

The Effect of Social Networks on Labour Market Outcome among Migrants in Vietnam

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Abstract

This paper examines the labour market outcome of migrants in a developing country of Vietnam with respect to the role of social networks and other human capital on the job search duration and earnings using the 2004 Vietnam Internal Migration Survey. The findings contribute to the growing literature of the labour market outcome of migrants in the developing world. The main findings are: those migrants who have spouse and family members spend longer time on initial unemployment, enjoy higher wage, and are more likely to work in the informal sector. In regards to having friends or countrymen at the destination, we find that this type of social network has positive and significant effect for all migrant groups. This indicates that friends/countrymen are source of information of the work opportunity in at the destination for the potential migrants. Furthermore, having friends and countrymen shorten the job search for formal jobs for rural to urban migrants, while this channel has no effect among urban to urban migrants. This paper extends the current literature by distinguishing the formal versus informal jobs and among the first to study labour market outcome of migrants in a developing country.

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1. Introduction

The mobility of labour across regions is a recent phenomenon in the developing countries. In Vietnam, migration has risen since the 1990s; this is mainly due to rapid urbanization, industrialization and high rates of under- and unemployment in rural areas. According to the 1999 population census, there were 4.5 million people changed their place of residence (UNFPA, 2006). However, little research has paid attention on the labour market outcome of migrants. This paper contributes to the literature of the labour market outcome of migrants with respect to job search duration and earnings using a novel dataset-the Vietnam Internal Migration Survey conducted in 2004 by the General Statistics Office of Vietnam and UNFPA.

Migrants are relatively disadvantaged group compared to the natives in the local labour market due to lack of information such as how and where to find a job in the place of destination and what is the fair wage level. In addition, their skills and experience are also difficult to be assessed by the potential employers because of lack of qualifications. These factors likely lengthen job search duration and lead to unfavourable wage outcome. Nevertheless, if a migrant knows someone who lives or has work experience in the place of destination such as friends, countrymen, relatives, she can have better knowledge about the labour market that can reduce the job search duration and be able to bargain a better wage level compared to those who do not have ones. On the other hand, social networks provide help in initial period of re-settlement at the destination. According to Massey et al (1993), they stress the critical role of social networks in the whole course of migration as “*Migrant networks are sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship, and shared community origin*”. The social networks thus significantly reduce the migration costs and risks for subsequent migrants.

Although there is growing literature on the effect of social networks in the labour market outcome of migrants internationally, there is limited research of this kind in the context of Vietnam, given that about 76.6% of migrants have relatives and friends at the destination before arrival. Most of studies up to date look at some other aspects of migration such as the determinants of the earnings, quality of life and simple job search duration for all migrants (UNFPA 2006a, 2006b); the determinants of inter-provincial migration flows (Dang et al 1997); the determinants of migration decision (Dang and Le 2001, Trinh 1998).

This paper contributes to the literature in the following aspects. First, given that majority of migrants reported that they have found a job after a short period of time (i.e. about 85% of migrants start work within 4 weeks and 95% start work within 16 weeks); this is probably because migrants desperately have to work any job in order to earn a living once they arrived to the destination. Therefore, it is important to know how long it takes for a migrant to obtain a job, but it is also critical to know what kinds of job they have rather than any job (i.e. formal versus informal). This paper investigates the effect of social networks, along with other human capital characteristics, on job search duration for both formal jobs versus

informal jobs. We believe that there is no study in the literature that has formally distinguished formal and informal jobs in the context of labour migration in developing countries as this paper does. The findings will potentially provide deeper insight about the labour market outcome of migrants in the developing world, where a large share of migrants have to work in the informal sector with limited benefits and protections specified by Law. The duration model with two competing risks (formal versus informal jobs) is used to estimate the job search duration. The use of this model is more rigorous than the choice model because the former not only can distinguish the types of jobs (i.e. from initial unemployed to formal versus informal jobs) but also the timing of obtaining jobs. In addition, the duration model can also accommodate the problem of censoring, where the spell of initial unemployment has not completed by the time of interview. This paper follows an established body of research focusing on analysing the effect of individual characteristics, unemployment benefits and labour market condition on the job search duration following unemployment spells to specify the empirical model. Some recent works are: Arulampalam and Stewart (1995) study the unemployment duration in Britain; Grogan and van den Berg (2001) study the unemployment duration in Russia using the longitudinal data in the 1990s; Kupets (2006) studies the unemployment in Ukraine in 1998-2002. To complement the duration model, a multinomial logit model with three choices (i.e. no job; having formal job; having informal job) is estimated to explore the effect of social networks and other human capital variables on the job outcome.

Secondly, this paper contributes to the literature of the labour market outcome of migrants in regards to the effect of social networks and the types of job, along with other human capital, on earnings in the context of Vietnam. The estimation takes into account the sample selection problem due to the missing earnings of those who do not work by the Heckman two-stage method (1979). The issue of interest is whether social networks help migrants earn more due to better matching between migrants and employers or social networks reduce the earnings due to uncompetitive hiring channel; and whether working in the informal sector incurs any earnings penalty for the migrants.

Third, this paper examines the labour market outcome for different streams for migration (rural to urban, rural to rural, urban to urban, urban to rural), while the current literature on labour migration in the developing countries mainly account for rural to urban migrants.

To address the research questions, this paper uses the Vietnam Internal Migration Survey conducted jointly between the Statistics Office of Vietnam and UNFPA in 2004, which contains about 5000 migrants aged 15-58 who reside at the destination less than 5 years and more than 1 month. This is the most comprehensive and containing more detailed information of migrants than other previous surveys such as household living standard surveys. The social networks are defined as having spouse/family members, or blood relatives, relatives and friends at the destination before moving.

The main findings are: those migrants who have spouse and family members spend longer time on initial unemployment, enjoy higher wage, and are more likely to work in the informal

sector. In regards to having friends or countrymen at the destination, we find that this type of social network has positive and significant effect for all migrant groups. This indicates that friends/countrymen are source of information of the work opportunity in at the destination for the potential migrants. Furthermore, having friends and countrymen shorten the job search for formal jobs for rural to urban migrants, while this channel has no effect among urban to urban migrants.

A remarkable finding is that social networks plays more important role in the informal sector than the formal sector. This is because the formality of the formal sector is more likely preventing the role of social networks to play a role. In addition, education plays a significant role in predicting the job search duration for the types of jobs: those with high qualifications such as upper secondary and university take a shorter time to find formal jobs, while those with primary and lower secondary take a shorter time to find informal jobs.

The structure the paper is as follows. Part 2 briefly reviews the related literature and some important features of the Vietnam labour market. Part 3 reviews the up to date literature on the migration issues, job search duration and earnings. Part 3 discusses the Dataset. Part 4 specifies the model and estimation for the job search duration and estimation. Part 5 specifies the model and estimation for the earnings among migrants. Part 6 concludes.

2. Literature Review and Vietnam Labour Market

2.1 Literature Review

The role of social networks in the labour market as the conduit of informational exchange and referral channel has been documented in the theoretical as well as empirical literature (Cahuc and Fontaine, 2008; Montgomery, 1991, 1992; Calvo-Armengol and Zenou, 2005). This paper stands specifically on the literature of the effect of social networks on labour market outcome of migrants. The literature up to date has explored various types of social networks and documented that the existence of social networks increases the probability to migrate and better employment outcome (i.e. higher probability to obtain a job and higher probability to obtain a non-agricultural job). For example, the social networks are defined as the early migrants resided at the destination in Delhi, India (Banerjee, 1983); as the number of experienced migrants in village at origin in China (Zhao, 2003); as the relative share of migrants from a particular province in the total population of migrants at the destination in Bangkok, Thailand (Yamauchi and Tanabe, 2008); and as relatives, friends and colleagues at the destination in Germany (Rainer and Siedler, 2009).

The other critical aspect of labour migration is earnings. For example, Borjas (1992) examines the assimilation in earnings of young internal migrants and of immigrants in the context of the U.S labour market; he finds that initially both internal and immigrants earn less than natives by 7% and 11% respectively and then the earnings gradually converge to the natives' earnings after 3 years and 8 years respectively. In another paper about assimilation in earnings of immigrants in the U.S, Borjas (1995) finds that immigrants earns less than about 15-20% during their working life due to relatively less skilled than native labour force.

Increasing attention has been on how social networks have effects in improving the earnings of migrants. For example, Amuedo-Dorantes and Mundra (2007) examine the effect of social networks (i.e. if an immigrant have relatives or friends in the U.S) in the earnings of authorized and unauthorized Mexican immigrants in the U.S; Munshi (2003) defines social networks as the size of established immigrants in the U.S originating from the same community of new immigrants; Aguilera (2005) defines social networks as having family member, friends and other social organizations to examine the effect of social networks on earnings among Puerto Rican migrants in the U.S; and Rainer and Siedler (2009) examines the role of social networks on earnings among East-West migrants. All these studies find robust and positive effects of social networks on earnings among migrants, which confirm that social networks play as an important conduit in exchanging information, encouragement, orientation and assistance for new migrants at the destination.

2.2 Vietnam Labour Market

Vietnam has young population structure, mostly in the age group of 15 and 24. As a result, about 1.2 million people enter the labour market in recent years, which create enormous pressure in the labour market. Approximately 50% of the labour force is working in the agriculture sector, who are typically underemployed due to the growing use of machinery and modern equipments. This creates a growing surplus of the labour force in the rural areas. In addition, due to a large diversify in the economic development across provinces in Vietnam. These factors are forces behind the large scale migration streams from the rural to urban areas in Vietnam, mainly for job opportunities.

Despite a growing labour force, a large percentage of the labour force is unskilled. In 2008, 40% did not attend any school or only primary school, 34% completed lower secondary school and 21.5% completed upper secondary school and 65.3% did not attend any technical education in 2007 (Vietnam Financial Review, 2010). This poses a critical challenge for the new job seekers, who do not have proper qualifications; they are at serious disadvantaged ground in the labour market such as suffering low pay and working in the informal sector without any protections by Law.

The dynamic private sector is the main employer of the new labour force, including migrants. The government proposes a level of minimum wage that can be adjusted year by year to ensure the basic needs and reasonable accumulation of human capital of the workers. However, the actual pay in the formal sector is generally well above the minimum wage depending on the merits of the workers. On the other hand, the actual pay in the informal sector is not regulated by the Law. In many cases, informal workers have to work in very poor conditions and underpaid.

POPULATION	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total population [<i>million; as of 31 December</i>]	76.60	77.63	78.62	79.54	80.47	81.44	82.39	83.31	84.22	85.12	86.02
Population density [<i>persons per square kilometre</i>]	233	236	239	242	246	249	249	252	254	257	260
Population [<i>annual change, percent</i>]	1.5	1.4	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1
Urban population [<i>percent of total population</i>]	23.6	24.2	24.7	25.1	25.8	26.5	27.1	27.7	28.2	29.0	29.6
LABOR FORCE [<i>million; as of 1 July</i>]	37.7	38.5	39.5	40.4	41.5	42.5	43.6	44.3	45.1	46.0	...
Employed ^a	36.0	37.6	38.5	39.5	40.6	41.6	42.8	44.0	45.2	46.5	47.7
Agriculture	24.8	24.2	24.5	23.2	23.1	24.4	24.4	24.3	24.4	24.4	24.8
Manufacturing	3.1	3.5	3.9	4.2	4.6	4.9	7.4	8.1	8.6	9.2	9.8
Mining	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5
Others	7.9	9.6	9.8	11.9	12.6	12.0	10.6	11.2	11.8	12.3	12.7
Unemployed	1.7	0.9	1.0	0.9	0.9	0.9	1.1	1.0	0.9	1.1	...
Unemployment [<i>rate percent</i>]	4.4	2.3	2.5	2.2	2.2	2.1	2.5	2.3	2.0	2.4	...
Labor force [<i>annual change, percent</i>]	2.0	2.2	2.6	2.3	2.7	2.4	2.6	1.6	1.8	2.0	...
Labor force participation [<i>rate percent</i>]	...	49.6	50.2	50.7	51.1	51.8	52.5	51.1	51.2	55.5	57.3
Male	...	50.8	51.4	52.1	52.7	53.8	55.7	54.3	54.4	57.9	...
Female	...	48.4	49.0	49.3	49.5	49.9	51.2	48.0	48.2	53.2	...

Source: ADB Key Indicators 2010

3. Data

3.1 Sampling and Descriptive Statistics

We have access to the 2004 Vietnam Migration Survey dataset conducted by the General Statistics Office of Vietnam and the United Nations Fund for Population Activities (UNFPA). Migrants are defined as those who moved from one district to another within five years and not more than a month before the time of survey. The Survey aims to explore the key aspects of mobility across districts such as: (i) the process of migration including the decision to move, number of moves, process of settling in and finding paid work; (ii) underlying individual characteristics of individuals undertaking migration; (iii) quality of life of migrants in terms of housing, education, health care, remittance and saving. The survey consists of 4890 migrants in the working age of 15-58 in the major destinations, including Hanoi, Hai Phong, Hai Duong, Quang Ninh, Gia Lai, Dak Lak, Dak Nong, Lam Dong, Ho Chi Minh City, Binh Duong, and Dong Nai (UNFPA, 2006a,b). The sampling strategy is 4 stages: (i) five areas having high level of migration are selected; (ii) 20 communes/wards with high presence of migrants are selected; (iii) 4 urban-blocks and villages with high presence of migration are selected; (iv) migrants are randomly selected from the household list. Therefore, the sample is not representative for migration phenomenon in Vietnam because the selection of survey place is chosen intentionally towards to provinces/communes/wards which have high level migrants, information to construct sampling weights that would adjust for the unequal probability of selection is not available (see UNFPA and GSO, 2005 and the endnote for more details)ⁱ. The observation is individual-time of survey-location, with detailed personal information about migrants themselves; however, information about his family background is not recorded. The only information about his family we have is whether the migrants move with any family members and whether the migrants are household head at the new place.

The survey's questionnaire asks if a migrant starts work after arrival at the current place: "Did you start working after you arrived; and how long it took for you to obtain the first job on arrival". It is concerned that since the labour market in Vietnam is rather informal, a majority of jobs are not proper; there is no labour contract with limited security and benefits for the workers in informal sector. On the other hand, the employers in the informal sector have power to hire and fire new workers quickly thus they are quite lax to hire and fire migrants. In addition, since the migrants are generally poor, thus it may be difficult for them to stay on job search for a long time and thus they just do whatever job available. The data shows that among 4537 migrants who have job, 1880 or 42% of migrants have labour contract: those who have labour contract have all privileges specified by Law; however, those who do not have labour contract are more likely participate in the informal sector.

We examine the variation of each independent variable during the course of job search duration; we find that all independent variables are invariant since arrival till found starting work, except Age change slowly overtime, as suggested by most of empirical research, Age can be treated as invariant variable for a reasonable time. This is true in our dataset, where 90% of migrants could find job within 1 year.

The Table 2 presents descriptive statistics for separate groups of migrants including: (1) all migrants; (2) rural to urban; (3) urban to urban; (4) migrants having formal jobs; (5) migrants having informal jobs; (6) migrants having difficulties in finding jobs; (7) males; (8) females; (9) different age groups; (10) migrants having jobs; (11) migrants having no jobs. There are some major noted differences in regards to the individual characteristics among groups as following. In regards to the duration to obtain the first job since arrived among groups; older migrants aged greater than 45 years old spend longest duration to obtain the first jobs; while the middle age migrants aged less than 45 and greater than 25 spend shortest time to obtain the first jobs; males start working earlier than females by 1 weeks; urban to urban migrants spend a little bit more time than rural to urban migrants on initial unemployment; it takes on average about 5.7 weeks to obtain formal jobs, while it takes just 3.9 weeks to obtain informal jobs. In regards to education, there is also noted difference among groups. For example, rural to urban migrants in general have lower qualifications than urban to urban migrants, this is probability due to the self-selection in the migration decision; those who have formal jobs are associated with higher qualifications such as upper secondary and university qualifications. In regards to the type of firms, the statistics shows that most of informal jobs are in private firms, while there are small percentages of informal jobs in other government organizations and foreign invested organizations. In regards to having labour contract, the proportion of migrants having labour contract for urban to urban, females and younger migrants is much higher than their counterparts. In regards to social networks, migrants who have family and relatives are more likely to have informal jobs. In contrast, migrants who use job agents as job search channel are more likely to have formal jobs.

Table 1: Duration till First Job and Censored Observations

Duration till the first job (weeks)	No of Failures	Percent	Cum.	Censoring Time (week interval)	No of Censored Obs	Percent	Cum.
0	1,073	23.9	23.9	4	1	0.25	0.25
1	1,558	34.71	58.61	36	17	4.24	4.49
2	482	10.74	69.35	40	60	14.96	19.45
3	170	3.79	73.13	44	13	3.24	22.69
4	564	12.56	85.7	48	10	2.49	25.19
8	240	5.35	91.04	88	20	4.99	30.17
12	129	2.87	93.92	92	47	11.72	41.9
16	63	1.4	95.32	96	11	2.74	44.64
20	45	1	96.32	160	2	0.5	64.59
24	49	1.09	97.42			
28	10	0.22	97.64	196	31	7.73	77.56
32	3	0.07	97.71	200	7	1.75	79.3
36	2	0.04	97.75	204	7	1.75	81.05
40	12	0.27	98.02	244	16	3.99	85.04
44	9	0.2	98.22	248	30	7.48	92.52
48	18	0.4	98.62	252	13	3.24	95.76
60	1	0.02	98.64	256	5	1.25	97.01
104	49	1.09	99.73	272	1	0.25	97.26
156	8	0.18	99.91	296	7	1.75	99
208	4	0.09	100	300	4	1	100
Total	4,489	100		Total	401	100	

Source: Calculation based on the 2004 Vietnam Internal Migration Survey

3.2 Censored Observations

Among 4890 migrants, 4489 have job and 401 do not have job by the time of survey. The completed job search duration ranges from zero to 208 weeks. The minimum and maximum censored observations are at the week 4th and 300th respectively. The transitions are grouped and the hazard rate in each interval is constant. Each individual has her own censored time that is at the time of interview because the survey time is different for each individual. Unless the censored observations are completely at random, the estimates using the uncensored observations are still unbiased. Otherwise, an appropriate method that can accommodate the timing of the censored observations should be used in order to retain the full information in the maximum likelihood function. The censored observations may not be random due to the unobserved heterogeneity across migrants: migrants are different in job search effort, located at different local labour market and background. More detailed technical description on the accommodation of the censored observations is discussed in the next part.

Table 2: Descriptive Statistics

Variable	All Migrants	Rural-Urban	Urban-Urban	Formal Jobs	Informal Jobs	Jobs Diffic	Males	Females	Age<25	Age>45	25<Age<45	Having Jobs	Having no Jobs
On Arrival to Destination-Job Search Duration Model													
Time to have jobs (weeks)	4.737	5.257	6.618	5.756	3.971	10.581	4.045	5.274	19.559	27.817	3.620	4.737	
Age on Arrival	26.590	25.301	26.788	23.802	28.305	27.212	27.458	25.940	20.490	49.145	31.976	26.684	25.546
Kinh Ethnicity	0.905	0.980	0.983	0.978	0.861	0.919	0.887	0.919	0.920	0.851	0.889	0.903	0.933
Having Jobs before arrival	0.797	0.763	0.702	0.773	0.811	0.798	0.827	0.774	0.686	0.851	0.949	0.848	0.222
Been here before	0.134	0.126	0.192	0.120	0.143	0.149	0.162	0.113	0.118	0.194	0.153	0.134	0.135
Moving with Family Members	0.380	0.269	0.308	0.228	0.474	0.430	0.385	0.376	0.156	0.754	0.636	0.388	0.289
Household head	0.884	0.879	0.848	0.897	0.875	0.916	0.862	0.900	0.892	0.802	0.886	0.894	0.768
Social Networks													
Having Family Members	0.047	0.038	0.054	0.031	0.056	0.053	0.012	0.073	0.037	0.044	0.060	0.044	0.080
Having Blood Relatives	0.296	0.284	0.313	0.249	0.324	0.352	0.304	0.289	0.285	0.363	0.303	0.292	0.332
Having Other Relatives	0.358	0.340	0.367	0.332	0.374	0.401	0.363	0.354	0.356	0.323	0.361	0.360	0.332
Having Friends	0.388	0.385	0.392	0.387	0.388	0.361	0.392	0.385	0.377	0.423	0.397	0.397	0.287
Use Job Agents	0.028	0.038	0.045	0.052	0.013	0.061	0.034	0.023	0.036	0.008	0.020	0.029	0.017
Having Labour Contract	0.381	0.462	0.486	1.000	0.000	0.275	0.332	0.417	0.486	0.121	0.274	0.415	0.000
Education													
Illiterate	0.027	0.005	0.000	0.002	0.043	0.043	0.027	0.028	0.021	0.048	0.034	0.029	0.015
Primary	0.052	0.030	0.024	0.011	0.078	0.075	0.058	0.048	0.035	0.109	0.070	0.055	0.022
Lower Secondary	0.167	0.155	0.102	0.091	0.214	0.173	0.145	0.184	0.152	0.129	0.196	0.176	0.075
Upper Secondary	0.338	0.389	0.481	0.415	0.291	0.267	0.384	0.304	0.397	0.206	0.269	0.312	0.638
University	0.070	0.049	0.168	0.149	0.022	0.022	0.084	0.060	0.055	0.137	0.087	0.071	0.065
Current Work-Earnings Equation													
Log(monthly wage)	13.563	13.686	13.912	13.734	13.437	13.526	13.691	13.461	13.553	13.374	13.595	13.563	0.000
Married	0.570	0.485	0.511	0.402	0.673	0.637	0.580	0.562	0.343	0.855	0.847	0.584	0.414
Owned house	0.428	0.275	0.424	0.271	0.525	0.470	0.436	0.422	0.317	0.706	0.549	0.418	0.546
Occupations													
Armed Forces	0.001	0.000	0.000	0.004	0.000	0.000	0.003	0.000	0.001	0.004	0.002	0.002	0.000
Leader	0.004	0.002	0.012	0.006	0.002	0.002	0.007	0.001	0.001	0.020	0.006	0.004	0.000
High Professionals	0.040	0.024	0.105	0.100	0.004	0.008	0.046	0.036	0.028	0.065	0.058	0.044	0.000
Technicians	0.022	0.022	0.030	0.048	0.006	0.014	0.021	0.023	0.022	0.012	0.023	0.024	0.000
Clerks	0.024	0.022	0.051	0.052	0.006	0.018	0.018	0.028	0.030	0.008	0.017	0.026	0.000

Variable	All Migrants	Rural-Urban	Urban-Urban	Formal Jobs	Informal Jobs	Jobs Diffic	Males	Females	Age<25	Age>45	25<Age<45	Having Jobs	Having no Jobs
Services and Sales	0.037	0.032	0.045	0.034	0.039	0.026	0.039	0.036	0.033	0.024	0.043	0.041	0.000
Skilled Argri and Fishe Wkers	0.011	0.005	0.003	0.006	0.015	0.012	0.016	0.008	0.009	0.012	0.015	0.012	0.000
Craft Workers	0.244	0.368	0.235	0.388	0.156	0.222	0.239	0.248	0.312	0.077	0.178	0.266	0.000
Plant/Machine Workers	0.096	0.084	0.087	0.173	0.048	0.084	0.107	0.088	0.129	0.012	0.063	0.104	0.000
Elementary Occupations	0.413	0.330	0.253	0.189	0.552	0.497	0.430	0.401	0.300	0.573	0.542	0.450	0.000
Firm Types													
Government Organization	0.117	0.135	0.179	0.289	0.011	0.041	0.130	0.107	0.115	0.105	0.122	0.127	0.000
Collective Organization	0.005	0.006	0.008	0.008	0.003	0.002	0.006	0.004	0.004	0.004	0.007	0.005	0.000
Private Organization	0.431	0.344	0.269	0.032	0.676	0.525	0.498	0.381	0.284	0.621	0.606	0.469	0.000
Private Capital Organization	0.154	0.181	0.212	0.243	0.099	0.104	0.183	0.131	0.187	0.069	0.120	0.167	0.000
Foreign Invested Organization	0.188	0.225	0.153	0.429	0.039	0.210	0.108	0.247	0.276	0.008	0.092	0.204	0.000
Year of Arrival													
1999	0.042	0.028	0.042	0.030	0.049	0.065	0.049	0.036	0.038	0.032	0.049	0.043	0.030
2000	0.215	0.193	0.212	0.184	0.233	0.228	0.214	0.215	0.189	0.194	0.251	0.219	0.160
2001	0.173	0.176	0.168	0.172	0.173	0.181	0.173	0.173	0.165	0.198	0.181	0.173	0.170
2002	0.182	0.198	0.212	0.208	0.166	0.171	0.174	0.187	0.189	0.177	0.173	0.182	0.185
2003	0.200	0.204	0.200	0.237	0.177	0.193	0.197	0.202	0.218	0.214	0.173	0.199	0.204
2004	0.189	0.201	0.165	0.169	0.201	0.163	0.191	0.187	0.201	0.185	0.173	0.183	0.252
Type of Destination													
Large City	0.398	0.630	0.672	0.474	0.351	0.365	0.383	0.410	0.433	0.363	0.355	0.388	0.514
Small City	0.225	0.370	0.328	0.290	0.184	0.242	0.223	0.225	0.247	0.105	0.206	0.221	0.262
Town	0.033	0.000	0.000	0.034	0.031	0.022	0.032	0.033	0.028	0.073	0.034	0.030	0.065
Countryside	0.345	0.000	0.000	0.201	0.433	0.371	0.362	0.332	0.293	0.460	0.404	0.362	0.160
Type of Origin													
Large City	0.092	0.000	0.418	0.118	0.076	0.049	0.094	0.090	0.098	0.121	0.085	0.087	0.147
Small City	0.098	0.000	0.582	0.129	0.078	0.081	0.097	0.098	0.090	0.165	0.096	0.088	0.200
Town	0.045	0.061	0.000	0.049	0.042	0.039	0.047	0.043	0.043	0.048	0.044	0.043	0.070
Countryside	0.766	0.939	0.000	0.705	0.804	0.831	0.762	0.769	0.768	0.665	0.775	0.782	0.584
Obs	4890	2379	665	1862	3028	509	2094	2796	2758	248	2137	4489	401

Source: Calculation based on the 2004 Vietnam Internal Migration Survey. Figures in each column are mean values of the variables in each group.

3.3 Nonparametric Descriptive Analysis of Duration Data

This section highlights the trend of the hazard and survival function without consideration on the explanatory variables: only the duration data is used for estimation. The survey is conducted in 2004; the week at which the survey is conducted is taken as the censored time for migrants who have arrived to the destination back since 1999 to 2004 (i.e. an individual is either failed or censored at the time of survey). The noted trends are: regardless the types of jobs and types of social networks, a large proportion of migrants could obtain employment after a short period of time as shown in the below tables. For all types of migrants (i.e. all migrants, rural to urban and urban to urban), it takes shorter time to find formal jobs compared to the informal jobs; and those who have spouse and family member, blood relatives have to spend longer time to obtain the first job compared to their counterparts; in contrast, those who have friends and countrymen spend shorter time to obtain the first jobs compared to their counterparts. This is interesting fact: very close networks may provide a lot of assistance such as housing, information that allow migrants to stay longer on initial unemployment, while knowing friends and countrymen provide limited assistance.

Table 3: Kaplan-Meier Survival Estimates for All Migrants

Time (week)	Total at Risk	Failed	Censored	Estimated Hazard Rate	Survivor Function	S.E	95% C.I	
1	3817	1558	0	0.408	0.592	0.008	0.576	0.607
2	2259	482	0	0.213	0.466	0.008	0.450	0.481
3	1777	170	0	0.096	0.421	0.008	0.405	0.437
4	1607	564	1	0.351	0.273	0.007	0.259	0.288
8	1042	240	0	0.230	0.210	0.007	0.198	0.223
12	802	129	0	0.161	0.177	0.006	0.165	0.189
16	673	63	0	0.094	0.160	0.006	0.149	0.172
20	610	45	0	0.074	0.148	0.006	0.137	0.160
24	565	49	0	0.087	0.135	0.006	0.125	0.146
28	516	10	0	0.019	0.133	0.006	0.122	0.144
32	506	3	0	0.006	0.132	0.006	0.121	0.143
36	503	2	17	0.004	0.131	0.006	0.121	0.142
40	484	12	60	0.025	0.128	0.005	0.118	0.139
44	412	9	13	0.022	0.125	0.005	0.115	0.136
48	390	18	10	0.046	0.120	0.005	0.109	0.130
60	362	1	0	0.003	0.119	0.005	0.109	0.130
88	361	0	20	0.000	0.119	0.005	0.109	0.130
92	341	0	47	0.000	0.119	0.005	0.109	0.130
96	294	0	11	0.000	0.119	0.005	0.109	0.130
100	283	0	4	0.000	0.119	0.005	0.109	0.130
104	279	49	0	0.176	0.098	0.005	0.089	0.109
120	230	0	1	0.000	0.098	0.005	0.089	0.109
140	229	0	18	0.000	0.098	0.005	0.089	0.109
144	211	0	29	0.000	0.098	0.005	0.089	0.109
148	182	0	12	0.000	0.098	0.005	0.089	0.109
152	170	0	14	0.000	0.098	0.005	0.089	0.109
156	156	8	0	0.051	0.093	0.005	0.083	0.104
.....								
192	146	0	21	0.000	0.093	0.005	0.083	0.104
196	125	0	31	0.000	0.093	0.005	0.083	0.104
244	76	0	16	0.000	0.089	0.005	0.078	0.100
248	60	0	30	0.000	0.089	0.005	0.078	0.100
252	30	0	13	0.000	0.089	0.005	0.078	0.100
256	17	0	5	0.000	0.089	0.005	0.078	0.100
272	12	0	1	0.000	0.089	0.005	0.078	0.100
296	11	0	7	0.000	0.089	0.005	0.078	0.100
300	4	0	4	0.000	0.089	0.005	0.078	0.100

Note: Total at Risk (r_j) is the number of observations at risk, Failed (d_j) is the number of failures, Censored is the number of missing spells, Estimated Hazard Rate is equal to Failed/ Total at Risk, and Survivor Function is estimated by

$$\hat{S}(t) = \prod_{j|t_j \leq t} (1 - \hat{\theta}_j) = \prod_{j|t_j \leq t} (r_j - d_j) / r_j$$

Table 4: Kaplan-Meier Survival Estimates for Rural to Urban Migrants

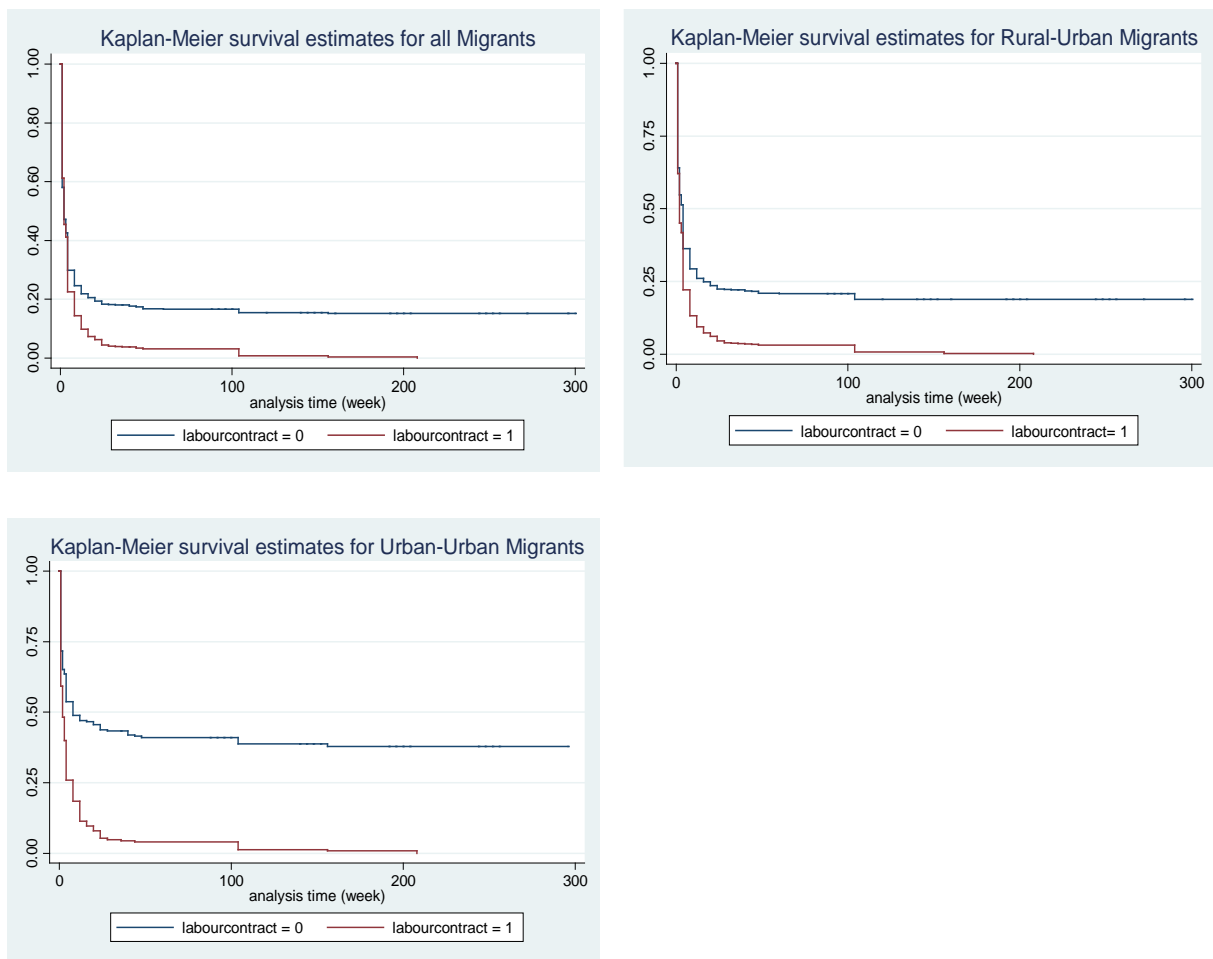
Time (week)	Total at Risk	Failed	Censored	Estimated Hazard Rate	Survivor Function	S.E	95% C.I	
1	1868	687	0	0.368	0.632	0.011	0.610	0.654
2	1181	240	0	0.203	0.504	0.012	0.481	0.526
3	941	63	0	0.067	0.470	0.012	0.447	0.493
4	878	321	1	0.366	0.298	0.011	0.278	0.319
8	556	146	0	0.263	0.220	0.010	0.201	0.239
12	410	65	0	0.159	0.185	0.009	0.168	0.203
16	345	30	0	0.087	0.169	0.009	0.152	0.186
20	315	23	0	0.073	0.157	0.008	0.141	0.174
24	292	27	0	0.092	0.142	0.008	0.127	0.158
28	265	6	0	0.023	0.139	0.008	0.124	0.155
32	259	2	0	0.008	0.138	0.008	0.123	0.154
36	257	1	11	0.004	0.137	0.008	0.122	0.153
40	245	5	33	0.020	0.135	0.008	0.120	0.150
44	207	3	4	0.014	0.133	0.008	0.118	0.148
48	200	7	6	0.035	0.128	0.008	0.113	0.144
60	187	1	0	0.005	0.127	0.008	0.113	0.143
88	186	0	9	0.000	0.127	0.008	0.113	0.143
92	177	0	24	0.000	0.127	0.008	0.113	0.143
96	153	0	9	0.000	0.127	0.008	0.113	0.143
100	144	0	3	0.000	0.127	0.008	0.113	0.143
104	141	31	0	0.220	0.099	0.008	0.085	0.115
120	110	0	1	0.000	0.099	0.008	0.085	0.115
140	109	0	8	0.000	0.099	0.008	0.085	0.115
144	101	0	13	0.000	0.099	0.008	0.085	0.115
148	88	0	7	0.000	0.099	0.008	0.085	0.115
152	81	0	10	0.000	0.099	0.008	0.085	0.115
156	71	4	0	0.056	0.094	0.008	0.080	0.109
160	67	0	2	0.000	0.094	0.008	0.080	0.109
192	65	0	9	0.000	0.094	0.008	0.080	0.109
196	56	0	12	0.000	0.094	0.008	0.080	0.109
200	44	0	4	0.000	0.094	0.008	0.080	0.109
204	40	0	5	0.000	0.094	0.008	0.080	0.109
208	35	2	0	0.057	0.088	0.008	0.073	0.105
244	33	0	3	0.000	0.088	0.008	0.073	0.105
248	30	0	16	0.000	0.088	0.008	0.073	0.105
252	14	0	5	0.000	0.088	0.008	0.073	0.105
256	9	0	3	0.000	0.088	0.008	0.073	0.105
272	6	0	1	0.000	0.088	0.008	0.073	0.105
296	5	0	4	0.000	0.088	0.008	0.073	0.105
300	1	0	1	0.000	0.088	0.008	0.073	0.105

Table 5: Kaplan-Meier Survival Estimates for Urban to Urban Migrants

Time (week)	Total at Risk	Failed	Censored	Estimated Hazard Rate	Survivor Function	S.E	95% C.I	
1	500	170	0	0.340	0.660	0.021	0.617	0.700
2	330	43	0	0.130	0.574	0.022	0.529	0.616
3	287	23	0	0.080	0.528	0.022	0.483	0.571
4	264	59	0	0.223	0.410	0.022	0.367	0.453
8	205	30	0	0.146	0.350	0.021	0.308	0.392
12	175	21	0	0.120	0.308	0.021	0.268	0.349
16	154	5	0	0.032	0.298	0.021	0.259	0.339
20	149	7	0	0.047	0.284	0.020	0.245	0.324
24	142	11	0	0.077	0.262	0.020	0.224	0.301
28	131	2	0	0.015	0.258	0.020	0.221	0.297
36	129	1	4	0.008	0.256	0.020	0.219	0.295
40	124	4	7	0.032	0.248	0.019	0.211	0.286
44	113	2	2	0.018	0.243	0.019	0.207	0.282
48	109	1	4	0.009	0.241	0.019	0.205	0.280
88	104	0	8	0.000	0.241	0.019	0.205	0.280
92	96	0	11	0.000	0.241	0.019	0.205	0.280
96	85	0	2	0.000	0.241	0.019	0.205	0.280
100	83	0	1	0.000	0.241	0.019	0.205	0.280
104	82	10	0	0.122	0.212	0.019	0.176	0.250
140	72	0	7	0.000	0.212	0.019	0.176	0.250
144	65	0	11	0.000	0.212	0.019	0.176	0.250
148	54	0	5	0.000	0.212	0.019	0.176	0.250
152	49	0	4	0.000	0.212	0.019	0.176	0.250
156	45	2	0	0.044	0.202	0.019	0.166	0.241
192	43	0	8	0.000	0.202	0.019	0.166	0.241
196	35	0	6	0.000	0.202	0.019	0.166	0.241
200	29	0	2	0.000	0.202	0.019	0.166	0.241
204	27	0	2	0.000	0.202	0.019	0.166	0.241
208	25	2	0	0.080	0.186	0.021	0.147	0.229
244	23	0	6	0.000	0.186	0.021	0.147	0.229
248	17	0	9	0.000	0.186	0.021	0.147	0.229
252	8	0	4	0.000	0.186	0.021	0.147	0.229
256	4	0	2	0.000	0.186	0.021	0.147	0.229
296	2	0	2	0.000	0.186	0.021	0.147	0.229

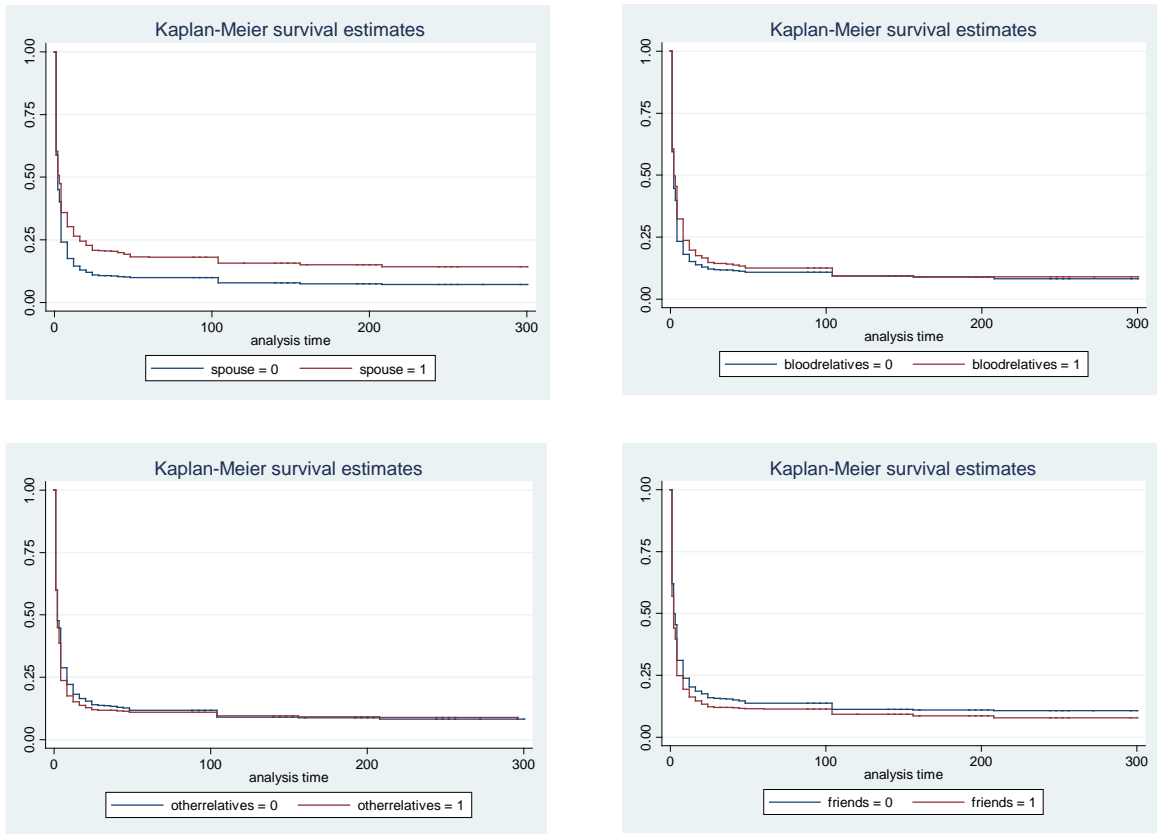
Source: Calculated based on the 2004 Vietnam Internal Migration Survey

Figure 1: Kaplan-Meier Survival Estimates for All Migrants by Labour Contract



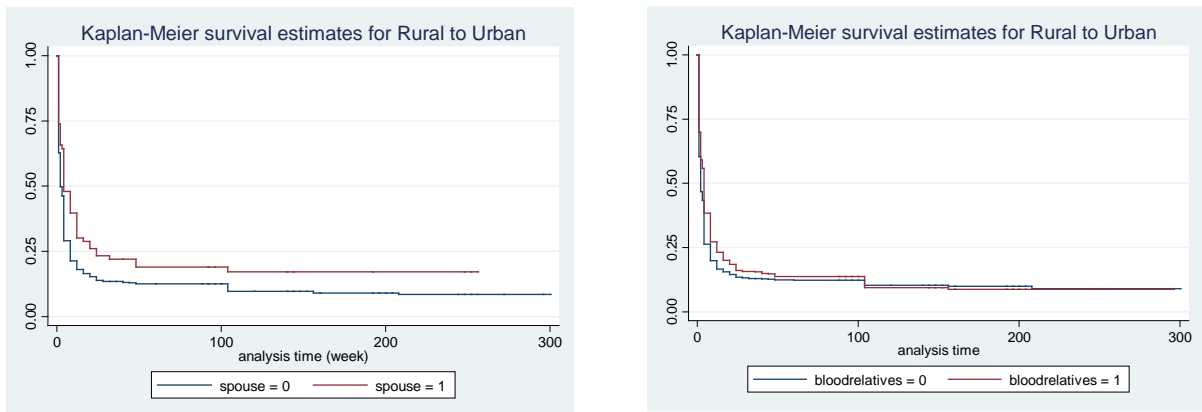
Source: Calculated based on the 2004 Vietnam Internal Migration Survey

Figure 2: Kaplan-Meier Survival Estimates for all Migrants by Networks



Source: Calculated based on the 2004 Vietnam Internal Migration Survey

Figure 3: Kaplan-Meier Survival Estimates for Rural to Urban Migrants by Networks



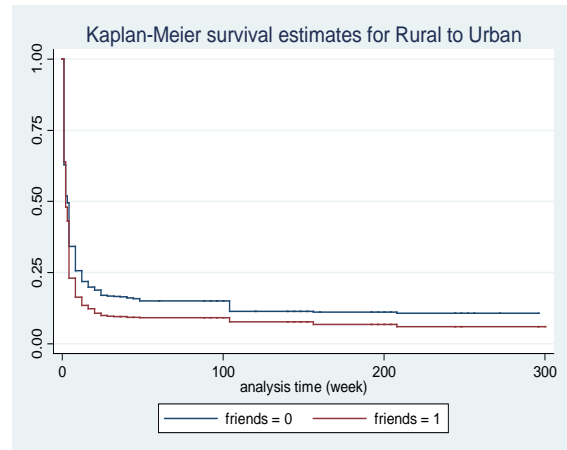
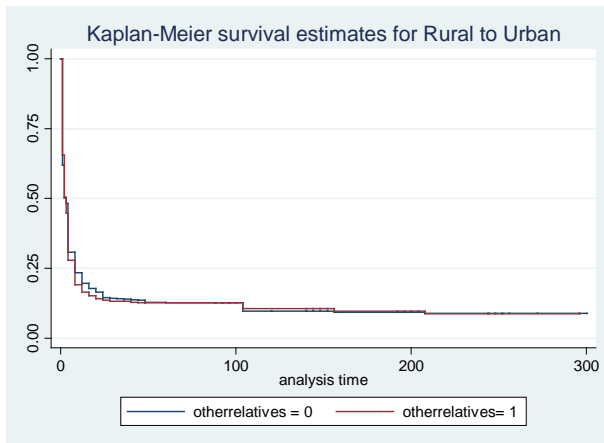
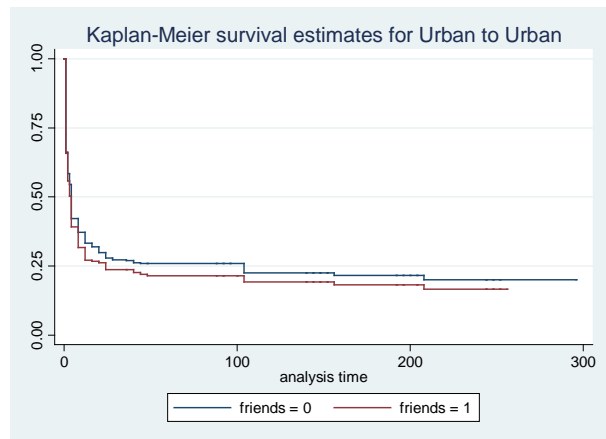
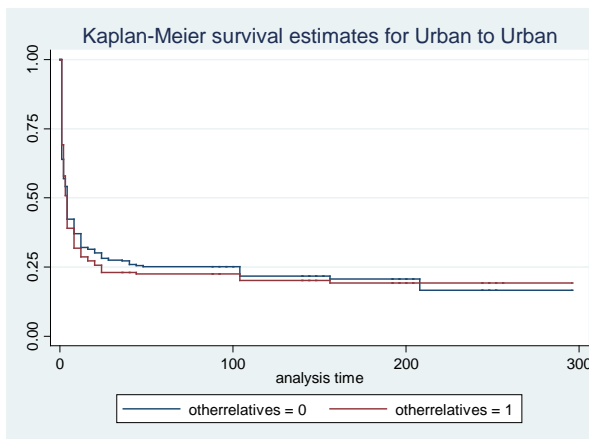
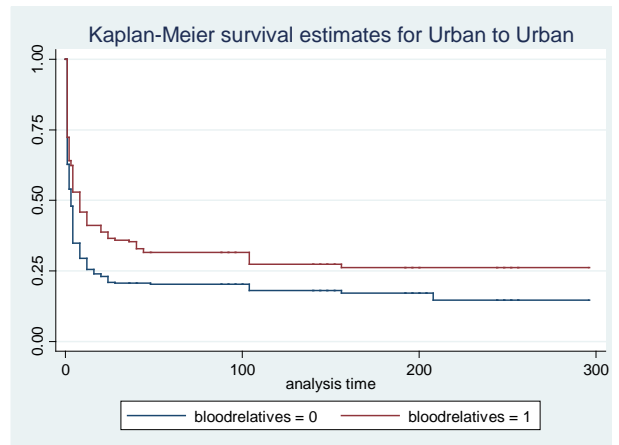
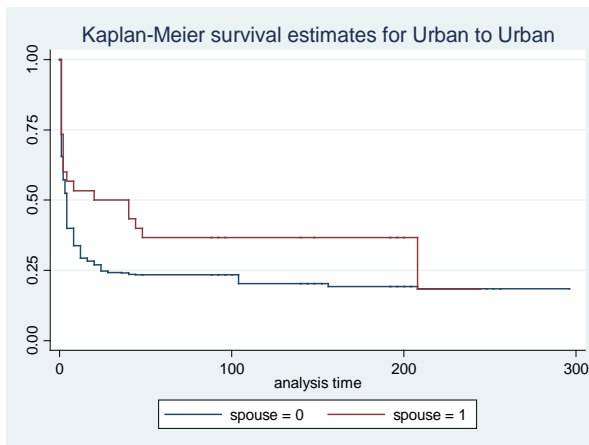


Figure 4: Kaplan-Meier Survival Estimates for Urban to Urban Migrants by Networks



4. A Modelling Framework

4.1 The Setup

The setup here is based on Cameron and Trivedi (2005), Lunde et al (1999), Narendranathan and Stewart (1993) and Lancaster (1990). The setup of the hazard function in the context of continuous and discrete time is different. However, there is linkage between the two forms as presented in the followings:

The Cox's (1972) continuous-time proportional hazard form for the unemployment spells as:

$\lambda_i(t) = \lambda_0(t) \exp(\beta' x_i(t))$, where x_i is a set of time dependent (or independent) explanatory variables of individual i , β is the vector of parameters to be estimated, and $\lambda_0(t)$ is the common baseline hazard for all among migrants at any point of time, $\exp(\beta' x_i(t))$ scales the baseline hazard function depending on the individual characteristics.

The probability that a migrant obtains a job is presented as the discrete-time hazard function in each interval over the time line t_a , $a = 1, \dots, A$ is defined by:

$$\begin{aligned}
 \lambda^d(t_a | x) &= \Pr[t_{a-1} \leq T \leq t_a | T \geq t_{a-1}, x(t_{a-1})], \quad a = 1, \dots, A \\
 &= \frac{S(t_{a-1} | x) - S(t_a | x)}{S(t_{a-1} | x)} \\
 &= 1 - \frac{\exp\left(\int_0^{t_a} \lambda(s) ds\right)}{\exp\left(\int_0^{t_{a-1}} \lambda(s) ds\right)} \\
 &= 1 - \exp\left(-\int_{t_{a-1}}^{t_a} \lambda(s) ds\right) \\
 &= 1 - \exp\left(-\int_{t_{a-1}}^{t_a} \lambda_0(s) \exp(\beta' x_i(s)) ds\right) \\
 &= 1 - \exp(-\lambda_{0a} \exp(\beta' (x(t_{a-1}))) \\
 &= 1 - \exp(-\exp(\ln \lambda_{0a} + \beta' x(t_{a-1}))) \quad (1)
 \end{aligned}$$

$$\text{where } \lambda_{0a} = \int_{t_{a-1}}^{t_a} \lambda_0(s) ds$$

The associated discrete-time survivor function at time t_a is defined as the survivor function in each period that the subject survives:

$$S^d(t_a | x) = \Pr[T \geq t_{a-1} | x] = \prod_{s=1}^{a-1} (1 - \lambda^d(t_s | x(t_s)))$$

$$= \prod_{s=1}^{a-1} \exp(-\exp(\ln \lambda_{0s} + \beta' x(t_{s-1}))) \quad (2)$$

If a migrant found a job at time interval (t_{a-1}, t_a) , $a = 1, \dots, A$, its contribution to the likelihood function is the density at that interval (i.e. the relative chance for this random variable to occur], which is product of the hazard function at the (t_{a-1}, t_a) and the survivor function in each period that the subject survives up to (t_{a-1}, t_a) . Therefore, the likelihood function for a sample of N individuals can be written as follows:

$$L(\beta, \lambda_{01}, \dots, \lambda_{0A}) = \prod_{i=1}^N \left[\prod_{s=1}^{a_i-1} \exp(-\exp(\ln \lambda_{0s} + \beta' x_i(t_{s-1}))) \right] \times (1 - \exp(-\exp(\ln \lambda_{0a_i} + \beta' x_i(t_{a-1}))))^{\delta_i} \quad (3)$$

4.2 The Treatment of the Right Censored Observations

The term δ_i appeared in (3) is defined as the censoring indication, which is defined as:

$$\delta_i = \begin{cases} = 1 & \text{if } t_{a-1} = C_i \\ = 0 & \text{if } t_{a-1} \succ C_i \end{cases} \text{ where } t_{a-1} \text{ is the survival time, } C_i \text{ is the censored time.}$$

Considering an interval $[t_{a-1}, t_a]$, if the observation is censored at this interval, it still contributes *the survivor function to the likelihood function as the first term of (3)*; and it *contributes nothing to the hazard function or the second term of (3) takes a value of 1*. This is a superior feature of the duration model to accommodate the censored observations that takes into account the censored observations to contribute to the likelihood function until the censoring time. For example, at the time of survey, individual Z failed, then $\delta_z = 1$, the likelihood function of this individual is easily calculated; while individual Y is censored, then we do not know what happens to Y after the survey time, then $\delta_y = 0$ or Y only contributes the survivor function to the likelihood function.

In the likelihood function (3), β and λ_{0s} , $s = 1, \dots, a - 1$ are to be estimated.

A number of authors have supported the view that the constraint of a specific shape such as Weibull, log-normal or exponential form can be misleading because there is no firm supporting theoretical ground, therefore, more flexible shape to estimate the model semi-parametrically is preferred as discussed in (Meyer 1990, Narendranathan and Stewart 1993, Arulampalam and Stewart 1995, Kupets 2006). We will briefly discuss the context in which these authors apply the duration model. For example, Arulampalam and Stewart (1995) study the unemployment duration in Britain; Grogan and van den Berg (2001) study the unemployment duration in Russia using the longitudinal data in the 1990s; Kupets (2006)

studies the unemployment in Ukraine in 1998-2002. They argue that the exit rate out of unemployment change over time and the knowledge about the distribution of change is not known by researchers, therefore, no specific shape should be imposed on the baseline hazard model, and rather a flexible specification should be adopted. In their studies, they use both invariant variables such as gender, education attainment, past experience, as well as variant variables such as the unemployment income received during unemployment spells, unemployment rate at the local labour market.

4.3 Definition of Variables

We follow previous empirical literature of job search duration to identify two groups of factors that have significant effect on the risk of leaving unemployment (for example Meyer, 1990; Kupets, 2006; Grogan and van den Berg, 2001; Arulampalam and Steward, 1995). The first group includes the variables of human capital such as education, labour market experience; and personal characteristics that constraints the intensity of search such as if the migrant is household head, moving with someone; and labour market condition is controlled by destination dummies and year of arrival. However, the role of social networks have not identified in the literature of job search duration in general and among migrants in particular.

The dependent variable is the hazard rate, which is presented in the part 3.3. The explanatory variables are presented in the Table 2. The model to be fitted is the model (1) by the maximum likelihood method.

5. Estimation Results

Table 6 presents the estimation of job search duration to exit from initial unemployment to have jobs for all migrants, rural to urban migrants and urban to urban migrants respectively. Table 7, 8, 9 further present the estimation of job search duration to exit from initial unemployment to informal and informal jobs for all migrants, rural to urban and urban to urban respectively. We control for an extensive set of individual characteristics and social networks. However, the local labour market condition is not included due to lack of this data. Instead, we include year, and destination and origin dummies to control for the difference across destinations in regards to the labour market. We carry out extensive exercises for different groups of people including male, female.

Age arrival is positive and significant and age square is negative and significant in determining the length of initial unemployment, this indicates that more experienced migrants find themselves more competitive at the decreasing rate in the labour market. This finding is relevant in the job search literature where age has been found to be a crucial factor of probability of obtaining a job such as Grogan and Van den Berg (2001).

Male migrants have shorter job search duration than female. This finding reveals that male migrants are at more advantageous status than their counterparts in the labour market. In addition, when breaking down to the types of jobs, the estimation shows that males are

quicker to get informal jobs than female counterparts. This shows the fact that males are less selective in accepting the first jobs.

In Vietnam, Kinh ethnicity is dominant with 95% of population, we find that being Kinh ethnicity shortens the job search duration; although by Law everyone should receive equal treatment, however, in practice being a minor ethnicity incurs disadvantages in the labour market. This can be due to the perception of the employers that minor ethnicity possesses less human capital and skills than the Kinh ethnicity.

In regards to work experience, we find that that migrant who was working before coming to the destination have shorter job search duration, this finding is robust for all different groups and types of jobs. This emphasizes the role of experience in the migrants' labour market and how the employers value the experience. This finding is in line with finding by Narendranathan and Steward (1993) for the job search duration in the U.K.

In regards to the role of education in the job search outcome of migrants, this paper finds some interesting results in regards to the role of education in the jobs search duration and types of jobs. It is shown that those migrants who have higher qualification like upper secondary or university are quicker to get formal jobs, while those migrants who have primary and lower secondary qualifications are quicker to have informal jobs. This result is consistent with most of current literature of job search duration following an unemployment spell where qualification plays an important role such as (Kupets, 2006) for Ukraine and Grogan and Van den Berg (2001) for Russia.

Our central interest in this paper is the role of social networks on the job search duration of migrants. We find similar results for all migrants and rural to urban migrants with respect to the effect of different kind of network on the job search duration. Having a family member at the destination increases the search duration for all migrants. On the one hand, having a family member may help migrants to have better information about the job market as well as connection to find a job, on the other hand, having a family member means that migrants can receive support such as housing and financial that help them to stay longer unemployed to search for more suitable job. However, having a relative/s at the place of destination does have little effect on the job search duration; this can be due to the weak link between relatives and migrants or may be due to the opposition effects of social network.

In regards to having friends or countrymen at the destination, we find that this type of social network has positive and significant effect for all migrants. This indicates that friends/countrymen are source of information of the work opportunity in at the destination for the potential migrants. The established migrants usually visit their hometown and share the information and offer help to their fellowmen. Furthermore, having friends and countrymen shorten the job search for formal jobs for rural to urban migrants, while this channel has no effect among urban to urban migrants.

The Table 10 presents the estimation of a multinomial probit model with three choices: (i) having formal job; (ii) having informal job; and (iii) no job at the time of survey. The purpose of this exercise is to further re-check the robustness of the duration model and to pay attention to the job outcome rather than the job search duration. Therefore, those who do not have a job at the time of interview are treated as having no job. In regards to the role of social networks, it is shown that those migrants who have spouse and family members at the destination less likely to have both formal and informal jobs, while those who have friends are more likely to have both formal and informal jobs. These findings are consistent with the jobs search duration models. In addition, those who have spouse and family members are less likely to have formal jobs, or more likely to have informal jobs. This finding is also consistent with the job search duration models, where it takes a longer time to find formal jobs for those who have spouse and family members at the destination. This fact can be hypothesized as because the hiring of formal jobs follow official screening, in which the role of social networks plays less important role compared to the informal jobs.

Types of Destination and Job Search Outcome

There are many factors that may attract potential migrants to move to some specific types of destination such as attractive labour market, the quality of infrastructure and environment. Ideally if the city-specific variables such as average education to proxy for city's human capital, unemployment rate to proxy for city's current labour market condition and so on are available, further analysis can be carried out to examine the effect of city's specific conditions on the job search success and the earnings among migrants. Unfortunately, the data for these variables are only available at the province/prefecture level in the recent years; there is no data of this kind at the city level. Therefore, it is reasonable to use the province specific variables for the city level because the labour market at the city level is more likely fragmented and localized. This paper will use the classification of the types of the destination (large city, small city, town and countryside) to proxy for the city's general characteristics in examining the effect on the job search outcome and earnings. The table 11 reports the estimation of the effect of the types of the destination on the job search success from initial unemployment to having a job. It shows that the types of destination have significant and negative effects on the job search outcome: the risk to have a job is lower in the large city compared to small city, while the risk is lowest in town. This means that the competition for jobs in the large city is higher than in small city; and the job opportunities are limited in town compared to large city and small city. The table 12 presents the competing risks for informal and formal jobs. The remarkable finding is that migrants at the large city and small city are more likely to find formal jobs and less likely to find informal jobs. This is because the labour market in the urban area is more structured and the labour market regulations are more likely to be enforced. Therefore, the migrants have better protections by obtaining formal jobs.

Table 6: Single Risk Duration Analysis of Exits from Initial Unemployment to have a job

Variable	All Migrants			Rural to Urban			Urban to Urban		
	All	Males	Females	All R-U	Males	Females	All U-U	Males	Females
Age at arrival	0.05***	0.078***	0.039*	0.04	0.085*	0.01	0.118**	0.142*	0.104
	[0.014]	[0.022]	[0.019]	[0.022]	[0.036]	[0.028]	[0.045]	[0.068]	[0.063]
Age2	-0.001***	-0.001**	-0.001*	-0.001*	-0.001*	0	-0.002**	-0.002*	-0.002**
	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]	[0.000]	[0.001]	[0.001]	[0.001]
Male	0.138***	(omitted)	(omitted)	0.094	(omitted)	(omitted)	0.325	(omitted)	(omitted)
	[0.036]			[0.053]			[0.111]		
Kinh Ethnicity	0.083	0.196*	-0.028	0.533*	0.568	0.514	0.98	36.367	1.02
	[0.059]	[0.086]	[0.083]	[0.201]	[0.294]	[0.282]	[0.511]	[0.000]	[0.523]
Working before Arrival	0.882***	0.992***	0.813***	0.855***	1.015***	0.762***	1.124***	1.015**	1.235**
	[0.055]	[0.098]	[0.068]	[0.071]	[0.129]	[0.087]	[0.152]	[0.257]	[0.206]
Been at the destination before	0.035	-0.022	0.092	-0.036	-0.108	0.025	0.082	-0.055	0.186
	[0.052]	[0.074]	[0.076]	[0.077]	[0.114]	[0.106]	[0.141]	[0.210]	[0.204]
Move with Family Members	-0.148**	-0.089	-0.189**	-0.204*	-0.133	-0.257**	0.142	0.378	-0.009
	[0.045]	[0.073]	[0.059]	[0.066]	[0.109]	[0.084]	[0.146]	[0.222]	[0.197]
Household Head	0.078	-0.011	0.152	0.154	0.057	0.269*	0.278	0.158	0.407
	[0.066]	[0.093]	[0.094]	[0.089]	[0.125]	[0.129]	[0.194]	[0.284]	[0.274]
Having Spouse at destination	-0.317***	-0.23	-0.32***	-0.401**	0.228	-0.413**	-0.553*	-0.185	-0.619*
	[0.085]	[0.243]	[0.092]	[0.137]	[0.472]	[0.147]	[0.251]	[0.577]	[0.297]
Having blood relatives at destination	-0.019	0.037	-0.066	-0.095	-0.052	-0.132	-0.183	-0.206	-0.32
	[0.039]	[0.059]	[0.052]	[0.057]	[0.091]	[0.075]	[0.120]	[0.180]	[0.174]
Having other relatives at destination	0.059	0.126	0.023	0.006**	0.072	-0.042	0.078	0.033	0.105
	[0.037]	[0.056]	[0.049]	[0.054]	[0.086]	[0.071]	[0.109]	[0.164]	[0.151]
Having friends at destination	0.157***	0.176***	0.139***	0.131*	0.154	0.107	0.059	0.092	0.081
	[0.036]	[0.055]	[0.049]	[0.053]	[0.085]	[0.068]	[0.113]	[0.167]	[0.158]

Use Job Agents	-0.07	-0.21	0.095	-0.11	-0.261	0.043	0.129	-0.239	1.238
	[0.095]	[0.137]	[0.135]	[0.116]	[0.178]	[0.158]	[0.225]	[0.301]	[0.361]
Primary	0.034	0.033	0.066	-0.044	-0.08	-0.059	-0.561	-0.737	-0.468
	[0.078]	[0.110]	[0.111]	[0.150]	[0.234]	[0.203]	[0.379]	[0.467]	[0.763]
Lower Secondary	0.054	0.023	0.086	0.013	0.003	0.023	-0.313	-0.037	-0.292
	[0.049]	[0.079]	[0.062]	[0.072]	[0.126]	[0.089]	[0.187]	[0.318]	[0.251]
Upper Secondary	-0.19***	-0.22***	-0.15***	-0.228***	-0.34***	-0.136**	-0.357**	-0.373	-0.365*
	[0.045]	[0.069]	[0.060]	[0.060]	[0.096]	[0.078]	[0.135]	[0.221]	[0.178]
University	0.029	0.084	0.009	0.044	-0.036	0.092	0.051	0.08	0.089
	[0.089]	[0.131]	[0.124]	[0.131]	[0.187]	[0.190]	[0.179]	[0.270]	[0.257]
Observations	3817	1604	2213	1868	733	1135	500	218	282
Failures	3416	1474	1942	1664	658	1006	393	184	209
Chi2(28)	719.61	329.84	405.61	321.29	177.49	169.01	194.93	93.15	121.56
Log-Likelihood	-25856	-9851	-13658	-11407	-3867	-6410	-2156	-850	-1023

Cox proportional hazards model is used. The baseline hazards are flexible at different time intervals. Estimated coefficients are presented. Standard errors are in parentheses. * Significance at 10%, ** Significance at 5%, *** Significance at 1%. Estimated using Vietnam Internal Migration Survey 2004 conducted by GSO and UNFPA.

Table 7: Competing Risks Duration Analysis of Exits from Initial Unemployment to Informal and Formal Jobs: All Migrants

Variable	All Migrants		Males		Females	
	Informal	Formal	Informal	Formal	Informal	Formal
Age at arrival	0.084*** [0.016]	0.063* [0.030]	0.093*** [0.025]	0.111* [0.052]	0.085*** [0.021]	0.048 [0.040]
Age2	-0.001** [0.000]	-0.002* [0.001]	-0.001** [0.000]	-0.002** [0.001]	-0.001** [0.000]	-0.002* [0.001]
Male	0.371** [0.043]	-0.21** [0.060]	(omitted)	(omitted)	(omitted)	(omitted)
Kinh Ethnicity	-0.063 [0.062]	0.926** [0.179]	0.106 [0.088]	1.35*** [0.350]	-0.261** [0.087]	0.691*** [0.209]
Working before Arrival	0.632*** [0.063]	0.91*** [0.076]	0.711*** [0.117]	1.132*** [0.148]	0.617*** [0.078]	0.774*** [0.090]
Been at the destination before	0.089 [0.060]	-0.076 [0.089]	0.054 [0.083]	-0.235 [0.138]	0.121 [0.088]	0.034 [0.117]
Move with Family Members	0.032 [0.053]	-0.51** [0.085]	-0.026 [0.085]	-0.215 [0.148]	0.071 [0.069]	-0.632** [0.105]
Household Head	-0.312*** [0.067]	0.619*** [0.120]	-0.274** [0.098]	0.481** [0.181]	-0.343** [0.093]	0.757*** [0.163]
Having Spouse at destination	-0.155 [0.090]	-0.735** [0.164]	-0.237 [0.298]	0.268 [0.423]	-0.161 [0.097]	-0.745** [0.180]
Having blood relatives at destination	0.086 [0.044]	-0.222** [0.066]	0.186** [0.066]	-0.365** [0.114]	0 [0.061]	-0.166* [0.081]
Having other relatives at destination	0.123** [0.043]	-0.063 [0.059]	0.198** [0.065]	-0.064 [0.102]	0.078 [0.059]	-0.046 [0.074]
Having friends at destination	0.132** [0.043]	0.141* [0.059]	0.183** [0.063]	0.096 [0.101]	0.085 [0.060]	0.155* [0.073]
Use Job Agents	-0.584 [0.163]	0.257* [0.115]	-0.486** [0.196]	0.107 [0.181]	-0.835** [0.307]	0.484 [0.150]
Primary	0.225** [0.081]	-1.017** [0.284]	0.232** [0.114]	-1.457** [0.513]	0.216 [0.116]	-0.74* [0.341]
Lower Secondary	0.305*** [0.055]	-0.474** [0.100]	0.202** [0.086]	-0.72*** [0.215]	0.354** [0.072]	-0.363** [0.114]
Upper Secondary	-0.307** [0.055]	0.028 [0.068]	-0.485** [0.086]	0.134 [0.123]	-0.222** [0.074]	-0.012 [0.083]
University	-1.095*** [0.148]	0.848** [0.109]	-1.234** [0.223]	0.997*** [0.181]	-1.085** [0.205]	0.779*** [0.143]
Observations	3817	3817	1604	1604	2213	2213
Failures	2496	1321	1146	458	1350	863
Chi2(28)	1090.65	810.32	502.71	324.79	563.13	547.24
Log-Likelihood	-17752	-9607	-7248	-2891	-8784	-5828

Cox proportional hazards model is used. The baseline hazards are flexible at different time intervals. Estimated coefficients are presented. Standard errors are in parentheses. * Significance at 10%, ** Significance at 5%, *** Significance at 1%.

Exits to formal jobs are considered censored when estimating exits to Informal Jobs and vice versa. Estimated using Vietnam Internal Migration Survey 2004 conducted by GSO and UNFPA.

Table 8: Competing Risks Duration Analysis of Exits from Initial Unemployment to Informal and Formal Jobs: Rural to Urban Migrants

Variable	All R-U		Males		Females	
	Informal	Formal	Informal	Formal	Informal	Formal
Age at arrival	0.105*** [0.026]	0.067 [0.043]	0.16*** [0.043]	0.057 [0.070]	0.079* [0.034]	0.072 [0.056]
Age2	-0.001** [0.000]	-0.002** [0.001]	-0.002** [0.001]	-0.002 [0.001]	-0.001 [0.001]	-0.002* [0.001]
Male	0.45*** [0.068]	-0.238** [0.077]	(omitted)	(omitted)	(omitted)	(omitted)
Kinh Ethnicity	0.342 [0.193]	0.336 [0.294]	0.379 [0.275]	0.471 [0.522]	0.269 [0.279]	0.286 [0.361]
Working before Arrival	0.583*** [0.087]	0.875*** [0.094]	0.629*** [0.159]	1.25*** [0.189]	0.591** [0.110]	0.697*** [0.110]
Been at the destination before	0.061 [0.096]	-0.099 [0.113]	0.014 [0.135]	-0.336 [0.184]	0.098 [0.142]	0.034 [0.146]
Move with Family Members	-0.046 [0.080]	-0.435** [0.107]	-0.07 [0.133]	-0.103** [0.191]	0.011 [0.103]	-0.587** [0.133]
Household Head	-0.434** [0.091]	1.268** [0.197]	-0.417** [0.133]	1.034** [0.275]	-0.502* [0.129]	1.534** [0.287]
Having Spouse at destination	-0.267 [0.155]	-0.682** [0.229]	0.02 [0.620]	0.758 [0.730]	-0.296 [0.169]	-0.676** [0.244]
Having blood relatives at destination	-0.083 [0.073]	-0.16 [0.082]	0.098 [0.109]	-0.315* [0.147]	-0.24* [0.103]	-0.106 [0.100]
Having other relatives at destination	0.061 [0.069]	-0.041 [0.075]	0.106 [0.106]	0.007 [0.132]	0.028 [0.095]	-0.075 [0.095]
Having friends at destination	0.057 [0.069]	0.175* [0.074]	0.138 [0.104]	0.171 [0.132]	-0.039 [0.096]	0.172 [0.091]
Use Job Agents	-0.445 [0.206]	0.141 [0.140]	-0.453 [0.255]	-0.008 [0.242]	-0.667 [0.386]	0.373 [0.175]
Primary	0.323* [0.161]	-1.153** [0.414]	0.352 [0.258]	-1.137 [0.602]	0.356 [0.214]	-1.309* [0.584]
Lower Secondary	0.406*** [0.087]	-0.53** [0.125]	0.395* [0.144]	-0.838* [0.285]	0.373* [0.112]	-0.435** [0.141]
Upper Secondary	-0.346** [0.080]	-0.008 [0.082]	-0.566** [0.127]	-0.063 [0.147]	-0.264** [0.107]	0.021 [0.099]
University	-1.028** [0.249]	0.708** [0.154]	-1.223** [0.333]	0.771** [0.243]	-0.899** [0.392]	0.646** [0.208]
Observations	1868	1868	733	733	1135	1135
Failures	1020	848	455	278	565	570
Chi2(28)	418.17	405.95	204.96	151.96	214.93	284.39
Log-Likelihood	-6426	-5661	-2470	-1577	-3249	-3526

Cox proportional hazards model is used. The baseline hazards are flexible at different time intervals. Estimated coefficients are presented. Standard errors are in parentheses. * Significance at 10%, ** Significance at 5%, *** Significance at 1%.

Exits to formal jobs are considered censored when estimating exits to Informal Jobs and vice versa. Estimated using Vietnam Internal Migration Survey 2004 conducted by GSO and UNFPA.

Table 9: Competing Risks Duration Analysis of Exits from Initial Unemployment to Informal and Formal Jobs: Urban to Urban Migrants

Variable	All Migrants		Males		Females	
	Informal	Formal	Informal	Formal	Informal	Formal
Age at arrival	0.113*	0.105	0.107	0.241*	0.111	0.012
	[0.052]	[0.063]	[0.087]	[0.106]	[0.070]	[0.085]
Age2	-0.001*	-0.002*	-0.001	-0.003*	-0.001	-0.001
	[0.000]	[0.000]	[0.001]	[0.001]	[0.001]	[0.001]
Male	0.572***	0.072	(omitted)	(omitted)	(omitted)	(omitted)
	[0.141]	[0.147]				
Kinh Ethnicity	0.526	0.73	1.681	35.444	0.356	0.882
	[0.401]	[0.594]	[0.894]	[0]	[0.486]	[0.617]
Working before Arrival	0.626***	1.289***	0.597	1.243***	0.572*	1.444***
	[0.171]	[0.195]	[0.355]	[0.352]	[0.213]	[0.265]
Been at the destination before	0.017	0.055	-0.201	-0.106	0.148	0.145
	[0.175]	[0.187]	[0.281]	[0.295]	[0.241]	[0.260]
Move with Family Members	0.214	-0.06	0.576	0.107	-0.002	-0.087
	[0.193]	[0.201]	[0.316]	[0.316]	[0.263]	[0.267]
Household Head	0.094	0.053	0.428	-0.08	-0.107	0.206
	[0.195]	[0.238]	[0.341]	[0.362]	[0.248]	[0.336]
Having Spouse at destination	-0.115	-1.206**	1.101	-1.044	-0.415	-1.0359
	[0.252]	[0.410]	[0.687]	[1.062]	[0.298]	[0.468]
Having blood relatives at destination	0.043	-0.379*	-0.015	-0.386	0.052	-0.555
	[0.140]	[0.163]	[0.238]	[0.255]	[0.196]	[0.233]
Having other relatives at destination	-0.066	0.097	0.155	-0.038	-0.255	0.212
	[0.142]	[0.140]	[0.214]	[0.226]	[0.209]	[0.190]
Having friends at destination	0.153	-0.043	0.2604	-0.203	-0.06	0.17
	[0.143]	[0.147]	[0.219]	[0.231]	[0.203]	[0.203]
Use Job Agents	-0.338	0.244	-0.161	-0.188	0.068	1.605***
	[0.365]	[0.273]	[0.443]	[0.378]	[0.737]	[0.424]
Primary	-0.129	-1.711	-0.146	-45.797	-0.549	-0.223
	[0.368]	[1.018]	[0.473]	[0]	[0.666]	[1.056]
Lower Secondary	-0.045	-0.531	0.038	-0.311	0.012	-0.305
	[0.220]	[0.285]	[0.383]	[0.547]	[0.292]	[0.359]
Upper Secondary	-0.393**	-0.144	-0.795**	0.089	-0.193	-0.231
	[0.177]	[0.185]	[0.297]	[0.353]	[0.229]	[0.233]
University	-1.201**	0.759**	-2.226**	1.049**	-0.551	0.81*
	[0.304]	[0.224]	[0.551]	[0.387]	[0.372]	[0.316]
Observations	500	500	218	218	282	282
Failures	272	228	121	97	151	131
Chi2(28)	142.93	152.98	96.7	75.42	66.9	111.58
Log-Likelihood	-1294	-1226	-473	-432	-627	-623

Cox proportional hazards model is used. The baseline hazards are flexible at different time intervals. Estimated coefficients are presented. Standard errors are in parentheses. * Significance at 10%, ** Significance at 5%, *** Significance at 1%.

Exits to formal jobs are considered censored when estimating exits to Informal Jobs and vice versa. Estimated using Vietnam Internal Migration Survey 2004 conducted by GSO and UNFPA.

Table 10: Multinomial Probit Model Addressing the IIA Problem for the Probability of the Types of Jobs (Formal vs Informal vs No Job) at the time of Survey

Variable	Formal vs No Job	Informal vs No Job	Formal vs Informal	No Job vs Informal
Age at arrival	-.015**	.013***	-.016**	.001***
Male	-.133***	.158***	-.147***	-.015***
Working before Arrival	.138***	.203***	.122***	-.336***
Been at the destination before	-.057**	.055***	-.138***	-.001
Move with Family Members	-.133***	.112***	-.470***	.015**
Household Head	.115**	-.101***	.127***	-.012*
Having Spouse at destination	-.154***	.086***	-.159***	.056***
Having blood relatives at destination	-.079***	.081***	-.081***	-.002
Having other relatives at destination	-.050***	.054***	-.052**	-.005
Having friends at destination	-.0008	.021	-.004	-.016***
Use Job Agents	.236**	-.213***	.261***	-.014
Primary	-.256***	.245***	-.262***	.011
Lower Secondary	-.150***	.161***	-.155***	-.010
Upper Secondary	.148***	-.174***	.156***	.021***
University	.559***	-.536***	.574***	-.019***
N		4772		
Chi2		1784		
Log-Likelihood		-3093		

Table 11: Single Risk Duration Analysis of Exits from Initial Unemployment to having Job:
All Migrants

Variable	<u>All Migrants</u>		
	All	Males	Females
Large City	-.241*** [.045]	-.275*** [.071]	-.213*** [.059]
Small City	-.143*** [.048]	-.151*** [.075]	-.145*** [.064]
Town	-.402*** [.123]	-.224 [.191]	-.453*** [.163]
Observations	3817	1604	2213
Failures	3416	1474	1942
Chi2(28)	719.61	329.84	405.61
Log-Likelihood	-25856	-9851	-13658

Table 12: Competing Risks Duration Analysis of Exits from Initial Unemployment to
Informal and Formal Jobs: Rural to Urban Migrants

Variable	<u>All Migrants</u>		<u>Males</u>		<u>Females</u>	
	Informal	Formal	Informal	Formal	Informal	Formal
Large City	-.512*** [.052]	.324*** [.084]	-.534*** [.082]	.430*** [.151]	-.497*** [.069]	.281*** [.102]
Small City	-.506*** [.058]	.532*** [.086]	-.374*** [.088]	.616*** [.155]	-.597*** [.080]	.481*** [.105]
Town	-.514 [.125]	.074 [.214]	-.394 [.218]	.556* [.323]	-.572*** [.156]	-.161 [.293]
Observations	3817	3817	1604	1604	2213	2213
Failures	2496	1321	1146	458	1350	863
Chi2(28)	1090.65	810.32	502.71	324.79	563.13	547.24
Log-Likelihood	-17752	-9607	-7248	-2891	-8784	-5828

Cox proportional hazards model is used. The baseline hazards are flexible at different time intervals. Estimated coefficients are presented. Standard errors are in parentheses. * Significance at 10%, ** Significance at 5%, *** Significance at 1%. Other controlled variables are not presented. Exits to formal jobs are considered censored when estimating exits to Informal Jobs and vice versa. Estimated using Vietnam Internal Migration Survey 2004 conducted by GSO and UNFPA.

6.1 Social Networks and Earnings

This section examines the role of social networks in the earning outcome. The argument is based on the informational hypothesis, that those who have networks can increase the efficiency of job search that potentially results better match with the potential employers and increasing earnings. In regards to the literature of the effect of social networks on the wage outcome among migrants, there is large literature on the individual determinants of wage outcome among migrants; however, surprisingly there is limited literature on the role of social networks in determining wage outcome of migrants. For example, Amuedo-Dorantes and Mundra (2007) examine the effect of social networks in the earnings of Mexican migrants in the U.S, they assume that the informational hypothesis plays a role in matching the migrants with the local labour market that in turn those migrants with networks can earn more than those without, as expected, they find that familial ties raise unauthorized and legal migrants' hourly wages by 2.6% and 8% respectively, and friendship ties raise their wages by 5.4% and 3.6% respectively. Ali Molaei et al (2008) analyse the earnings gained resulting from network effects in a sample of rural to urban 400 migrants in Iran, they conclude that by having contacts prior to migration increases the earnings by 7% compared to those who do not have ones.

6.2 A Modelling Framework: Social Networks and Earnings

We follow the literature to model the earnings of migrants as a function of individual characteristics and controlling for a set of fixed effects including location, time, and type of job, for example Amuedo-Dorantes and Mundra (2007), Borjas (1992, 1995). The earning is represented as the average income per month at the time of interview in 2004, therefore, one may argue that for those who migrated long time ago, say in 1999, 2000, or 2001, the effect on social networks on earnings may no longer be profound because migrants may already changed their jobs since starting the first job until the time of interview. However, we believe that the effect of social networks is ongoing so that social networks can continue to share information to the migrants.

Of 4998 migrants, 4573 migrants work and 425 migrants does not work at the time of interview in 2004. We do not have wage observations of those who do not work, thus the wage estimation without accounting for those who do not work introducing bias due to non-randomness in the sample. Following Heckman (1979), we specify the wage model as following:

$$Work_i = \beta_1' X_{1i} + \varepsilon_{1i} \quad (1)$$

$\log(wage)_i = \beta_2' X_{2i} + \varepsilon_{2i}$ (2), where $Work_i$ is dummy variable indicating if a migrant has a job or not, wage is monthly wage at the time of interview in 2004, and D is the outcome from the labour market participation rule:

$$D_1 = \begin{cases} 1 & \text{if } Work_i > 0 \\ 0 & \text{if } Work_i \leq 0 \end{cases}$$

Wage is only observed if $D_1 = 1$ and $(\varepsilon_{1i}, \varepsilon_{2i})$ is bivariate normal $(0,0,1, \sigma, \rho)$.

Then we specify the wage model of migrants as following:

$$E(\text{Work}_i | D_1 = 1) = \log(\text{wage}_i) = \beta_2' X_{2i} + \gamma_1 \lambda_i(\cdot) \quad (3),$$

where $\gamma_1 = \sigma\rho$, $\lambda = f(\beta_1' X_{1i}) / F(\beta_1' X_{1i})$

where $f(\cdot)$ and $F(\cdot)$ are the standard normal density function and distribution function.

We include variables that have been found to have significant effect on the decision to start work at the place of destination, which is a vector of individual and demographic variables X_{1i} . The relevant variables would be the standing of migrants at the time of arrival, we include age, gender, education attainment; we include job status before arrival to account for the economic standing and experience of migrants. To account for the destination and origin's specific characteristics and local labour market condition, we include a set of destination and origin and year dummies.

The earnings equation (3) includes variables at the time of interview that have been found to determine the current earnings such as age, education attainment, social networks, industry and type of work place dummies, the destination and origin dummies to control for the local labour market and the unobserved characteristics of migrants.

6.3 Identification Issues

Those who have networks may possess entrepreneurial ability or some kind of soft skills ω_i that positively raise his earnings. Thus failure to capture ω_i may lead to overestimation of the coefficient of networks. To address this problem, one needs to find an appropriate instrumental variable to capture the unobserved ability of the individual, which is correlated with networks but uncorrelated with the error term. It is noted that finding an appropriate instrumental variable is a common problem in empirical research, so we carry out various robustness exercises by adding more variables step by step to the model to examine the sensitiveness of the social networks on the earning outcome and to rule out the omitted variables.

6.4 Estimation Results

The estimation results are presented in Table 13 and Table 14. We use the Heckman two steps method to correct for the selection bias to estimate the earning equation among migrants in general and rural-urban migrants in particular. The selection model includes some variables that can determine the probability to have a job and to start work at the time of arrival, while the earning equation include the individual characteristics at the time of interview that are deem to affect the current level of wage. The Lambda coefficient is statistically different from zero and negative for the earning model of all migrants but not for the model of rural to urban migrants. This indicates that the joint-estimation of having a job and earnings is appropriate for the model of all migrants; however it is not necessary for the model of only rural to urban migrants. The selection term also indicates that those migrants who have not got a job would have earned less than those who currently have job.

6.4.1 Having a Job Selectivity

The selection equation for all migrants and rural-urban migrants are almost identical with regards to sign and significance, the estimation result shows that the older the age, the less likely a migrant has a job by 1.3 percent, while the male migrants are more likely to have a job by 30% compared to their female counterpart. Being a household head increase the likelihood to have a job, this can be due to the financial responsibility to support the family compared to other groups so that they are more eager to find a job anyway. In regards to the education level at the time of arrival, the results show that those who hold a tertiary qualification are more likely to have a job. This may be that higher level of qualification makes the migrants access job information more efficiently and they may face less competition compared to other groups such as manual labour. In regards to the effect of experience, the estimation shows that those who had a job or was working before moving to the current place are more likely to secure a job. The estimation of the effect of social networks on the probability to have a job shows that having friends/countrymen increases the probability to have a job, while having spouse/family members decreases the probability to have a job. This result is quite consistent to the analysis of job search duration in the above section where we find that those who have friends/countrymen experience shorter job search duration, while those who have spouse and family members experience longer job search duration. Ideally we would like to have some variables to indicate the wealth or financial status of migrants, there is information about the ownership of dwelling of migrants; however we do not know when the ownership was acquired so it is insufficient to include in the selection model.

6.4.2 Social Networks and Earnings

Our interested research question is that how different types of social networks at the destination affect the earnings of migrants. The striking finding is that social networks have effect on earnings only for all migrants, while the social networks have no effect on rural to urban migrants.

We find that social networks effectively raise earnings in all migrants model. In regards to migrants who have spouse and family members, blood relatives and other relatives at the destination, the earning is higher than their counterpart by 9%, 3% and 2% respectively, while friends and country men do not effectively raise the earnings. Our findings here are quite comparable to other studies in regards to the role of social networks on the earnings among migrants. For example, in the study of the effect of social networks on earnings among East-West German migrants, Rainer and Siedler (2009) find that having relatives raise earnings by 16%; in the study of the effect of social networks on earnings among Mexican migrants in the U.S, Amuedo-Dorantes and Mundra (2007) find that familial ties improve authorized and unauthorized migrants by 2.6% and 8% respectively. It also points out that while friends and countrymen can help the migrants to shorten the job search duration, however, this channel of social network does not necessary lead to higher earnings. This can be because friends and countrymen are working in low paid occupations so that they can only refer and share information their newly arrival friends to work in similar occupations. In regards to the effect of some individual characteristics, we find that one more age increases earnings by 0.2%; being male increases earnings by 19%, this is quite significant disparity between male and female migrants that can be due to discrimination or occupation segregation by which women are usually working in the lower paid sectors. Our findings here

are quite similar to other papers: for example, Rainer and Siedler (2009) find that being female reduces earnings by 50% among East-West migrants.

In regards to the effect of education on the earnings, the base category is illiterate: the results show that being a University graduate earns 25% more than the base category; being a high school graduate earns 9% more than the base category; and being a primary graduate earns 7% less than the base category; while other categories of education attainments do not have any effect on the earnings. Our findings are very consistent with other papers on the returns to education in the developing countries. For example, Amuedo-Dorantes and Mundra (2007) find that having an additional year of education raises earnings by 1% among Mexican migrants in the U.S; Bernabe Aguilera (2005) finds that an additional year of schooling raises earning by 6% among Puerto Rican migrants; Rainer and Siedler (2009) find that those migrants who hold upper secondary degree equivalent to more than 10 years of schooling earn 75% more than other categories.

7 Concluding Remarks

This paper has attempted to investigate the role of social networks on the job search duration, earnings and type of jobs among migrants in Vietnam. We find that the types of social networks have different effects on the job search duration and earnings: blood relatives and family members can help the migrants to stay on initial unemployment longer and friends or countrymen can help the migrants to shorten the job search duration; whereas blood relatives and family members help the migrants earn more, while friends or countrymen do not raise income of migrants. The findings in this paper are among the first empirical evidence documenting the role of social networks on the labour market outcome in Vietnam.

It is noted that social networks are endogenous variables, particularly in regards to the variable of having friends and countrymen because people can choose to have and to maintain friendship or not, whereas the variables of having family members or relatives are exogenous, for example, high ability people are more likely to start and to maintain social networks or friendship, so they can find a job quicker and they can earn higher anyway. We have not found a valid instrumental variable to address this potential problem; however, we have carried out extensive robustness checks for different groups and various model specifications. Finally we find consistent results.

The findings in this paper yield some important policy implications towards formulating better labour market for migrants in Vietnam in regards to labour market sharing.

Table 13: Monthly Earnings Estimation by the Heckman Selection Model for All Migrants

Earnings equation	Coef.	Std. Err.	z	P> z
Log(wage)				
Age (current)	0.002934	0.001063	2.76	0.006
Male	0.196248	0.014747	13.31	0
Married	0.09001	0.016146	5.57	0
Primary	-0.07704	0.034851	-2.21	0.027
Lower Secondary	0.007701	0.020116	0.38	0.702
Upper Secondary	0.094912	0.017085	5.56	0
University	0.254779	0.047526	5.36	0
Kinh Ethnicity	0.344151	0.030452	11.3	0
Having spouse/family	0.090799	0.042381	2.14	0.032
Having blood relatives	0.03569	0.015992	2.23	0.026
Having other relatives	0.024214	0.014347	1.69	0.091
Having friends/countrymen	0.009509	0.014056	0.68	0.499
Social activity participation	-0.00143	0.018022	-0.08	0.937
Selection Equation				
Age at arrival	-0.01335	0.003594	-3.71	0
Male	0.318199	0.056892	5.59	0
Household head	0.159754	0.085838	1.86	0.063
Primary	-0.22652	0.139993	-1.62	0.106
Lower Secondary	-0.06936	0.091727	-0.76	0.45
Upper Secondary	-0.17274	0.068041	-2.54	0.011
University	0.43156	0.134175	3.22	0.001
Having a Job before arrival	1.430514	0.066099	21.64	0
Having spouse/family	-0.41981	0.118502	-3.54	0
Having blood relatives	-0.05423	0.061012	-0.89	0.374
Having other relatives	-0.02833	0.058649	-0.48	0.629
Having friends/countrymen	0.220279	0.06024	3.66	0
lambda	-0.09992	0.018982		

Heckman two steps estimation procedures correcting for sample bias. Year of arrival dummies, destination and origin dummies are included in the selection model. Destination dummies, industry and firm type dummies are included in the earnings equation. * Significance at 10%, ** Significance at 5%, *** Significance at 1%. Estimated using Vietnam Internal Migration Survey 2004 conducted by GSO and UNFPA.

Table 14: Monthly Earnings Estimation by the Heckman Selection Model for Rural-Urban Migrants

Earnings equation	Coef.	Std. Err.	z	P> z
Log(wage)				
Age (current)	0.0031	0.001642	1.89	0.059
Male	0.243724	0.019573	12.45	0
Married	0.111557	0.021472	5.2	0
Primary	-0.07945	0.058439	-1.36	0.174
Lower Secondary	-0.00696	0.02627	-0.27	0.791
Upper Secondary	0.079647	0.021613	3.69	0
University	0.265322	0.071088	3.73	0
Kinh Ethnicity	0.057462	0.066372	0.87	0.387
Having spouse/family	-0.0113	0.061734	-0.18	0.855
Having blood relatives	0.008645	0.020659	0.42	0.676
Having other relatives	0.029561	0.019145	1.54	0.123
Having friends/countrymen	0.023706	0.018438	1.29	0.199
Social activity participation	0.009559	0.022731	0.42	0.674
Selection Equation				
Age at arrival	-0.0165	0.005685	-2.9	0.004
Male	0.285632	0.080144	3.56	0
Household head	0.248463	0.118907	2.09	0.037
Primary	-0.28511	0.233694	-1.22	0.222
Lower Secondary	-0.07321	0.140111	-0.52	0.601
Upper Secondary	-0.24201	0.092458	-2.62	0.009
University	0.520062	0.236807	2.2	0.028
Having a Job before arrival	1.414201	0.09662	14.64	0
Having spouse/family	-0.42657	0.178152	-2.39	0.017
Having blood relatives	-0.01978	0.090413	-0.22	0.827
Having other relatives	-0.05617	0.083001	-0.68	0.499
Having friends/countrymen	0.287716	0.088568	3.25	0.001
lambda	-0.06545	0.033221		

Heckman two steps estimation procedures correcting for sample bias. Year of arrival dummies, destination and origin dummies are included in the selection model. Destination dummies, industry and firm type dummies are included in the earnings equation. * Significance at 10%, ** Significance at 5%, *** Significance at 1%. Estimated using Vietnam Internal Migration Survey 2004 conducted by GSO and UNFPA.

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Start working after arrival	Frequency	Percentage	Cumulated
Yes	4,573	91.5	91.5
No	425	8.5	100
Total	4998	100	

Year of Migration	Start work (Yes)	Start work (No)	Total
1999	200	13	213
2000	1011	75	1086
2001	793	77	870
2002	831	75	906
2003	909	84	993
2004	829	101	930

Type of Organization (Fist Job)		
Government Organisation	577	12.62
Collective Organisation	19	0.42
Private Organisation	2260	49.42
Private Capital Organisation	818	17.89
Foreign Invested Organisation	864	18.89
Others	35	0.76

PROVINCE	Freq.	Percent	Cum.
Ha Noi	2,002	20.01	20.01
Hai Phong	500	5	25
Duong	500	5	30
Quang Ninh	1,000	9.99	39.99
Gia Lai	500	5	44.99
Dac Lac	500	5	49.99
Dak Nong	500	5	54.98
Lam Dong	500	5	59.98
Ho Chi Minh	2,005	20.04	80.01
Binh Duong	1,000	9.99	90.01
Dong Nai	1,000	9.99	100
Total	10,007	100	

ⁱ *Sample design (Source: UNFPA and GSO, 2005)*

“The survey was conducted by multi-stage sampling methods as follows:

1. First stage

Based on data from the 1999 population census and annual population change surveys conducted thereafter, five areas with high levels of in-migration were selected. These areas were: Area 1: Hanoi; Area 2: Northeast Economic Zone, including Quang Ninh, Hai Phong and Hai Duong; Area 3: Central Highlands, including Gia Lai, Dak Lak, Dak Nong and Lam Dong; Area 4: Ho Chi Minh City; and Area 5: The Southeast Industrial Zone of Binh Duong and Dong Nai.

A total of 5,000 migrants - evenly divided among the five areas were targeted. This results in approximately 1,000 interviews of migrants and about 1,000 interviews of non-migrants for each area. Where an area was comprised of more than one province, the number of target interviews was allocated equally among the provinces in that area.

In the survey, a migrant is defined as a person aged 15-59 year who had moved to their current district/quarter from another district/quarter during the 5 years prior to the survey, and who had resided at their current place of residence one month or more. A person who had moved from one quarter to another within Hanoi or Ho Chi Minh City in the five years preceding the survey is treated as non-migrant. Persons aged 15-59 who have been resident in the same district/quarter for at least five years are treated as non-migrants.

2. Second stage

Villages/urban blocks of the provinces/cities selected in the first stage were categorized by type of household registration held by residents. There are four types of household registration: KT1 – Person registered in the district where he/she resides; KT2 – Person not registered in the district where he/she resides, but registered at another district of the same province; KT3 – Person who has temporary registration for a period of six months and more; KT4 - Person who has temporary registration temporary for a period of less than 6 months.

Based on this listing, 20 communes/wards with the highest number of KT3 and KT4 residents were selected in each area. The number of communes/wards selected was divided proportionally among provinces within areas.

3. Third stage

In each commune/ward defined in the second stage, four villages/urban-blocks with the highest number of KT3 and KT4 residents were selected. In each of the selected units at this stage, a listing of residents by household was undertaken. Besides identification information, the list also contained information on each household member, including relationship to

household head, address, sex, date of birth, date of move to this current place of residence, and location of previous place of residence (district and province).

4. *Fourth stage*

From the listing of household members, migrants and non-migrants were randomly selected.

5. *Sample limitations*

The extent to which the sample can be generalized is limited. The main objective of the survey was to understand migration and differentials among migration types, and the survey was not intended to provide estimates that were representative of any clearly defined geographical area. For the five main areas including in the sample design, selection of respondents was not undertaken on the basis of equal probability of selection, either between or within the areas. Furthermore, information is not available to construct sampling weights that would adjust for the unequal probability of selection. Therefore the results for each area should not be interpreted as representing the populations of those areas.

To ensure sufficient representation of different types of migrants, defined here in terms of household registration status, the sampling scheme concentrated on those areas that had the highest proportions of temporary migrants. This means that the results are most likely to represent the areas that are the destinations of high numbers of temporary migrants”.