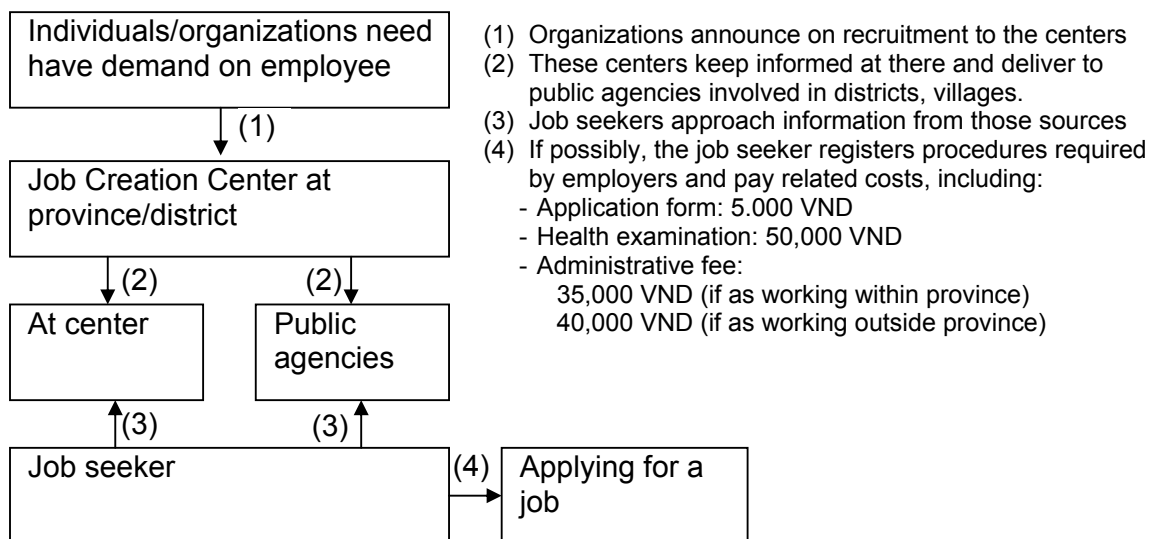
	Sample	%
<i>Duration</i>		
Under 3 months	3	7.89
3 – 6 months	6	15.79
Above 6 months	29	76.32
<i>Age</i>		
15-19	7	17.5
20-29	23	57.5
30-39	6	15
40 +	4	10
<i>Sex</i>		
Male	25	62.5
Female	15	37.5
<i>Marital status</i>		
Married	10	25
Single	30	75

Annex 4: Destination and types of job for migrants at the destination

	Sample	%
<i>Destination*</i>		
Within province	-	11.55
Outside province	-	88.45
<i>Source of information on job</i>		
Known themselves by seasonal	2	5.00
Relatives in village	33	82.50
Recruitment announcement from company	3	7.50
Job creation center	2	5.00
<i>Types of job</i>		
Portal/construction works	23	57.50
Seller/waitress	9	22.50
House servant	8	20.00

Source: the survey data and *cited from report of Tra Vinh DOLISA, 2007

Annex 5: Formal network of job information



Source: Information provided by staff of Tra Vinh Job Creation Center

Annex 6: Testing multicollinearity among the variables in the model

Variable	VIF	1/VIF
var2	1.26	0.793404
var3	1.13	0.884487
var4	1.10	0.905966
var5	1.09	0.920271
var6	1.06	0.946161
var7	1.05	0.956370
Mean VIF	1.11	

Annex 7: Result of testing two samples on income

	Mean	N	Std. Deviation	Std. Error Mean				
Postmigrated income of HH(Ym)	22,184	40	29,625	4,743				
Premigrated income of HH (Y)	8,736	40	9.,36	1,559				
		N	Correlation	Sig.				
HH's income before and after migration		40	.825	.000				
Paired Differences								
	Mean	S.D	Std. Error Mean	95% Confidence Interval of the Difference	t	df	Sig. (2-tailed)	
				Lower	Upper			
HH's income before and after migration (million VND)	13.4	22.2	3.5	6.2	20.6	3.7	39	.001