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MIGRATION DECISIONS AMONG RURAL HOUSEHOLDS IN RWANDA: WHAT DOES THE PUSH-AND-PULL MODEL REVEAL?

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ABSTRACT

A country economic status is strongly linked to the transition of its population from one area to another. This, because labor and other forms of migration, has a two-fold advantage: (I) resourcing the targeted location by skilled labor force, and (II) improving migrant households' livelihoods by lowering the vulnerability level. This research aimed at understanding the factors affecting migration decisions among rural households in Rwanda. Data on internal migration were collected in 5033 rural households in 2016/2017 as a part of the fifth nation-wide cross-sectional survey on the Households Living Conditions, and analyzed using the binary logistic regression model. The major findings showed that internal migration was higher in Southern (31.9%) and Western (24.3%) provinces, where official reports pointed out a high level of poverty. The lower rate was observed in Kigali City (3.5%) which was actually considered as richest area and the most internal migration 'pull factors' (jobs and other livelihoods opportunities) offering zone. Results also revealed that, on one hand, being from a rural area, the age, having a large household size, having advanced education level, and being an female household head were the '*push factors*' increasing by around 30% and more the probability of deciding to migrate to another region. On the other hand, owning a land and being reach decreased the likelihood of moving to other zones. This leads to affirm that employment opportunity and availability of diversified livelihoods sources in receiving regions constitute the main '*pull factors*' of migration decisions at rural household level. In light of these findings, it is recommended to (I) ensure more balanced regional growth and opportunities for increased access to off-farm employment for a larger proportion of the rural population and (II) carry out a study on the effects of migration on the livelihoods of migrant-sending households in order to make a thorough and refined situational analysis.

Keywords: *Internal migration, Pull factors, Push factors, Rwanda.*

INTRODUCTION

Rwanda is a landlocked country with an area of 26,338 km^2 and an estimated average population density[1] of 467 and 2,535 inhabitants per km² in rural and urban areas respectively in 2017 (NISR, 2018a). It is ranked among the most densely populated countries in the world. The poverty level has slightly decreased from 39.1 percent to 38.2 percent of the population (NISR, 2018b). In Rwanda, disparities in living standards between lagging and leading areas, or between rural and urban areas, are substantial, and largely correspond with disparities in economic density (World Bank, 2017). The poverty trend report by NISR (2016) reveals that poverty is far lower in urban than in rural areas and almost three times as high as urban poverty and its rate in Kigali is half as high as elsewhere in Rwanda. In 2014, poverty rates in the poorest district were four times higher than poverty in the most economically dynamic district, and poverty in rural areas was twice the rate in urban areas (World Bank, 2017). Services and industries employ only roughly 20 percent of the population, and the primary sector remains the engine of economic growth in Rwanda providing more than 70% of exports in value (Musabanganji, 2017) and accounting for 31% of the Gross Domestic Product (GDP) (NISR, 2018a). For many years, Rwanda has been aware of the role of structural transformation to achieve its objective of promoting macroeconomic stability and wealth creation to reduce aid dependency (MINECOFIN, 2013). This is certified by a series of structural changes implemented since 2000s to fuel the country's ambitions for sustainable economic development advocated by the long-term socio-economic development program known as 'Vision 2020' and subsequent poverty reduction strategies and programs. This has been followed by a series of phenomena within the Rwandan society, including rural-urban migration (World Bank, 2017), and a decrease in poverty and extreme poverty levels especially in rural areas across the country throughout the years (NISR, 2018b). In Rwanda, migration is encouraged by strategic programs that have been put in place in line with the national and regional commitments regarding local and regional free movement of people. It is perceived as a triple win effect due to its far-reaching potential to enhance migrants' wellbeing, while contributing to the development of their communities of origin and destination (IOM, 2015). Rwandan government believes that skilled migrants greatly contribute to national economic development through knowledge transfer especially in skilled labor-demanding sectors made easy by easing local and international movement of highly skilled workforce (MINECOFIN, 2013). Ultimately, labor and other forms of migration play an important role in improving migrants' households' livelihoods by increasing assets, addressing livelihoods challenges and then lowering the vulnerability level. According to Patnaik, Satpathy and Mandal (2014), migration, permanent in nature or temporary, is a physical shifting of an employee or work force from one place to other and it is characterized by various internal dynamic. The decision of household's members to leave their familiar surroundings is due to communities'

[1] These are the 2017 medium scenario projections by the National Institute of Statistics of Rwanda based on 4th Population and Housing Census Projections.

inability to provide physical protection from attack or abuse or to guarantee good public-service delivery and governance at the local and national level, a certain business investment environment, or high employment (Mansoor and Quillin, 2007). In addition, it is asserted by NISR (2016) that the migration of workers from rural to urban areas, from agriculture and other labor-intensive primary activities to industry and services is a phenomenon that is more likely to happen in the course of economic development. In the case of Rwanda, NISR (2014) reveals that about 7 percent of rural dwellers and 23 percent of urban dwellers were recent internal migrants. This is resulting from observed economic growth, rising education levels, and improvements in physical transport infrastructure, combined with increased population pressure on arable land (World Bank, 2017). Scholars (see for instance, Ibourk (2016)) have documented the fact that migration is becoming an increasingly difficult phenomenon to identify and understand. This is the reason behind the observed increase of the studies analyzing the migration motivations and intentions all over the world (Ibourk, 2016, Yorimitsu, 1985). However, in Rwanda, such studies are scarce, especially those intended to understand the factors underlying migration decisions in farm households. Migration is a recent phenomenon in Rwanda (World Bank, 2017), and therefore, deserves particular attention. Thus, this study will contribute in fulfilling this gap by bringing in a thorough understanding of the factors affecting migration decisions among rural households in Rwanda. This study intends to measure the extent to which push and pull factors are affecting the migration decisions in rural Rwanda.

MATERIALS AND METHODS

The study used the fifth integrated household living conditions survey (EICV 5) cross-sectional data collected from October 2016 to October 2017 by the National Institute of Statistics of Rwanda (NISR). The study will use a sample size of 5,035 rural households. Data collection used an open-ended structured questionnaire and the analysis selected only variables highlighting the main features pertaining to the objective of the study. With the aim of assessing the factors affecting migration decisions at household level, the binomial logistic regression model with a dichotomous dependent variable Y_i with two values, 1 (when a household member has decided to migrate) or 0 (otherwise), data will be analyzed using the binomial logistic regression model (see Hosmer and Lemeshew, 1989). The set X of p explanatory variables (made of both push and pull characteristics) is made by continuous and categorical/dichotomous variables. The probability that a household i has decided to migrate to another area is given by the function: $\pi_i(X) = \frac{e^{\beta_0+\beta_1 X_{i1}+\beta_2 X_{i2}+...+\beta_p X_{ip}}}{1+e^{\beta_0+\beta_1 X_{i1}+\beta_2 X_{i2}+...+\beta_p X_{ip}}}$ (1), and then $\frac{\pi_i}{1-\pi_i}$ is the odds in favor of the household having decided to migrate. Hence, by applying the natural logarithm on both sides of (1) the logit model is then written as:

$\ln\left(\frac{\pi_i}{1-\pi_i}\right) = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + ... + \beta_p X_{ip}$ (2). Equation (2) is estimated by the maximum likelihood estimation method and the basic assumptions of normality, linearity, and homogeneity of variance for the independent variables are not a requirement.

RESULTS AND DISCUSSIONS

A country's economic status is strongly linked to the transition of its population from one area to another. According to Kainth (2010), uneven economic development, inter-regional disparities and differences in living standards are among the reasons behind migration phenomenon. In this regard, Simpson (2017) argues that if income is highly volatile, workers may be incentivized to search for more stable income streams, especially in countries where credit markets are nonexistent or incomplete. In search of understanding the determinants of migration decision, the literature distinguish two factors of migration, namely, push or pull factor. The *pull* factors constitutes a set of conditions that propel households' members to leave their original living settings, while *push* factors are conditions that entice people to enter a destination country (Simpson, 2017; Ishtiaque and Ullah, 2013; Kainth, 2010; Thet, n.d.). This approach of explaining the driving factors of international migration can easily be applied to inter-regional or intra-country migration analysis. It is based on a basic push-and-pull model (Mansoor and Quillin, 2007) made by economic factors, demographic pressures on land and unemployment status ('push factors') in the sending regions, and natural resources (of which, water and land), higher wages and labor demand, and family reunification ('pull factors') in receiving regions offering better-off livelihoods (Mansoor and Quillin, 2007; Thet, n.d.; with an emphasis of the author). This push-and-pull model will guided the migration decisions analysis conducted in this study especially its parts concerning the push and pull factors by analyzing their level of impact on households' migration decisions. The descriptive analysis of the database under study reveals that Western, Southern and Eastern rural provinces have registered more than 20 percent each in the total internal migrations flows. This let understand that rural areas constitute the sending zones while urban zones are the receiving locations. The Southern province is the one with an increased rate of migrants to others zones with 32.2 percent followed with the Western province with 24.3% and then the Eastern province with 201.2 percent. The reason behind the high rate of migrants in the two first provinces may be the high prevalence of poverty and extreme poverty in those regions. This is line with the findings from statistical analysis which showed that being in a higher socio-economic category is decreasing by 21.5 percent the probability of migrating while being in rural area increase it by 30.5 percent. This empirical finding supports the assertion by FAO (2016) that migration serves as an important strategy for improving rural households' livelihoods as rural people moves to urban areas for wages and other

services. The results show that an increase in one level education is multiplying the likelihood of migrating from home region to another by 1.36 respectively.

Table 1: Binomial Logistic Regression Model: Estimation Results

	Coeff.	St. Err.	t-value	p-value	Sig	Exp (β)
Age	0.011	0.004	3.19	0.001	***	1.011
Sex	0.309	0.086	3.58	0.000	***	1.362
Education	0.208	0.042	4.94	0.000	***	1.231
Household size	0.233	0.023	9.97	0.000	***	1.262
Ratio aged less than 6 years	-0.270	0.353	-0.77	0.444		0.763
Ratio aged 7-15 years	0.092	0.288	0.32	0.749		1.096
Ratio aged 16-60 years	0.893	0.226	3.94	0.000	***	2.442
Agricultural income	0.000	0.000	0.36	0.718		1.000
Land size	0.000	0.000	-1.30	0.193		1.000
Land ownership	-0.272	0.073	-3.72	0.000	***	0.762
Livestock	0.005	0.004	1.33	0.183		1.005
House ownership	-0.036	0.132	-0.28	0.783		0.965
Loan access	0.588	0.070	8.42	0.000	***	1.800
Poverty status	-0.215	0.078	-2.77	0.006	***	0.807
Rural	0.305	0.111	2.74	0.006	***	1.357
Constant	-3.294	0.389	-8.46	0.000	***	0.037

Mean dependent var	0.51	SD dependent var	0.50
Pseudo r-squared	0.08	Number of obs	5035
Chi-square	436.19	Prob > chi2	0.00
Akaike crit. (AIC)	6436.16	Bayesian crit. (BIC)	6586.22

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

This appears very intuitive and evident for a literate household member as, according to Jiang (2014), high level of education eases internal human capital migration by providing knowledge and skills required in areas full of employment opportunities. In addition, when the household becomes large, adults or those who are able to work will tend to leave the family circle to find out an income generating opportunity to start their own family or become independent. This provides an explanation to the increase in the probability of migrating by the age, the size of the household and the ratio of household members aged between 16 and 60 years increases (see Table 1). Surprisingly, the results reveal that being a female household head multiplies by 1.36 the likelihood of migrating. This finding is in line with the statement by Awumbila (2015) and Awumbila & Ardayfio-Schandorf (2008) that 'migration feminization' is taking place in Ghana. This is not only occurring in Ghana but elsewhere in developing world (Christophe, G. & de

Loenzien, 2014) and particularly in Rwanda as the main reason behind this increase in number of women in migration streams is the high level of poverty in single mothers households (with a non negligible proportion) and female-headed migrants' home families leading them to leave for unskilled occupations such as domestic workers and street vendors (for fruits, clothes, beverages, electronic accessories, …) and bricklayer-assistants mainly available in cities and towns. This trend of female migrants out number male migrants is a recent phenomenon which needs much attention (but out of the scope of this study) to elucidate associated risks and inequalities that affect the female decision's to migrate in sending and receiving areas.

The table 1 also reports that upgrading to a high socio-economic category and land holding decrease the probability migrating. This may be explained by the fact that upgrading to high socio-economic group depend largely on the increase of income and assets endowment at household level. In this case, household members are led to remain in their families and search for ways to value the available assets in their neighborhood.

However, the estimated coefficients on livestock, agriculture income, the land size, the ratio of household members aged less than 6 years and aged between 7 and 15 years, and house ownership are not statistically significant and were not found to be factors affecting the migration decision at household level. These results are not in line with those found in the literature (for example, Gavonel, 2017; Herrera & Sahn, 2013; Peker, 2004). On one hand, this may find its explanation in the high level of school enrolment in rural areas (MINEDUC, 2017), and young people are not concerned by migration issues as they are left at home with their mother or elder siblings when the father or mother leaves for another region in search for livelihoods diversification opportunity. On the other hand, livestock numbers (mainly small livestock) appear to be relatively lower in rural areas and most farmers average less than half a hectare per rural household.

CONCLUSION

This empirical research studied the determinants of migration decisions in rural households of Rwanda. The literature review showed that factors affecting rural households' decision to migrate can be categorized into two main groups: *'push* and *pull factors*'. The results revealed that being a female household head, being an adult from rural areas, an increased number of household size, an advanced level of education are the push factors increasing by around 30% and more the probability of deciding to migrate to another region. On the other hand, owning a land and being reach decreased the likelihood of moving to other zones. This leads to affirm that employment opportunity and availability of diversified livelihoods sources in receiving regions constitute the main pull factors of migration decisions at rural household level. In light of these findings, it is recommended to (I) ensure more balanced regional growth and opportunities for increased access to off-farm employment for a larger proportion of the rural population and (II) carry out a

study on the effects of migration on the livelihoods of migrant-sending households in order to make a thorough and refined situational analysis.

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