Determinants of Internal Migration in Rwanda

A cross-sectional analysis of factors associated with migration in Rwanda: An economic perspective

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ABSTRACT

This study investigates the determinants of recent migration in Rwanda. The study used internal and international migration data to find out the factors associated with recent migration in Rwanda. By using Rwanda labour force survey (RLFS, 2018), we considered the participants who migrated from one district to another and those who migrated internationally with 16 years old and above. First, we employed a binary outcome probit model to find out the factors associated with migration decision. Secondarily we introduced a multinomial logit model to find out the factors associated with migration destination choice. For both these models, we estimated the model coefficients by marginal effects. The study revealed that gender, education, employment in industry and services, living together and being divorced or separated are significant and positively associated with migration decision and migration destination choice. However, residing in rural and household size are significant and negatively associated with recent migration decision and destination choice. The study recommended that the government should accelerate the process of reinforcing secondary cities in order to curb the disparity of opportunities between regions.

Keywords: Recent migration, internal and international migration and Rwanda.

1. INTRODUCTION

Rwanda is a country with the highest population density in Africa. According to Rwanda's National Institute of Statistics (NISR), in 2015, the population density in Rwanda was estimated to be 445 people per km^2. Based on NISR's population projection, the population density is 525 per Km^2 in addition to that, more than 80% of the population earn a living from subsistence farming and cattle keeping.

The phenomenon of internal migration in Rwanda is as old as the Rwandan society. In the pre-colonial Rwanda, people migrated mostly to look for pastures for their cattle while others migrated to look for arable lands. As the political, social and economic situation of the country evolved, other reasons for migration emerged.

The greater availability of economic opportunities in Kigali and secondary cities is the main pull factor for migrants to move to urban areas in Rwanda. The development of urban planning strategies, as suggested by the ongoing National Strategy for Transformation I (NST1), is expected to divert migration to other districts.

According to Rwanda's Fourth Population and Housing Census (2012), the main destinations of internal migrants are Gasabo District in the City of Kigali (16%) and Nyagatare District in Eastern Province (12%); these two districts represent 28 per cent of all internal migration in the country.

The population density in 2012 was 415 persons per square kilometre and was estimated at 478 persons per square kilometre in 2018. Compared to its neighbouring countries, namely, Burundi (with 333 persons per sq. km.), Uganda (173 per sq. km.) and Kenya (73 per sq. km.), Rwanda is the most densely populated country in the region.

The Fifth Integrated Household Living Conditions Survey (EICV 4) shows that the main destinations for migrants are still the City of Kigali2 (33%) and Eastern Province (14%). The Labour Force Survey (August 2018 round) mentions that the majority of migrants in Rwanda are internal migrants (1,348,168), with more women (52.2%) than men (47.8%) among internal migrants of working age (16 years old and over).

In the Rwandan context, few formal studies (for example Gakwandi, 2008) have attempted to focus on analyzing why many youths are migrating to different urban areas of the country. According to the World Bank (2017), the districts of Kigali and the Eastern Province were the main destinations for recent migration in Rwanda.

The purpose of this paper is to understand the reasons behind these migration patterns. In addition, to estimate at which extent the associated factors are affecting migration decision and destination choice in Rwanda. Our study confirms that migrants are looking for better opportunities (land, jobs, etc).

2. LITERATURE

Migration is defined as a shift of place in the area of residence. It can be permanent or temporary depending on circumstances or depending on the migrant's choice (UNECE, 2016).

Migration can be split into main categories: International migration which is the movement of an individual or a household or a group of people outside their usual country of residence. Internal migration is a phenomenon of migrating within the country (without crossing the country's borders).

In turn, internal migration can be split into four categories which are: Rural to urban where people migrate from rural areas to urban areas. It is important to note that this is the widely known category of migration as it attracts a lot of people. The second category is rural to rural migration where people migrate from one rural area to another rural area. The third category is urban to rural migration where people migrate from urban to rural areas. The fourth and last category is urban to urban migration where people migrate from one urban area to another.

In the context of our study, we define internal migration as migration from one district to another.

A lot of studies have been conducted with regards to internal migration in different countries. In contrast to the earlier models of migration that analyze the individual's decision to move as a function of his/her own expected net economic benefit (Harris and Todaro 1970), a growing literature has been modelling migration as both an individual and family decision that not only maximizes income but also minimizes risks (Stark, 1991; Stark and Bloom 1985; Taylor 2001). It is widely known that family members tend to migrate together when the head of the household is intending to spend a long or indefinite time where he/she is going.

Kabadayi (2015) analyze the determinants of internal migration movements between the period of 2008-2012 according to push and pull factors on migration using panel data analysis. Job opportunities, education, health conditions and security have an impact on pulling internal migration. Most people who migrate are looking for better opportunities that will help improve their living conditions in one way or the other.

Oz ve Celebioglu (2016) analyze the effect of the factors such as unemployment rate, socio-economic development index on migration utilizing spatial analysis dimensions. They found that socio-economic reasons affect internal migration as Western Turkey is more industrialized and has more job and higher per capita income level opportunities. After the end of colonialism, people started to migrate from rural to urban areas. Other groups of the population started to move from high densely populated areas to relatively low densely populated areas.

The concentration of economic activities (which implies the concentration of job opportunities) in Kigali, income differentials, and the swift population growth are considered as the key factors explaining internal migration in Rwanda since independence.

Between 2000 and 2015, internal migration from the Western and Northern Provinces (where the rural population density is higher than other rural provinces) to the Eastern Province (where the rural population density is lower than other rural provinces) has been observed. The main reason was to get arable land.

Internal migration, mostly composed of young adults and the poor, constitutes the largest flow of people in developing countries (UNDP, 2009). Recent empirical evidence has focused on analyzing the determinants as well as the impacts of international migration.

From 2015 up to 2020, some youth from the Eastern Province are moving to the Northern and Western parts of the country especially due to the thriving tourism industry in this part of the country.

Educational attainment is a primary determinant of internal migration, particularly in the rural to the urban direction (World Bank, 2009). Economic theories of migration hold that skills flow to the place of highest return (see Massey, et al., 1993; World Bank, 2009). Thus, levels of education act as an enabler of migration by improving employment opportunities and the likelihood of securing work. Migrants are most commonly found to be positively selected on human capital characteristics with relatively higher levels of education and occupational status as compared with non-migrants of a particular population (Findley, 1977; Speare and Harris, 1986). Nevertheless, research has also shown a positive association between high and low skilled international migration (Gibson and McKenzie, 2011) indicating that some variations in observed patterns may be present.

According to the LFS 2018, the relationship between educational attainment and the unemployment rate was significantly different, showing a relatively positive slope. The unemployment rate increased from 14.3 per cent for young people with no educational attainment, to 33 per cent for youth with upper secondary education, and then a slightly declined to 25.7 per cent among youth who had completed university education. This pattern suggests that the higher the educational attainment of a young person, the higher his or her risk of unemployment. One could think of several reasons for this phenomenon.

First, persons with higher educational attainment have a higher reservation wage, preferring to wait for suitable employment rather than accepting a job considered as inadequate or low paying. Another possible reason may be the existence of a mismatch between the qualifications of the young and the skills requirements of available jobs in the labour market.

In most cases, people who decide to migrate have standard skills that can help cope with their new environment. In addition to that, they need those skills (language, writing, technical) to be able to compete for jobs in their new environment. This can explain why people with some level of education are highly likely to migrate compared to those who do not have basic education.

It is assumed that marital status may affect the decision to migrate as a married couple may decide to migrate together for the sake of their marriage rather than staying away from each other. With regards to disability, people with disability are less likely to migrate than people who do not have any form of disability.

Although most empirical studies and policy debates have focused on rural-to-urban migration, reflecting concerns over the rapid rate of growth of cities, few studies have highlighted the importance of other internal migration patterns such rural-to-rural (Banerjee and Duflo, 2007). Then in our study, we focused on migration between the districts in Rwanda. Internal migration was defined as to move from one district to another. Based on the data from RLFS, migration within the district was not considered. We used this data to find out the factors associated with internal migration in Rwanda among people who are aged 16 years and above.

3. DATA AND METHODOLOGY

3.1 Data and sample size

Data used in this research are from a nationwide survey called "Rwanda Labor Force Survey (RLFS)". We used cross-sectional data collected in August 2018. The sample size for August 2018 was 9,248 households(NISR, 2018). The survey conducted at the household level and each household member from selected households involved in the survey. The researchers used only the participants who were aged 16 years and above only during the survey to find out the relationship between migration with its determinants.

For the purpose of this survey (RLFS), migration is defined as a move that crosses the geographical boundaries of a district (in either an inward or an outward direction). The survey considers internal migration only when a respondent reported that he/she has moved from one district to another.

3.2 Variable description

Variables(presentation in Model)	**Variable labels**
Schooling age (Ed)	Numeric
Sex (S)	Female=1 Male=0
Residence (Res)	Urban=1 Rural=2
Age (Age)	Numeric
Age squared (Age^2)	Numeric
Employment (E)	Jobless=0, Agriculture=1, Industry=2, Services=3
Disability (Dis)	Yes=1, No=0
Household size (HH)	Numeric
Marital status (Ms)	Married=1, Living together=2, Divorced/separated=3, Single=4, Widow/widower=5

3.3 Empirical models specifications

In this paper, we introduced both binary probit and multinomial logit models by using STATA version 15. These models adopted by Madhav Regmi et al. (2014) in the analysis of factors associated with migration in Nepal. The general model presented in the following way.

$$Z = \alpha + \beta_1 Ed + \beta_2 Res + \beta_3 S + \beta_4 Age + \beta_5 Age^2 + \beta_6 E + \beta_7 HH + \beta_8 Ms + \beta_9 Dis + \varepsilon$$

This is a general model for both binary probit and multinomial logit model, where Z stands for dependent variable recent migration. We differentiated those two models as follow:

1. Binary probity model for recent migration decision, Pr $(Z_{ij} = 1|X_{ij})$

$$\boldsymbol{Zij} = \begin{cases} 0 \text{ if household j has not sent a family member i for migration} \\ 1 \text{ if household j has sent a family member i for migration} \end{cases}$$

2. Multinomial logit model for recent migration destination choices, Pr $(Z_{ij} = k|X_{ij})$

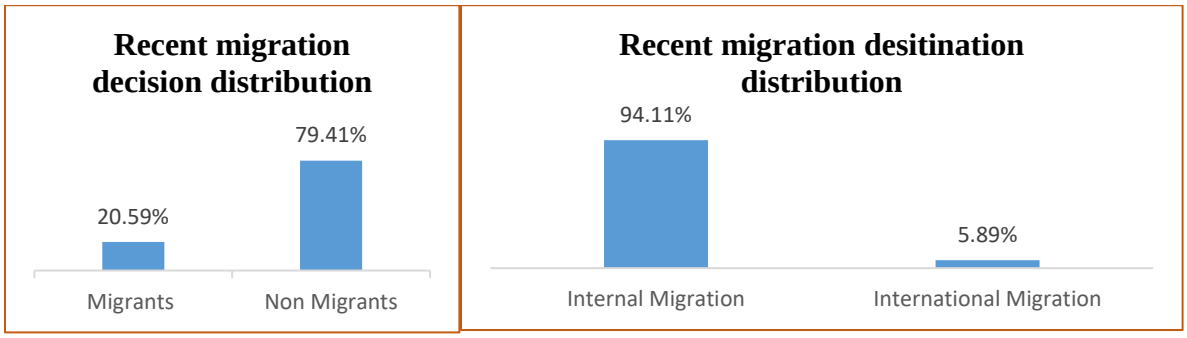
$$\boldsymbol{Zij} = \begin{cases} 1 \text{ if household j has not sent a family member i for migration} \\ 2 \text{ if household j has sent a family member i for internal migration} \\ 3 \text{ if household j has sent a family member i for international migration} \end{cases}$$

4. EMPIRICAL RESULTS

In this analysis, we introduce both descriptive, bivariate and multivariate analysis based on well-cleaned data by researchers. In this analysis, we considered migration with two last movement of the participant. We have employed both binary probit and multinomial marginal effects to estimate the probability of deciding and choosing the destination for recent migration in Rwanda.

4.1 Descriptive analysis

4.1.1 Recent migration decision and destination choices



The charts above indicate that among the participants aged 16 years and above, 79.41% took the decision not to migrate and 20.59% took the decision to migrate. Among those who migrate, 94.11% choose to migrate internally and 5.89% choose to migrate internationally. This can be explained by the fact that migrating outside the country requires a high level of resources that many people have access to.

4.1.2 **Reported reasons for recent migration**

Reasons	Internal Migration		International Migration		Total	
	n	%	n	%	n	%
Parents moved	319	7.3	20	7.3	339	7.3
To live with relatives	505	**11.5**	39	**14.2**	544	11.6
To attend school	217	4.9	14	5.1	231	4.9
Marriage	372	8.5	11	4.0	383	8.2
Family quarrel	39	0.9	5	1.8	44	0.9
Divorce	20	0.5	2	0.7	22	0.5
Found job	828	**18.8**	28	**10.2**	856	18.3
Job transfer	75	1.7	3	1.1	78	1.7
To look for work	971	**22.1**	35	**12.7**	1006	21.5
Looking for land to farm	108	2.5	1	0.4	109	2.3
Loss of employment	97	2.2	7	2.5	104	2.2
Employment of spouse	84	1.9	5	1.8	89	1.9
Coming back in country/building/Renting	756	**17.2**	88	**32.0**	844	18.1
Other	5	0.1	17	6.2	22	0.5
Total	**4396**	**100**	**275**	**100**	**4671**	**100**

Source: RLFS, August 2018

By looking on the above table, among who choose to migrate internally, 11.5% migrated because they live with relatives, 18.8% migrated because they found a job, 22.1% migrated for looking for a job, 17.2% reported that they came back in country/building or renting. While for those who migrated internationally, 14.2% migrated because they live with relatives, 10.2% migrated because they found a job, 12.7% migrated for looking for a job and 32%% reported that they came back in country/building or renting.

4.2. Model findings

Before we run the model, we conducted the bivariate analysis to select the variable that must be included in the final model. We use both chi-square test, binary outcome probit and multinomial model with only two variables. Means that we run the model with dependent and one covariate. If p.value is less than 0.05, variable selected for the final model. Then all variables were selected for final models. We used marginal effects for both models.

Binary Probit Marginal Effects for Recent Migration Decision and Multinomial Logit Marginal Effects for Recent Migration Destination Choices			
VARIABLES(Re: indicating a reference group for factor variables)	Migration Decision (Probit Estimates)	Migration Destination Choices (Multinomial Logit Estimates)	
	All migration (Base: no migration)	All Destinations (Base: No Migration)	
		Internal	International
Female(sex) Re: Male	0.0268*** (0.00513)	0.0301*** (0.00472)	-0.00198* (0.00110)
Years of schooling(Ed)	0.00356*** (0.000589)	0.00236*** (0.000539)	0.000836*** (0.000120)
person with disability(Dis)Re: non disable	-0.0282 (0.0190)	-0.0361* (0.0205)	0.000520 (0.00431)
Household size(HHs)	-0.0206*** (0.00112)	-0.0200*** (0.00108)	-0.000555** (0.000234)
Age	-0.00991*** (0.00101)	-0.00892*** (0.00106)	-0.000354 (0.000235)
Age^2	0.000*** (0.000)	0.000*** (0.000)	0.000 (0.000)
Rural(Res) Re: Urban	-0.185*** (0.00668)	-0.168*** (0.00663)	-0.0123*** (0.00195)
Agriculture(E) Re: jobless	0.00307 (0.00792)	-0.00287 (0.00703)	0.00427* (0.00256)
Industry	0.0598*** (0.00935)	0.0594*** (0.00895)	-0.00129 (0.00162)
Services	0.143*** (0.00689)	0.139*** (0.00690)	0.00230* (0.00128)
Living together(Ms) Re: married	0.0376*** (0.00830)	0.0295*** (0.00813)	0.00271 (0.00204)
Divorced/separated	0.0418*** (0.0149)	0.0215 (0.0146)	0.0172*** (0.00606)
Single	0.00385 (0.00787)	0.00173 (0.00723)	-0.000288 (0.00150)
Widow/widower	-0.0218 (0.0138)	-0.0236* (0.0135)	0.000184 (0.00345)
Pseudo R^2	0.1806	0.1727	
Observations	22,676	22,676	
Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1			

Data source: RLFS, August 2018

4.3 Results and discussion

Choice of migration decision can be explained positively by:

- The average marginal effect of female to migration decision is positive: 0.0268, this means that the probability of deciding to migrate is on average about 2.6% points greater for female than males. This finding is in line with the finding of Camlin S.C. et al (2014) that women are more likely to migrate into the area than men, and men more likely to out-migrate.
- One year of increase in schooling years leads a 0.004 increase in the probability of deciding to migrate. Means that increase in schooling years increasing the probability of deciding to migrate. This is in the same line with the findings from (RA Margo, 1988 and IZA, 2017).
- Being employed in the industry increases on average the probability of deciding to migrate by 5.9% greater than jobless persons. While being employed in services increases on average the probability of deciding to migrate by 14.3% more than jobless persons.
- Living together increases on average the probability of deciding to migrate by 3.8% more than married persons while being separated or divorced increases the probability of deciding to migrate by 4.2% more than married persons. This finding is in line with the findings from Govert & Stijn (2012). The study conducted by Feijten & Van Ham (2007), revealed that individuals who experienced separation move more often than do steady singles and people in intact couple relationships, they are less likely to move over long distances, and they move more often to cities than people in intact couple relationships.

Choice of migration decision can be explained negatively by:

- Household size decreases on average the probability of deciding to migrate by 0.021. Means that as household size became a big lead to a decrease in the probability of deciding to migrate.
- Residing in a rural area reduces on average the probability of deciding to migrate by 18.5% less than urban people.
- As age increases, reduce on average the probability of deciding to migrate by 0.0099. Means that as an individual became aged, the probability of deciding to migrate lessened. This result is in line with Anzelika Zaiceva (2014) that ageing may reduce migration as older people tend to migrate less than young.

Choice of internal migration destination can be explained positively by:

- Being a female increase the probability of choosing internal migration by 3% greater than being male. Means that females have a high probability of choosing to migrate internally compared to male.
- One year of increase in schooling years increases the probability of choosing internal migration by 0.0024.
- Being employed in industry sector increase the probability of choosing internal migration by 5.9% greater than jobless people. While being employed in services increases the probability of choosing internal migration by 13.9% greater than those who are jobless.
- Living together increases the probability of choosing to migrate internally by 3% greater than being married legally.

Choice of internal migration destination can be explained negatively by:

- As the household size increases lead to the probability of choosing internal migration to decrease by 0.020. it is not in the same line with findings from Bratti M, et al (2017) and Ghosh et al (2019) found that Family members serve as important geographical attractors to each other through the life course.
- One year of increase on individual ages decreases the probability of choosing internal migration by 0.009
- Residing in a rural area decreases the probability of choosing internal migration by 16.8% greater than residing in the urban area.

Choice of international migration destination can be explained positively by:

- One year of increase in schooling years increases the probability of choosing international migration by 0.001.
- Being separated or divorced increases the probability of choosing international migration by 1.7% greater than being married legally.

Choice of international migration destination can be explained negatively by:

- As the household size increases lead to the probability of choosing international migration to decrease by 0.001.
- Residing in a rural area decreases the probability of choosing international migration by 1.2% greater than residing in the urban area.

4.4 Limitations

However, our study provides a comprehensive overview of the best population-based data available in August 2018. There are a set of limitations to be considered since it is based on the secondary analysis. RLFS data only includes families living in households; it omits potentially relevant, mobile groups such as homeless, refugee, institutionalized people, which may bias our results towards an underestimate of migration estimates. There are limitations on wealth index, and other household based information such owned land and weather family is renting a house or not. There is not full information for individual migration history. RLFS consider only the two last movements. Additionally, there are no social network characteristics in the survey. The Authors used only the available data in RLFS to find out the factors associated with migration decision and destination choices in Rwanda.

5. CONCLUSION

In this study, the determinants of internal migration in Rwanda, the results show that the coefficient of poverty variable found negative as consistent with the literature. This finding suggests that migration movements are still one of the main strategies against poverty. Additionally, an increase in the unemployed and the unbalanced distribution of the unemployed population among the regions is one of the most fundamental problems of the developing countries as it leads to migration.

Another important point to raise is that Rwanda's internal migration changes patterns depending on the changing circumstances.

This statement is supported by migration movements from the Northern and Western parts of the country to the Eastern province recorded in the early 2000s and the recent migration movements from the East to the Northern part of the country.

Based on the results of this paper, the government should accelerate the process of reinforcing secondary cities in order to curb the disparity of opportunities between regions. This will in turn reduce differences in income inequality and development levels between districts and provinces.

With regards to international migration, the study has found out that not many Rwandan residents are migrating abroad. This can be explained by the tough regulations (paperwork, financial resources, etc) related to international migration.

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