DETERMINANTS OF INTERNAL MIGRATION IN MONGOLIA STUDY REPORT

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Abstract

The study aims to examine determinants of internal migration of population in Mongolia. We made an attempt to analyze factors affecting internal migration of population on the basis of the database of the NSO Labor Force Surveys 2008-2009, 2011, and 2013 were conducted at national level in 4 regions (Central, Western, East, and Khangai). Location, age, sex, education, employment status, marital status, reasons for migration of respondents, who participated in migration, was clarified and analysis of factors leading to migration was made. The logit model was used to compute influence of factors affecting participation of population in internal migration.

From the study findings, we can conclude that migrants mainly participated in urban-urban and rural-urban migration. Migrants were mainly economic migrants, who moved to seek jobs, improve their living conditions, or whose workplaces moved/were transferred. Disparities in population, social and economic characteristics affected rural-urban migration of population. Internal migration is a selective process based on demographic and socio-economic characteristics of migrants in Mongolia. But in the future, more characteristics of individuals or households such as: community characteristics, household income, living conditions, returns to migration and social network could be captured by LFS.

Keywords: Internal migration, determinants of migration, migrant, non-migrant, and economic and non-economic migrant.

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1. Introduction

Internal migration of population is one of issues of concern for social and economic researchers as well as policy makers in developing countries. Due to internal migration, rural-urban migration among it, many positive and negative population, social, economic, environmental problems emerge in areas of origin and destination, leading to an increasing need for a policy dealing with these problems. On the one hand, study of migration consequences and development of policy resolutions to regulate them is important, but, on the other hand, in order to prevent migration, it seems more effective in an economic aspect to study in detail factors, affecting and determining migration to find a policy resolution that will influence such determinants. In other words, rather than implementing a policy of supporting positive consequences and reducing negative ones after population participated in migration, it is important to study in depth demographic, social and economic characteristics leading to migration to look for policy measures and solutions that influence them.

For that reason, the present study aims to examine determinants of internal migration of population in Mongolia.

2. Literature review

Among determinants of migration there are numerous factors at macro, micro and mezo levels that lead to a decision for migration. Various theoretical and empirical studies and research has been conducted in this field in different countries. For instance, Sjaastad (1962) carried out a theoretical study of determinants of rural to urban migration. He put forward a hypothesis that migration was an investment to human capital, the age was one of major indicators affecting migration and costs and returns to migration depended in great measure on such demographic, social and economic characteristics as the individuals' knowledge, skills, educational level, age, and sex.

Furthermore, a number of empiric studies on determinants of internal migration of population were conducted in developing countries. According to studies by Robert (2013), De Haas (2011), Mahinchai (2011), Farooq (2005), Memon (2005), Mitchell (2003), Khan (2000), demographic indicators such as age, sex, marital status, education, professional skills and household characteristics such as family size, household income were the main determinants of internal migration of population.

There are over 10 small and large surveys on internal migration of population in Mongolia. The PTRC (2001) survey studied the decision on internal migration, consequences, differences between migrant and non-migrant population, reasons for migration and future migration trends. The PTRC (2005) study looked at correlation between in-migration in Ulaanbaatar and poverty and made a conclusion that population participated in migration because of being poor and low-educated.

The PTRC (2010) study examined migration in a comprehensive way, conducting quantitative and qualitative surveys to collect data on migration policies, legal environment, migration flows, directions, causes, difficulties faced by migrants, registration of migration, migration costs, and future migration and making an analysis. Moreover, a conclusion was made on the basis of a comparison with findings of the 2000 study.

The NSO (2002, 2011) carried out thematic studies based on Population and Housing Census, presenting findings on levels of internal migration, its trends, flows, urbanization and general trends. The NSO (2007) also conducted a qualitative study of internal migration of population,

collecting and analyzing qualitative data on factors affecting rural-urban migration, access of migrants to basic public services, migration consequences, and migration registration.

The HSUM (2007) survey described socio-economic conditions of migrants and determined their need and access to basic public services. Study of cultural impact caused by migration that has never been studied previously, was quite interesting. The DMS (2003), Zorig Foundation (2005), Save the Children UK (2003) researchers accomplished some small-scale studies concerned with access of migrants to educational and healthcare services and their quality.

Anqing Shi (2011) focused on the characteristics of recent internal migration in Mongolia and assessment of the livelihoods of rural-to-urban migrants in comparison to those staying in rural areas as well as to local urban residents. Narantulga.B (2013) examined the impacts of migration on livelihoods of in-migrants into Ulaanbaatar city. These studies revealed that migration has significant economic dimension and it has become a survival strategy in Mongolia.

To sum up, although a number of studies on internal migration of population in Mongolia have been carried out, they all presented descriptive analysis. There is lack of studies with detailed calculations with use of statistical and econometric methods. The present research aims to fill this gap.

3. Data and methodology

Quantitative data: the NSO Labor Force Surveys 2008-2009, 2011, 2013 were conducted at national level in 4 regions (Central, Western, East, and Khangai), and covered in total 12`816 households in Ulaanbaatar (with only 7`008 households covered in the 2008-2009 survey). In total 12`816 households was covered throughout the year (with 3`204 households each quarter), which was considered representative for sampling. The Labor Force Survey 2008-2009 was conducted in third and fourth quarters of 2008 and first and second quarters of 2009, while Labor Force Surveys 2011 and 2013 were carried out in four quarters of the given year. The surveys collected basic data necessary for calculation of objective quantitative data on employment of population at national level as well as at the regional, aimag, and the Capital city levels. Although the questionnaire included five questions related to internal migration of population, namely, whether the respondent participated in migration for 6 or months within 5 years prior to the survey; the location before and after migration; reasons for migration; first arrival to the present location and duration of residence, this data was not processed in the database and findings were not disseminated to the public in their final report. Therefore, in our study we made an attempt to analyze factors affecting internal migration of population on the basis of the database of the above surveys.

According to the database, in 2008-2009 (since the sample household size was smaller compared to the 2011 and 2013, the population covered by the survey was accordingly smaller) out of 18`194 persons 1`154 (6.3% of population aged 15 and over covered by the survey), in 2011 out of 32`588 persons 2`556 (7.8% of population aged 15 and over covered by the survey), in 2013 out of 31`450 persons 2`281 (7.3% of population aged 15 and over covered by the survey) participated in migration. Location, age, sex, education, employment, marital status, reasons for migration of respondents, who participated in migration, was clarified and analysis of factors leading to migration was made.

Quantitative data from the Population and Housing Censuses 2000 and 2010 were used in some parts.

Methodology: Respondents aged 15 and over, who in the last 5 years lived for over 6 months in a location other than the present one at the time of the study, were viewed by the LFS as "*Migrants*".

In analyzing internal migration flows, migrants were categorized by location, in 4 directions, namely, *"rural-urban", "rural-rural", "urban-rural", and "urban-urban".* The capital city of Ulaanbaatar and aimag centers were included in the urban and soum centers and baghs (remote rural) were included in rural areas according to the "Law of Mongolia on Legal Status of Settlements".

In examining reasons for migrations, along with listing each of them in detail, we divided them into two general categories of economic and non-economic reasons. If the migrant moved in order to find employment, was transferred to or appointed to the other workplace, or migrated to change/improve their living conditions, he/she was viewed as an "*Economic migrant"*. If one migrated due to other reasons such as seeking better education, healthcare, social welfare, pensions, because of marriage, to join parents, children, relatives, because of natural disasters (drought, dzud), he/she was included in the category of a *"Non-economic migrant".*

Econometric Analysis: In analyzing factors affecting internal migration of population, in the frame of the human capital of migration theory, the migratory status (MIGRATORY STATUS: migrant=1, non-migrant=0) was moved in the determinant or dependent variable model. Five standard indicators of human capital such as age (AGE), age square (AGESQ), educational level (EDUCATION: education with skills=1, education without skills=0), marital status (MARITAL STATUS: married=1, unmarried=0), employment (EMPLOYMENT: employed=1, unemployed=0), present location (LOCATION: urban=1, rural=0) were used as LFS had a relatively small number of population indicators.

A logit model is a non-linear one with regard to parameters; its dependent variable has a 1 or 0 meaning. Parameters are evaluated by the most accurate method. The logit model uses the accumulated logistic distribution:

$$\boldsymbol{P_i = F(I_i) = F\left(\beta_0 + \beta_j \sum_{j=1}^{J} X_{ji}\right)} \quad (3.1)$$

Accumulated distribution:

$$\boldsymbol{P_i = F(I_i) = F\left(\beta_0 + \beta_j \sum_{j=1}^{J} X_{ji}\right) = \frac{1}{1+e^{-(\beta_0+\beta_j \sum_{j=1}^{J} X_{ji})}}} \quad (3.2)$$

Here is $Z_i = \beta_0 + \beta_j \sum_{j=1}^{J} X_{ji}$. Then the value of Z_i ranges between $(-\infty, \infty)$ and the value of P_i is such that (0, 1). The following equation illustrates that probability of population to be migrant is several times greater than probability of being non-migrant.

$$\frac{P_i}{1-P_i} = \frac{1+e^{Z_i}}{1+e^{-Z_i}} = e^{Z_i} \quad (3.3)$$

In this way the logit model was used to compute influence of factors affecting participation of population in internal migration.

4. EMPIRICAL FINDINGS

4.1. General Profile of Migrants

TABLE 4.1 shows population aged 15 and over covered by LFS by population migration status. Of population aged 15 and over covered by surveys 6.3-7.8 percent participated in migration in

the last 5 years. According to the Population and Housing Census (PHC 2002, 2011) the last year 13.7 percent of population participated in migration (Appendix Table 4.1).

TABLE 4.1: PERCENTAGE DISTRIBUTION AGED 15 AND ABOVE BY MIGRATORY STATUS AND CURRENTRESIDENCE, 2008-2009, 2011, AND 2013

Current residence	LFS 2008-2009	LFS 2011	LFS 2013
Migrant	6.3 (1154)	7.8 (2556)	7.3 (2281)
Non-migrant	93.7 (17040)	92.2 (30032)	92.7 (29169)
Total	100.0 (18194)	100.0 (32588)	100.0 (31450)

Source: NSO, Labor Force Survey, 2008-2009, 2011, and 2013. Author's calculations. Values in parentheses are numbers.

The sex ratio[4] of migrants was 84.3 computed on the basis of LFS 2008-2009, 82.8 on the basis of LFS 2011, 86.8 on the basis of LFS 2013. In other words, more women than men participated in migration.

By age distribution, migrants aged 15-24 (LFS 2008-2009 32.9%, LFS 2011 31.7%, LFS 2013 32.4%), 25-34 (LFS 2008-2009 28.5%, LFS 2011 32.0%, LFS 2013 31.8%) and 35-59 (LFS 2008-2009 34.1%, LFS 2011 31.7%, LFS 2013 31.4%) accounted for one third each of total, with remaining 4-5 percent made up by population aged 60 and over. (Appendix Table A2).

By the educational level, the majority graduated from high school (LFS 2008-2009 53.5%, LFS 2011-49.8%, LFS 2013-37.0%), one third had higher education (LFS 2008-2009 26.3%, LFS 2011- 37.5%, LFS 2013-39.0%), 4.5-5.8 percent were non-educated or had primary education (Appendix Table A2).

By marital status, over half was married (LFS 2008-2009 58.6%, LFS 2011 55.2%, LFS 2013 53.2%), around one third was single (LFS 2008-2009 30.1%, LFS 2011 29.7%, LFS 2013 29.6%) (Appendix Table A2).

By employment, about 60 percent of migrants (LFS 2008-2009 58.0%, LFS 2011 57.8%, LFS 2013 60.1%) were employed in some jobs in the 12 months prior to the survey (Appendix Table A2). Students, retired elderly, caregivers for children/elderly accounted for a greater number of unemployed.

As the three survey findings show, nearly half of migrants moved to the present location within one year, over 40 percent moved in the last 1-3 years and the rest migrated in the 3-5 years (Appendix Table A2).

To sum up, the majority of migrants were women of working age, with higher education, married, and employed. This general pattern of migrants' profile was determined by the previous studies in Mongolia as well (PTRC 2001, 2005, 2010; NSO 2002, 2007, 2011).

4.2. Migration Flows

According to LFS findings the majority of migrants moved to Ulaanbaatar and aimag centers (Table 4.2). When the last 2 survey results were compared, the number of migrants to Ulaanbaatar declined in 2013, while the number of migrants to aimag centers and rural areas went up.

[4] Sex ratio is the ratio of males to females in a population.

TABLE 4.2: PERCENTAGE DISTRIBUTION AGED 15 AND ABOVE BY MIGRATORY STATUS AND CURRENT RESIDENCE, 2008-2009, 2011, AND 2013

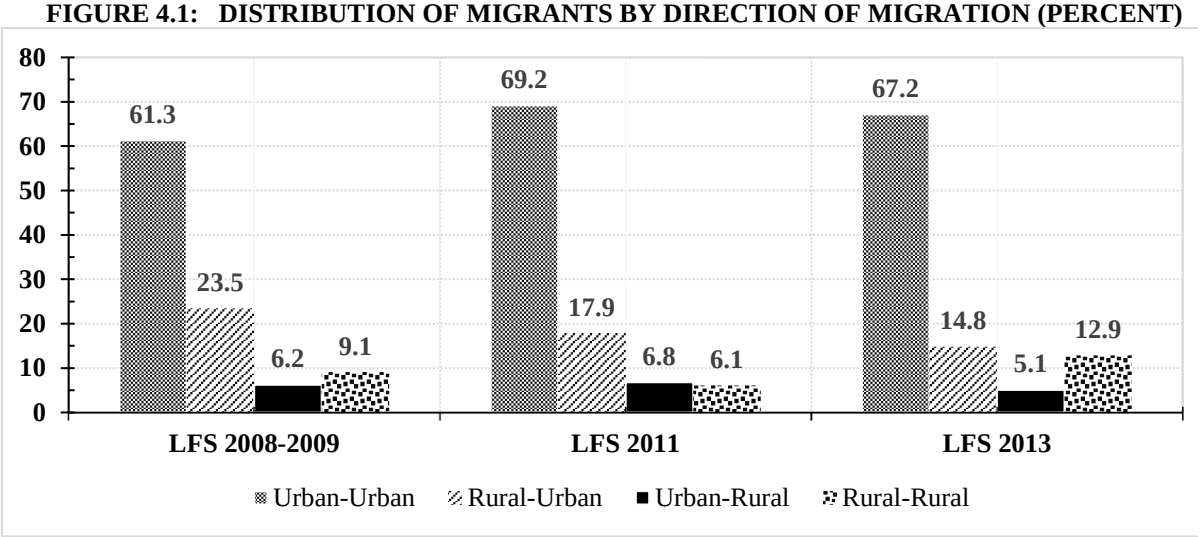
Current residence	LFS 2008-2009	LFS 2011	LFS 2013
Capital city	66.8	68.5	53.6
Aimag center	17.9	18.6	28.3
Soum center	6.9	7.0	8.5
Rural	8.3	5.9	9.6
Total	100.0	100.0	100.0
Number	1154	2556	2281

Source: NSO, Labor Force Survey, 2008-2009, 2011, and 2013. Author's calculations.

As the migration flows show, urban-urban migration is dominant in our country (Figure 4.1). Since Ulaanbaatar along with aimag centers are included in urban areas, migration between aimag centers, migration from aimag centers to Ulaanbaatar, migration from Ulaanbaatar to aimag centers is all included in this flow, so its share came out relatively high compared to other flows. Rural-urban migration comes second after urban-urban migration. As figure 1 illustrates, according to the latest research rural-rural migration increased, with urban-urban and urban-rural migration declining.

Migration flows by age groups showed that among population of any age group urban-urban migration was high. As for education, while among population with higher than high school education urban-urban migration dominated, the number of non-educated and low-educated migrants moving from rural to urban areas was greater. (Appendix Table A3).

FIGURE 4.1: DISTRIBUTION OF MIGRANTS BY DIRECTION OF MIGRATION (PERCENT)



Source: NSO, Labor Force Survey, 2008-2009, 2011, and 2013. Author's calculations.

4.3. Migration Causes

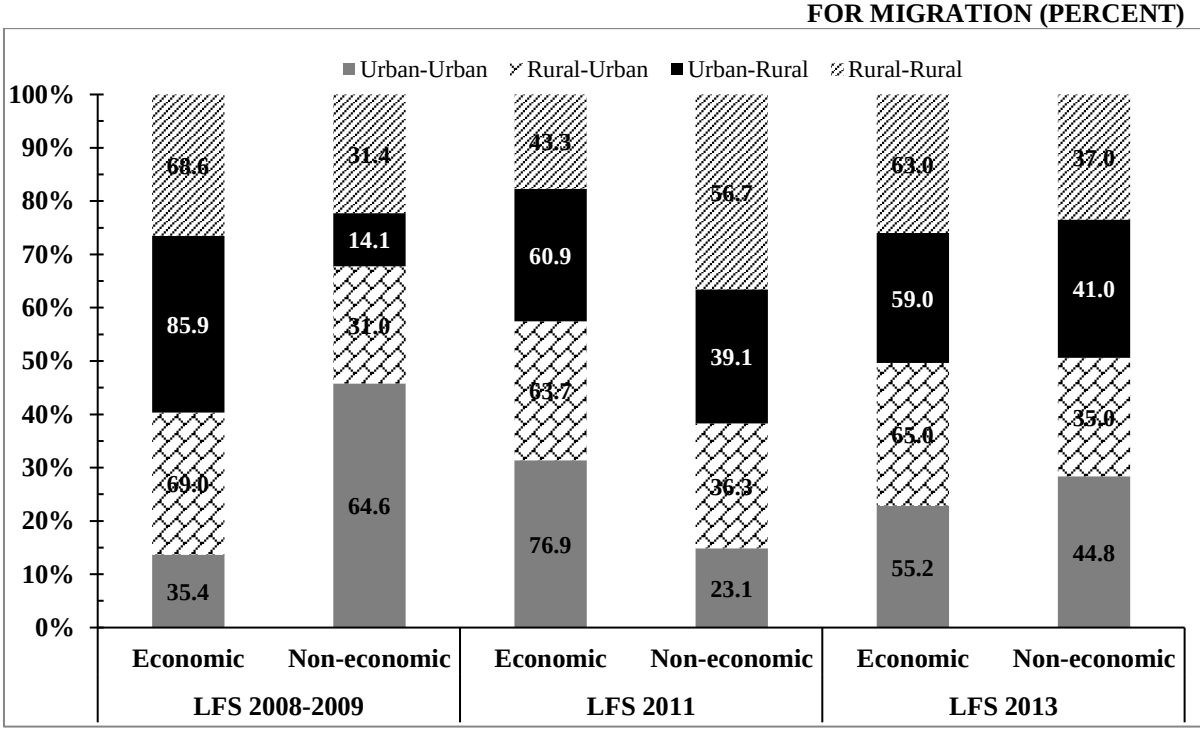
When reasons for migration were studied among migrants, who participated in migration 5 years prior to the survey, LFS 2008-2009 showed 49.4 percent of economic migrants, going up to 71.4 percent according to LFS 2011, and 57.9 percent in LFS 2013. It can be said that in general, economic migrants prevail.

Demographic, social and economic characteristics influence greatly causes of migration. Survey findings (Appendix Table A4) showed that in 2008-2009 the majority of single young people aged 15-24, with higher education, migrated due to economic reasons. However, LFS

2001, 2013 results showed that by every indicator economic reasons dominated. The three survey results did not show substantial disparities by sex.

When reasons for migration among migrants were studied by migration flows (Figure 2), according to LFS 2008-2009 findings the majority of urban-urban migrants moved due to non-economic reasons, but the last two surveys showed that economic reasons for migration were prevailing.

FIGURE 4.2: DISTRIBUTION OF MIGRANTS BY DIRECTION OF MIGRATION AND REASON FOR MIGRATION (PERCENT)

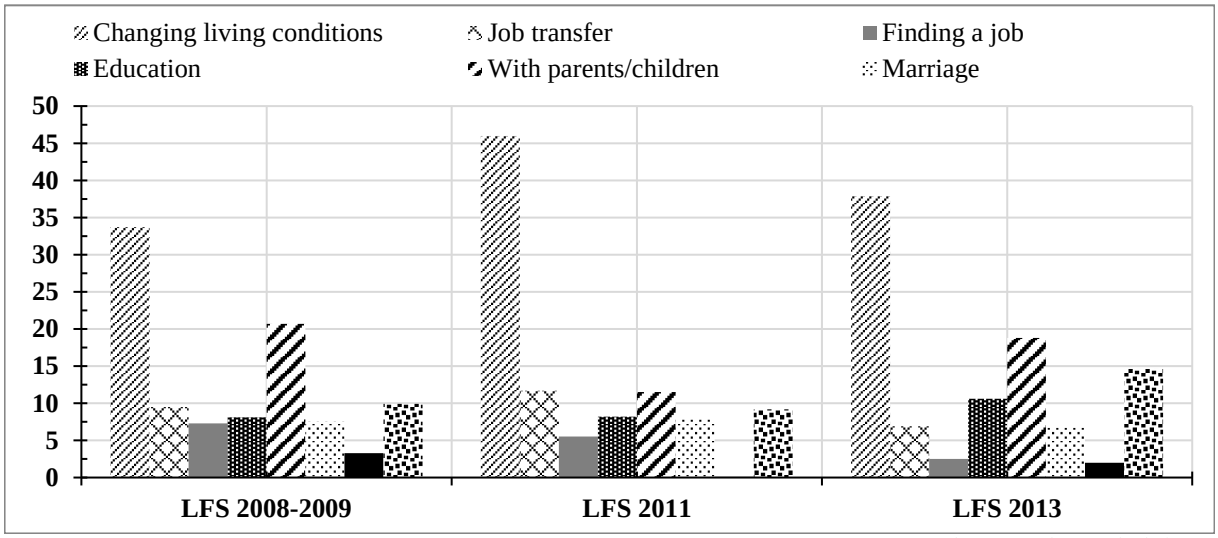


Source: NSO, Labor Force Survey, 2008-2009, 2011 and 2013. Author's calculations

As for urban-rural and rural-urban migrants, at any time the majority were migrants moving for economic reasons. Among rural-rural migrants in 2008-2009 and 2013 economic reasons dominated, but in 2011 non-economic migrants became the majority.

When migration causes were examined in detail, they were listed as follows: *first*, changing living conditions, *second*, joining parents/children, *third*, looking for jobs/jobs were transferred, *fourth*, education, *fifth*, marriage (Figure 3).

FIGURE 4.3: DISTRIBUTION OF MIGRANTS BY MAIN REASON FOR MIGRATION (PERCENT)



Source: NSO, Labor Force Survey, 2008-2009, 2011 and 2013. Author's calculations

The above trend of prevailing economic reasons for internal migration participants in Mongolia has been observed by previous research. For instance, according to the PTRC (2001, 2010) survey five leading causes of migration among migrants to Ulaanbaatar, Darkhan Uul, Orkhon aimag included a wish to move closer to the market, to seek jobs, to study or get the children to study in quality schools, to move closer to the family, relatives, due to natural disasters, ecologic reasons (droughts, dzud). It means that shortage of workplaces in rural areas in Mongolia, unsatisfactory access to and low quality of basic public services including education leads to migration of population to urban areas in order to improve these conditions.

Over half of economic migrants have been employed in the last 12 months (Table 4.3). Being employed at the present location might be for them achievement of their migration goal.

TABLE 4.3: PERCENTAGE DISTRIBUTION OF MIGRANTS BY EMPLOYMENT STATUS AND REASON FOR MIGRATION, 2008-2009, 2011, AND 2013

	LFS 2008-2009		LFS 2011		LFS 2013	
	Economic	Non-economic	Economic	Non-economic	Economic	Non-economic
Employed	54.2	61.6	59.9	52.5	61.8	57.8
Unemployed	45.8	38.4	40.1	47.5	38.2	42.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	570	584	1825	731	1320	961

Source: NSO, Labor Force Survey, 2008-2009, 2011, and 2013. Author's calculations.

However, unemployed accounted for 38-40 percent of migrants, which is an evidence of limited employment opportunities at the new location, shortage of workplaces.

4.4. Determinants of Migration

LFS 2008-2009, 2011, 2013 data were computed with use of the logit model to evaluate probability of population migration. An attempt was made to evaluate that of total population, male and female population separately and to show gender disparities. See computation meanings in Tables A5, A6, A7.

Age (AGE): In general, based on 3 survey computation, migration probability was higher as the population age was younger. According to the LFS 2013 findings, probability of

participation in migration for men was higher as they got older. As for AGESQ indicator, it was insignificant by 2008-2009 survey, but had significance according to the last two surveys.

Education (EDUCATION): According to LFS 2001, 2013 computation, education and skills of population had a negative correlation with probability of migration. In other words, the lower the educational level of population, the more inadequate knowledge and skills, the higher was migration probability. However, according to the LFS 2008-2009 results a positive dependence was observed between education, skills and migration probability. Therefore, it might be possible that while previously educated population participated more actively in migration, in recent years relatively less educated people participated more in migration. Such results demonstrated that educational level of population was a major determinant of internal migration of population.

Marital status (MARITAL STATUS): As for marital status, computation showed higher migration probability for married population. The logit model computation has a high level of significance at the time of every study. A prevailing trend of family migration within migration in our country was observed in the course of previous studies as well (PTRC 2001, 2010). The present study also confirmed this trend.

Present location (LOCATION): As the survey findings showed, migration probability increased greatly, if the area to move into was "the city". When migration flows were looked at in chapter 4.2 of the report, migrants also participated more in urban-urban, urban-rural migration. Therefore, the present study findings proved again that rural-urban migration prevailed in our country.

Employment (EMPLOYMENT): Some significant sex specifics were observed regarding employment. While being unemployed greatly increased migration probability for men, this indicator did not play a significant role among women. It might be related to a fact that men as household heads, main breadwinners were ready to move to any place, where the opportunity emerged to improve their lives.

5. CONCLUSIONS

The present study aimed to determine determinants of internal migration in Mongolia. Following conclusions were made from the study findings:

- ✓ Migrants mainly participated in urban-urban and rural-urban migration. However, since aimag centers were included in urban areas along with Ulaanbaatar, migration between aimag centers also went into this category. That is why the share of population, who participated in this migration flow, was relatively high. In the future, collecting data on location during LFS by detailed location status such as the capital city, aimag center, soum center, and rural area will meet more fully research needs.
- ✓ Migrants were mainly economic migrants, who moved to seek jobs, improve their living conditions, or whose workplaces moved/were transferred. Study results showed again shortage of workplaces in rural areas, low employment opportunities. However, the study did not allow to determine whether migration goals were achieved as a result of the move.
- ✓ Disparities in population, social and economic characteristics affected rural-urban migration of population. Especially education, marital status, residence type made a significant impact on internal migration of population. As for men, the employment status became an important factor of making a decision on migration.
- ✓ Previously, there was no research on internal migration of population that used the LFS database. Regardless of insufficient statistics on migration, the present study had a real significance in determining migration flows, its causes, and indicators of migration characteristics. In order to improve further significance of LFS, it is important to analyze data on migration collected in the course of the survey and disseminate the results in a form of topical study. It will give an opportunity to create data on internal migration trends and flows in a continuous manner. Since the NSO conducts LFS every year and publishes consolidated findings in the end of the year, data on migration can also be issued every year.
- ✓ Finally, the results presented in this study indicate that internal migration is a selective process based on demographic and socio-economic characteristics of migrants in Mongolia. But in the future, more characteristics of individuals or households such as: community characteristics, household income, living conditions, returns to migration and social network could be captured by LFS.

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7. APPENDIX

TABLE A1: IN-MIGRANTS BY AIMAGS, 2000 AND 2010 CENSUSES (AS PERCENTAGE OF THEIR TOTAL POPULATION)

Lifetime Migration			Five-year Migration*			One-year Migration		
Aimag	%		Aimag	%		Aimag	%	
	2000	2010		2000	2010		2000	2010
Orkhon	69.9	70.1	Umnugobi	4.6	26.0	Umnugobi	2.5	17.2
Gobisumber	63.4	63.1	Gobisumber	19.3	25.0	Gobisumber	5.7	7.6
Darkhan-Uul	52.8	60.3	Darkhan-Uul	17.9	19.9	Darkhan-Uul	6.9	6.4
Ulaanbaatar	35.4	52.9	Orkhon	24.3	19.0	Tuv	5.3	5.4
Selenge	35.1	48.5	Ulaanbaatar	13.7	18.2	Orkhon	7.0	5.3
Tuv	27.4	43.4	Tuv	12.5	17.6	Ulaanbaatar	5.5	5.3
Dornogobi	20	40.5	Dornogobi	11.5	15.9	Dornogobi	5.4	4.9
Umnugobi	5	40.5	Selenge	11.2	15.9	Selenge	4.1	4.2
Bulgan	14.1	37.1	Bulgan	7.3	11.2	Bulgan	2.6	4.1
Khentii	13.2	35.9	Khentii	4.9	10.4	Gobi-Altai	0.4	3
Sukhbaatar	3.5	29.3	Govi-Altai	1	9	Khentii	1.7	2.8
Govi-Altai	1.2	27.4	Sukhbaatar	3.1	6.3	Sukhbaatar	1.6	2.2
Uvs	1.8	26.2	Khovd	4.2	5.9	Khovd	1.9	2.1
Dundgovi	2.2	25.2	Zavkhan	2.2	5.7	Bayankhongor	0.2	1.9
Bayankhongor	0.7	24.6	Arkhangai	1.7	5.4	Dornod	1.6	1.9
Uverkhangai	3	21.9	Dundgovi	1	5.3	Dundgovi	0.3	1.9
Arkhangai	2.2	21.8	Uvs	2.1	5.1	Uvs	1.1	1.8
Khovd	2.3	21.3	Bayankhongor	0.5	4.9	Zavkhan	0.9	1.7
Dornod	4.1	20.3	Dornod	3.6	4.9	Arkhangai	0.6	1.6
	9.8	16.7	Uverkhangai	2.3	4.5	Uverkhangai	1	1.5
Khuvsgul	2.4	16.1	Khuvsgul	1.9	3.8	Khuvsgul	0.8	1.3
Bayan-Ulgii	1.8	15.9	Bayan-Ulgii	1	3	Bayan-Ulgii	0.7	1.1
Mongolia	20.7	41.5	Mongolia	8.5	13.7	Mongolia	3.3	4.3

Source: Calculations based on data from NSO 2012, "Population and Housing Census 2010: Umnugovi aimag" Tables 10, 12, and 13 in Appendix and NSO 2001, "Population and Housing Census 2000: Main Results" Tables 5, 7 and 8 in Appendix.

* - The share of five-year in-migrants are estimated from population aged 5 and above.

TABLE A2: PERCENTAGE DISTRIBUTION OF MIGRANTS BY SOME SELECTED SOCIO-ECONOMIC CHARACTERISTICS, 2008-2009, 2011, AND 2013

Region	LFS 2008-2009	LFS 2011	LFS 2013
Age group			
15-24	32	31.7	32.4
25-34	28.5	32	31.8
35-59	34.1	31.7	31.4
60+	5.5	4.6	4.3
Sex			
Male	45.8	45.3	46.5
Female	54.2	54.7	53.5
Education Level			
None/Primary	5.8	4.7	4.5
Secondary	53.5	49.8	37
Professional/Vocational	14.4	8	19.4
Higher	26.3	37.5	39
Marital Status			
Single	30.1	29.7	29.6
Married	58.6	55.2	53.2
Living together	0.3	6.5	10
Separated	2.2	1.7	1.6
Divorced	3	2.5	1.9
Widowed	5.8	4.5	3.7
Employment Status			
Employed	58	57.8	60.1
Unemployed	42	42.2	39.9
Duration of migration			
Less than one year	44.9	49.9	45.7
1-3 years	41.4	41.8	43.1
3-5 years	13.7	8.3	11.4
Total	100	100	100
Number	1154	2556	2281
Age group			
15-24	32	31.7	32.4
25-34	28.5	32	31.8
35-59	34.1	31.7	31.4
60+	5.5	4.6	4.3
Sex			
Male	45.8	45.3	46.5
Female	54.2	54.7	53.5
Education Level			
None/Primary	5.8	4.7	4.5
Secondary	53.5	49.8	37
Professional/Vocational	14.4	8	19.4

Higher	26.3	37.5	39
Marital Status			
Single	30.1	29.7	29.6
Married	58.6	55.2	53.2
Living together	0.3	6.5	10
Separated	2.2	1.7	1.6
Divorced	3	2.5	1.9
Widowed	5.8	4.5	3.7
Employment Status			
Employed	58	57.8	60.1
Unemployed	42	42.2	39.9
Duration of migration			
Less than one year	44.9	49.9	45.7
1-3 years	41.4	41.8	43.1
3-5 years	13.7	8.3	11.4
Total	100	100	100
Number	1154	2556	2281

Source: NSO, Labor Force Survey, 2008-2009, 2011, and 2013. Author's calculations.

TABLE A3: PERCENTAGE DISTRIBUTION OF MIGRANTS BY SOME SELECTED CHARACTERISTICS AND DIRECTION OF MIGRATION, 2008-2009, 2011, AND 2013

Region	LFS 2008-2009				LFS 2011				LFS 2013			
	Urban rban	Rural-urban	Urban-rural	Rural-rural	Urban urban	Rural-urban	Urban-rural	Rural-rural	Urban urban	Rural-urban	Urban-rural	Rural-rural
Age group												
15-24	59.1	26.3	8.4	6.2	61.6	20.9	10	7.5	56.6	14.9	8	20.6
25-34	62.6	18.2	8.5	10.6	73.5	15.3	6.2	5	71.5	13.9	5.4	9.2
35-59	63.8	23.7	2.8	9.7	72.7	16.3	4.7	6.3	73.8	14.5	2.5	9.2
60+	50.8	33.3	1.6	14.3	66.9	26.3	3.4	3.4	66.7	22.2	1	10.1
Education Level												
None/Primary	22.7	40.9	7.6	28.8	34.2	36.7	8.3	20.8	31.1	16.5	6.8	45.6
Secondary	56.7	28.1	6	9.2	65.1	21.6	6.3	7	57.3	17.4	5	20.4
	66.1	22.4	4.2	7.3	57.6	22	12.2	8.3	72.2	14.4	5.9	7.4
Higher	77.7	10.6	7	4.7	81.4	9.7	6.2	2.7	78.2	12.2	4.7	4.8

Source: NSO, Labor Force Survey, 2008-2009, 2011, and 2013. Author's calculations. The percentage is calculated by row-wise.

TABLE A4: PERCENTAGE DISTRIBUTION OF MIGRANTS BY SOME SELECTED CHARACTERISTICS AND REASON FOR MIGRATION, 2008-2009, 2011, AND 2013

Region	LFS 2008-2009		LFS 2011		LFS 2013	
	Economic	Non-economic	Economic	Non-economic	Economic	Non-economic
Age group						
15-24	40	24.1	28.9	38.6	32.1	32.8
25-34	27.7	29.3	32.7	30.5	29.9	34.4
35-59	29.8	38.2	34.5	24.6	34.1	27.8
60+	2.5	8.4	3.9	6.3	3.9	5
Education Level						
None/Primary	5.9	5.7	2.2	10.8	2.7	7
Secondary	61.7	45.5	49.1	29.6	34.2	41
	11.9	16.9	7.3	9.8	18.9	20.2
Higher	20.6	31.9	41.4	27.8	44.2	31.8
Marital Status						
Single	43.5	17	29.9	29.1	32.6	25.5
Married	47.7	69.2	55.5	54.6	52.7	53.9
Living together	0.2	0.5	6.2	7.1	8.1	12.6
Separated	2.1	2.2	1.8	1.4	1.4	2
Divorced	3.3	2.7	2.6	2.2	1.9	2
Widowed	3.2	8.4	4.0	5.6	3.4	4.1
Employment Status						
Employed	54.2	61.6	59.9	52.5	61.8	57.8
Unemployed	45.8	38.4	40.1	47.5	38.2	42.2
Total	100	100	100	100	100	100
Number	570	584	1825	731	1320	961

Source: NSO, Labor Force Survey, 2008-2009, 2011, and 2013. Author's calculations.

TABLE A5: LOGIT MODEL ESTIMATES, LFS 2013

	Total		**Male**		**Female**	
Parameter	**Estimated Coefficient**	**t-statistic**	**Estimated Coefficient**	**t-statistic**	**Estimated Coefficient**	**t-statistic**
Intercept	-2.232	-15.903***	-10.467	-8.141***	-2.344	-9.944***
Age	-0.143	-18.471***	0.034	1.794*	-0.066	-4.450***
AgeSQ	0.002	20.462***	-0.001	-3.615***	0	2.255**
Education	-0.803	-13.614***	0.983	11.305***	-0.174	-2.052**
Marital	0.682	10.297***	0.534	5.132***	0.404	4.229***
Location	1.839	25.646***	6.881	5.501***	0.821	9.363***
Employment	-0.291	-4.712***	-0.311	-3.304**	-0.644	-7.119***
Chi-Square		131107.085		57042.147		52457.033
Sample Size		31450		15109		16341

Source: NSO, LFS 2013. Author's calculations.

*** Significant at $\alpha < 0.01$

** Significant at $\alpha < 0.05$

* Significant at $\alpha < 0.1$

TABLE A6: LOGIT MODEL ESTIMATES, LFS 2011

	Total		Male		Female	
Parameter	**Estimated Coefficient**	**t-statistic**	**Estimated Coefficient**	**t-statistic**	**Estimated Coefficient**	**t-statistic**
Intercept	-3.241	-21.353***	-4.054	-15.406**	-3.170	-16.280***
Age	-.056	-6.021***	-.033	-2.239**	-.052	-4.499***
AgeSQ	.000	2.864**	.000	2.317**	.000	2.395**
Education	-.234	-3.077**	-.441	-2.871***	-.141	-1.421
Marital	.637	11.420***	.802	6.668***	.500	7.098***
Location	1.528	25.120***	1.061	10.117***	1.514	18.080***
Employment	.083	1.667*	-.626	-6.510***	-.018	-.275
Chi-Square		64664.631		57507.643		32729.316
Sample Size		32588		15689		16899

Source: NSO, LFS 2011. Author's calculations.

*** Significant at $\alpha < 0.01$

TABLE A7: LOGIT MODEL ESTIMATES, LFS 2008-2009

	Total		Male		Female	
Parameter	**Estimated Coefficient**	**t-statistic**	**Estimated Coefficient**	**t-statistic**	**Estimated Coefficient**	**t-statistic**
Intercept	-3.633	-16.271***	-3.683	-10.663***	-3.449	-11.660***
Age	-.042	-3.035*	-.059	-2.741**	-.042	-2.309**
AgeSQ	.000	1.433	.000	1.588	.000	1.166
Education	.424	6.222***	.472	4.623***	.440	4.742***
Marital	.355	4.416***	.453	3.367***	.307	2.995***
Location	1.337	15.365***	1.458	11.129***	1.233	10.433***
Employment	.079	1.038	.344	2.718**	-.063	-.634
Chi-Square		34673.002		17320.024		17998.243
Sample Size		18194		8696		9498

Source: NSO, LFS 2008-2009. Author's calculations.

*** Significant at $\alpha < 0.01$

** Significant at $\alpha < 0.05$

* Significant at $\alpha < 0.1$