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**Internal mobility and youth entrepreneurship
in the Democratic Republic of the Congo**

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Internal mobility and youth entrepreneurship in Congo

Abstract

This paper highlights the relationship between the mobility of young people in the Democratic Republic of Congo (DRC) and their involvement in entrepreneurship. Despite the destruction of transport infrastructure during the long period of war, the DRC is characterized by high internal mobility that exceeds 20%, particularly among the people whose age ranges between 15 and 30 years. Attracted by opportunities in some regions of the country, these migrants are likely to be oriented towards entrepreneurial activities in their new locations. Using data from the 1-2-3 survey, conducted in 2005 by the National Institute of Statistics of the Congo (INS) in collaboration with the Economic and Statistical Observatory of Sub-Saharan Africa (AFRISTAT), this paper draws the profile of young internal migrants and highlights the determinants of the decision to migrate. It identifies preferred geographical destination of migrants, and establishes the link between the characteristics of young migrants and their commitment to entrepreneurial activity.

JEL: J61; J24; J31

Keywords: Geographic mobility, migration, youth employment, entrepreneurship, DR Congo

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List of abbreviations

AfDB	African Development Bank
ILO	International Labour Organization
SPGPR	Strategic Paper for Growth and Poverty Reduction (Document de Croissance et de Stratégie de Réduction de Pauvreté)
FEC	Fédération des Entreprises du Congo
INS	Institut National de la Statistique
GDP	Gross Domestic Product
SME	Small and Medium Enterprise
UNDP	United Nations Development Program
PPP	Purchasing power parity
DRC	Democratic Republic of Congo

Executive Summary

Since 1994, the Democratic Republic of Congo (DRC) has experienced a period of major political turbulence characterized by wars (1996 and 1998) and rebellions in its different provinces. With the return of relative peace as of 2001, the Congolese economy returned to growth, but with a high level of unemployment, in particular among the youth. As the conditions of entering into different local labour markets are less favourable to the youth, different insertion strategies have been adopted including internal mobility for professional motives. This is how the internal migration rate of the active population accounted for 20% of the total in 2005, largely comprised of youth under the age of 35 years (INS, 2006).

Given the difficulties encountered by youth on the labour market and the propensity to migrate, which characterizes this particular group of the productive force, the objective of this study is to analyze the link between internal mobility and the probability of setting up as an entrepreneur. Three sub-objectives are attached to this main objective: draw up the profile of young migrant entrepreneurs, establish a relationship between the migration status of youth and their involvement in entrepreneurship, and determine the most preferred destination regions of these young migrants.

The methodology adopted is based on the DIAL 1-2-3- survey data administered by the Congolese Ministry of Planning and the National Institute of Statistics in partnership with the Economic and Statistical Observatory of Sub-Saharan Africa (AFRISTAT). On the one hand, a descriptive analysis was conducted in order to find the statistical linkages between the decision to migrate and involvement in entrepreneurship. On the other hand, a multivariate econometric analysis mostly based on the probit approach was performed in order to find the different determinants of a youth setting up an entrepreneurial activity. The propensity score matching method (PSM), with the goal of evaluating the robustness of the results obtained from the two approaches mentioned above, was used.

The statistical and econometric analyses confirm a positive link between internal migration and setting up as an entrepreneur (independent or employer). Most of these youth are active in the informal sector where they are involved in activities which are

less capital intensive. Being involved in entrepreneurial activities is influenced by many variables, the most important of which is education. Youth having completed a secondary or post-secondary education are more attracted to entrepreneurship in the informal sector compared to those who have not reached this level. This is because these higher levels of human capital are better remunerated in the formal sector.

The macroeconomic context in which young entrepreneurs work affects their performance. In spite of the important contribution of informal entrepreneurship to the overall national income, the financial system remains less opened to entrepreneurs and insufficient to respond to the capital needs to expand their activities. If access to credit were extended to them, growth in their activities could improve not only their situation, but also that of the economy by transition of these informal production units into the formal sector, and could also indirectly lead to employment creation (Henrard & Destré, 2004). One of the means to promote the development of youth entrepreneurship and their independence in their region of origin, as well as in the destination region, would be the implementation of financing and accompaniment structures for production units created by these young people. This could enable an upturn of the national economy which could be equally distributed in the country given that youth would not have to migrate to be able to enter into entrepreneurship. To this, we can add the necessity to support the education system as much as possible in order to be more active in encouraging youth to complete at least a secondary level of education.

I. Introduction

1.1 Context of study

The migration phenomenon is at the centre of preoccupations of economic policymakers and academics. This is due to the importance of migration flows observed between countries and the concerns of local populations with regard to these flows, in particular with regard to employment (Friedberg & Hunt, 1995; Gilles, 2009). Yet, compared to internal migration, international mobility remains very limited; while international migration is expanding, greater internal mobility continues to be observed although the latter has not drawn as much attention as the former, probably due to the lack of statistical data (Skeldon, 2009; Bao, Bovarsson, Örn, Hou & Zhao, 2007).

Nowadays, there is an increasing interest in internal migration due to its intensity and its influence on migrants' situations and their family, as well as on the labour market (White, 2009; Ackah & Medvedev, 2012; Mberu, 2005; Mitra, 2010; Knight & Gunatilaka, 2010; Switek, 2014). Despite this new orientation, very little emphasis has been placed on the link between internal migration and the decision to engage in entrepreneurial activity.

Most studies on internal migration focus on its main determinants and how this decision affects migrants' income. These studies relate the decision to migrate with the labour market. Employment and wage opportunities are also conferred a central role, following Hicks (1932), for whom net economic advantages are the main factors behind migration. However, apart from the exception of studies on international migration, very little research dealing with internal migration consider business opportunities and economic advantages noted by Hicks. As such, they do not offer the possibility of linking internal migration with entrepreneurship.

One of the major problems facing a number of African countries is the inability of their economies to reduce unemployment, particularly that of youth.¹ For a continent

¹ The definition of youth can vary by country. Officially, youth are counted as persons between 14 and 24 years. In some countries like Burundi, the statistics on youth are for those aged 15-30 years, while Uganda, for example, considers youth as being up to the age of 35 years.

with over half its population comprised of youth, most of them being under the age of 21 and two-thirds under 30 years of age, the consequences of such a situation can be enormous to the point of weighing against the momentum of growth observed on the continent over the last decade.²

In such a context, youth entrepreneurship is found to be an effective way for absorbing the unused productive forces of the economy. While for the vast majority, activities started by youth are primarily in the informal sector, they contribute to employment creation and economic growth. For instance, in West Africa, it was shown that 40% of salaried employment was created by SMEs (AfDB, 2012).

This is the general situation with regard to unemployment and its concentration among youth across the continent, and the DRC is not an exception. Thus, this paper examines the relationship between internal mobility of youth and seizing entrepreneurial activities in the DRC.

1.2. Research problem

DRC is one of the poorest countries on the planet. According to the Central Bank of Congo (2010), GDP per capita rose from 79.3USD in 2002 to 91USD in 2006 and then to 100.5USD in 2010. Despite average real GDP growth and demographic growth estimated at 5.6% and 3.1% respectively over the 2006-2010 period, poverty affects 7 in 10 households (DRC Ministry of Planning, 2012). According to the Central Bank of Congo (2011), unemployment was 59% (DRC Ministry of Planning, 2012). The National Institute of Statistics (INS) (2005) suggests that it was 6.7%³ in the same year. According to the African Development Bank (2012), the number of job seekers continued to increase in 2013. Seeing current difficulties faced by the country, the government of

² According to AfDB (2012), while unemployment undoubtedly affects both youth and adults on the continents, the 15 -24 years category which comprises more than 40% of the labour force is the most affected, with an unemployment rate of up to 60% in this group, which is double the rate of those over the age of 30 years.

³ Unemployment rate according to the ILO definition.

DRC is not able to provide employment for current or future unemployment, although in the second Strategic Paper on Growth and Poverty Reduction (SPGPR II) the Ministry of Planning foresees annual job creation of one million positions per year as of 2012, a difficult objective to achieve. Currently, only 100 out of 9000 youth exiting Congolese universities find a job (AfDB, 2012).

A report in 2007 by the Federation of Enterprises of the Congo (FEC), makes an inventory of firms in the 11 provinces of the country, the constraints they face and the challenges to address. This report shows that the state of the economy as observed from the 1990s up until 2006 was, in particular, due to the private domestic initiative through the creation of SMEs, microenterprise and informal enterprise (FEC, 2007). While being widely affected by the situation described above, the DRC is comprised of provinces with very different situations in terms of their available resources; some provinces are better equipped than others. These differences in productive assets also lead to differences in business opportunities and productive capacity. This disparity⁴ results in differences in provincial GDP as reported in Table 1. According to the INS (2005) and Ngoie & Lelu (2010), these disparities between provinces model the outcomes of populations, which adopt migratory behaviour in order to seize employment or business opportunities.

1.3. Research questions and objectives

The description above reflects the extent of unemployment and underemployment in the DRC, both of which are consequences of the decline of the economic and political situation experienced by the country over the last two decades. In response to this situation, internal migration can be explained as a natural form of reallocation of the active population across the provinces. Thus, given the fact that people aged 15-

⁴ Recognizing the importance of these disparities and their impact on wealth creation by province, the constitution of 18 February 2006 has established, in article 181, an equalization fund such that the wealthiest provinces contribute to development of poorer provinces by attributing 10% of their receipts to the national government for regional distribution.

20 years in the DRC are the most mobile and the most represented in entrepreneurial activity (more than 80% according to INS, 2005), this study aims to respond to the following question: "To what extent does internal mobility influence entry of youth into entrepreneurship?" The main objective is then to focus on the role of internal mobility on entry of youth entrepreneurship in the DRC. More explicitly, it is to:

- Construct a profile of internal youth migration and the determinants of the decision to migrate;
- Determine the preferred destination regions of these young migrants;
- Establish the link between migratory status of youth and their entrepreneurial involvement.

II. Literature review

Mobility, in general, and that of workers is associated with several outcomes from the perspective of economic growth. For instance, Sjaastad (1962) presents it as a sort of human capital investment, since it can serve as a means of increasing the capacity to achieve personal gains, and is thus akin to a sort of investment in human capital. It is beneficial to both the region of origin and the host region when it facilitates an efficient allocation of workers between regions (Krieg, 1997). This theme has drawn the attention of many studies, the majority of which deal with international migration and its consequences on the labour market in the host country (Miniti & Lévesque, 2008; Bodvarsson & den Berg, 2009; Skeldon 2009, 2010; Wahba & Zenou 2012). Internal migration has been relegated to secondary importance while flows registered in many countries, both developed and under-developed, continue to experience ongoing increases in migration (Skeldon, 2009).

It is the contribution of Todaro (1969) which appeared a few years after the seminal article of Sjaastad (1962), which launched the debate on internal mobility via a probabilistic model of rural-urban migration in developing countries. Todaro (1969) and Harris and Todaro (1970) show that the differences in wages and the probability of finding employment in the destination region justify the decision to migrate. One of the main assumptions of this model concerns the segmentation of urban labour into the formal and informal labour market, two sectors which operate differently in a different type of labour market. To finance their search for employment in the formal sector, according to Todaro, the migrants often pass through the informal sector. Thus, despite an elevated unemployment rate in urban areas, the existence of an informal sector and the probability of finding employment explain the migratory flows from rural areas towards urban centres in developing countries. As a result, unemployment shows up in this model as frictional unemployment or the search for work. In line with this study, much research investigated the determinants of internal migration as well as a number of its outcomes.

Banerjee (1983) tried to verify the suitability of this model, in particular the assumption of market segmentation. His study does not validate all the hypotheses of the probabilistic model for India. In deciding to migrate, the migrants may direct their interest to opportunities offered in one or another of the sectors. As a result, they do not always consider the informal sector as a transitory sector which enables them to finance their search for employment in the urban formal sector. Nevertheless, the author finds that it is in fact employment opportunities at their destination and the wage differentials which induce the migration; some with employment arranged in advance, prior to departure from their region of origin, with certainty of having employment in their destination region. This study highlights that human capital, an essential factor in the migration decision, is remunerated similarly in the formal and informal sector. While employment opportunities guide the migration decision of the individual, the decision to create an enterprise are often not accounted for. It is only very recently that we have started to become interested in the relationship between return migration and entrepreneurship.

Many studies on entrepreneurship have been performed in recent years. Most of them have been geared towards capturing the entrepreneurial decision in terms of occupational choice. Regardless of whether the focus is more at the microeconomic or macroeconomic level, these studies all base their neo-classical microeconomic framework on utility maximization (Miniti & Lévesque, 2008). This considers entrepreneurship as a decision to allocate human capital in terms of balancing the opportunity cost of doing so with a certain probability of economic return. For example, Parker (2004) indicates that entrepreneurship is one of many occupational choices that an individual may perform when he/she determines that it maximizes his/her utility.

Many studies have been produced in this line of research; some of them seek to draw a link between entrepreneurship and the allocation of talents and personal characteristics in addition to other social capital (for example, Bauernschuster, Falck & Heblich, 2010; Wahba & Zenou, 2012). More recently, other studies have worked on the relationship between entrepreneurship (Batista, Catia & Umblijis, 2013; Black & Castaldo, 2009; Levie, 2007, etc.). In all of this research, entrepreneurship is generally addressed without accounting for age categories. However, the distinction by gender has attracted considerable interest (see, for example, Kudzaishe and Fatoki., 2010). To our knowledge, only Blanchflower and Oswald (2007) are interested in youth entrepreneurship in OECD countries. In Africa, studies on youth entrepreneurship are nearly non-existent. Moreover, those which exist rarely introduce the distinction between the different types of firms created, for example, micro firms in services, trade or industry. However, this classification makes it possible to isolate the effect on employment creation and the contribution to value added, and the accumulation of wealth of each of them. It also makes it possible deal with the basic motivations behind the initiative of entering into entrepreneurship.

Studies which associate migration and entrepreneurship are mostly focused on return migration. They assume that migration makes it possible to bypass the constraints linked to credit access which hinder entrepreneurial ambitions. Following Bodvarson and van den Berg (2009), internal migration may be associated with entrepreneurship. These authors divide migration into three categories, according to

the role they play in the economy: migrant labour supplier, migrant consumer of amenities, and migrant producer of goods and services.

The theory of the migrant producer, which builds on the idea that households produce different amounts of goods and services, has not been extensively dealt with in the literature. Complementary to the first and second category, the literature supposes that the household uses both human and physical capital in producing goods and services. In this sense, the destination choice is motivated by the desire to maximize utility and/or to minimize the cost of producing goods and services. This situation is consistent with the experience of countries in Asia and China, in particular where it has been effectively demonstrated that an increasing share of the concentration of private initiative (entrepreneurship) of a certain (coastal) region is not the result of their strong growth potential, but is rather the cause of that potential. Thus, while studies on internal migration in Africa (see, for example, Ackah & Medvedev, 2012; Achanfuo-Yeboah, 1993; Zohry, 2008) are mostly focused on the effects of migration decision on household wellbeing, analyzing its relationship with the commitment for an entrepreneurial activity is of the nature to provide more information for policymakers not only in terms of stimulation to economic growth, but also in terms of unemployment reduction. However, while entrepreneurship has drawn the attention of researchers in recent years, very few studies have dealt with youth entrepreneurship. Studies on youth entrepreneurship are among those which are most involved in entrepreneurial activity (AfDB, 2012).

For the DRC, among studies dealing with entrepreneurship, we can cite Bangobango-Lingo (2010), Bitemo (2008) and Kamavuako-Diwavova (2009). In terms of migration, the national profile established by Ngoie & Lelu (2010) remains the most useful.

Bitemo (2008) studies the factors determining the transition of microenterprise into SMEs in the West of the DRC. They find two groups of factors which influence this transition; factors which are internal to the firm (type, gender, level of education of the entrepreneur, initial size, etc.) and factors linked to the environment (sector of activity of the enterprise, cost of formalizing activities, etc.). Bangobango-Lingo (2010), in a recent study, analyzes the role played by entrepreneurship in the growth process and

the influence of structural adjustment policies on entrepreneurial dynamics in the DRC. He shows that the unfavourable sociopolitical environment of the 1990s and 2000s decade did not permit entrepreneurship to play its role. Meanwhile, Kamavuako-Diwavova (2009) is interested in factors which underlie entrepreneurial success among ethnic minorities (Chinese and Lebanese immigrants). He reports that involvement in entrepreneurship is not the result of labour market discrimination, but instead results from drawing profit from business opportunities identified in the host environment. Moreover, he shows that the ethnic network serves as a source of information (identification of opportunities) and contributes to the learning context of the entrepreneurial occupation in addition to sourcing. Meanwhile, the non-ethnic network constitutes the principal source of workers. Studies interested in entrepreneurship in the DRC are fairly general in scope. None of them deal with the specific case of youth entrepreneurship, and this is despite the stated interest for entrepreneurship within this group.

Despite the potential that youth entrepreneurship represents in driving growth and poverty reduction, very little is known about the factors which motivate youth entrepreneurship, particularly for developing countries. Yet, identifying these factors as well as the environment which motivates and promotes the creation of small and medium enterprise appears necessary from the perspective of efficient allocation of both financial and human resources (Demirgüç-Kunt, Klapper and Panos, 2011).

III. Methodology and data

3.1. Migration decision models

Placing migration in the context of the labour market, Sjaastad's (1962) approach has been adopted by many researchers to study an individual's decision to migrate and

places migration in a position to be approached as akin to an investment in human capital which entails costs and from which a revenue stream is expected. The objective of utility maximization is achieved by maximizing net revenue (Bodvarson & Van den Berg, 2009). Thus, regions presenting opportunities which allow the achievement of this objective will attract more migrants. For instance, Jayet (1996) indicates that the factors which determine the migration decision include individual characteristics (sex, age, education, etc.) and place of origin and destination, in particular the labour market conditions.

Thus, this framework is adopted to narrow in on the factors which influence the probability that a young person will decide to migrate, that is, to change residence for professional motives and for which the duration of residence is less than or equal to 10 years in his/her new location. To account for the attractiveness for these purposes of different areas, the socioeconomic characteristics of provinces or destinations, and host regions are included among explanatory variables of the migration decision. Let the probability of migrating be defined as:

$$\Pr(M_i = 1|X) = \Pr(M_i^* > 0|X) = \Pr(\varepsilon_i > -X\beta|X) = \Phi(X\beta) = \Phi(\beta_0 + X_1\beta_1 + \dots + X_n\beta_n) \quad (1)$$

where X_i is a vector of explanatory variables, $\Phi(\cdot)$ is the cumulative distribution function and M^* the continuous latent variable associated with the decision to migrate, with:

$$M = \begin{cases} 1 & \text{if } M_i^* > 0 \text{ i.e. if the individual is a migrant} \\ 0 & \text{otherwise} \end{cases}$$

Assuming that the error term follows a normal distribution such that $\varepsilon_i \sim N(0,1)$, a probit model enables us to estimate the probability that a youth will be an internal migrant.

3.2. The effect of mobility on entrepreneurship and the recursive probit model

The effect of migration on entrepreneurship operates by softening the credit constraint as made possible as a part of a network. Woodruff and Zenteno (2007)

indicate that if the migrant network has more funds, those belonging to the network are faced with lower capital costs, which encourages their entry into entrepreneurship. Moreover, migrants may have unobservable characteristics which differentiate between non-migrants and which predispose them to enter into entrepreneurial activity.⁵ Intuitively, this can be understood when we account for the fact that, in the destination region, the migrant is more pressed than locals to succeed. In accounting for the costs faced, whether direct costs or in terms of opportunity costs, the decision to migrate is largely based on the hope of greater returns than if he/she did not migrate. Also, in the case of a certain number of developing countries, it is shown that social capital facilitates access to bank credit and entrepreneurship (Shoji, Aoyagi, Kasahara, Sawada & Ueyama, 2012). For example, in the case of Mexico, Woodruff and Zonteno (2007) show that social capital of migrants enables them to easily access credit than non-migrants. In the case of DRC, such a perspective has not yet been analyzed. But accounting for the strong diversity of ethnic groups in DRC, it would very much make sense to do so (Laszlo & Santo, 2009).

Following Woodruff and Zonteno (2007) and Wahba and Zénou (2012), modelling the effect of the mobility decision on involvement in entrepreneurship is dealt with using a recursive probit model⁶:

$$\begin{cases} y_i^* = \beta'X_i + \alpha M_i + \varepsilon_i \\ M_i^* = \gamma'Z_i + u_i \end{cases} \quad (2)$$

where M_i^* is as defined in equation (1) and y_i^* is an unobserved latent variable relating to the decision to work as an entrepreneur. It is possible to include M , the migration variable, as numbering among the explanatory variables on the right hand side of the entrepreneurship equation to explain the fact that being a migrant can influence being an entrepreneur or not. However, as highlighted by Démurger and Xu (2011, p.1852), under the assumption that all agents are rational, we can see that migrants are a self-selected category in terms of certain unobservable characteristics such as motivation or risk aversion. In effect, in the same community, some youth will

⁵ Table A1 in the appendices gives the matrices of migrations, origins and destinations of migrants in different administrative entities: city, small city and village.

⁶ Estimation of this and the choice of instruments to use in this model are as suggested by Maddala and Lee (1976).

decide to migrate while others will stay. From this perspective, it is possible to see migration as being endogenous to the decision to set up as an entrepreneur. The unobservable characteristics may at least partially explain that migrants are less risk averse than non-migrants, and due to this, are more inclined to become entrepreneurs. While any unobservable heterogeneity has a direct influence on both decisions (to migrate and to become entrepreneurs), the migration variable must be correlated with the error term ε_i in the entrepreneur equation in the system of equations in (2). In other words, migration is basically endogenous in the sample of data that we use. As suggested by Greene (2012, p.746), unobserved heterogeneity can be resolved using a recursive bivariate probit model. Formally, y_i is defined as follows:
$$y_i = \begin{cases} 1 & \text{if } y_i^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

Relation (2) defines the probability that an internal migrant becomes an entrepreneur, defined as any person who either works on his/her own account or employs a number of other persons in a production unit where he/she is the capital holder. X_i and Z_i are explanatory variables which include individual characteristics (age, sex, level of education, and above all, social capital, etc.), those linked to the family environment (number of adults in the household and their professional status, the sectors in which they evolve, father's sector of employment, etc.), and the labour market conditions (unemployment rate, growth rate, number of private enterprises in the region, etc.).

In this recursive bivariate probit model, the status of the migrant and the decision to become entrepreneur are treated independently. While from a theoretical perspective, there is no need for exclusion restrictions to assure the identification of the model parameters, some authors suggest the use of instruments in order to obtain more robust results for possible bad specifications of the fundamental distribution. Many variables are used in the literature for this effect. Wahba and Zénou (2012), for example, use the male share of adult migrants in the community or origin as an identification instrument of the decision for return migration. Based on the idea that such networks have an effect on the return migration decision which is not correlated with the error term on the decision in terms of occupational choice, Démurger and Xu (2011) use the same proxy as an identification variable. For the same reasons and accounting for the available data, variables such as household size, the political/civil stability of the

province of origin, and the level of poverty in the province of origin of the migrant are accounted for as elements which explain the migration status, without having an effect on the migration decision, or on the decision of the migrant to become an entrepreneur in the destination province.

3.3. The effect of migration on entrepreneurship and the randomization method

To ensure the robustness of the results obtained by the models described above, and to bring out the real effect of migration on the decision to participate in the labour market as an entrepreneur, it is important to use a treatment model. In effect, estimation of the treatment effect of a group on a variable of interest, such as the migration decision, necessitates observing this decision with and without the program. In addition to the recursive probit model, we propose the use of an experimental method, such as Propensity Score Matching (see Rosenbaum & Rubin, 1983, 1985 a-b). Assume that $Y_{i,T}$ is the outcome level of individual i and T is equal to 1 if the unit is treated and 0 otherwise. A natural way to evaluate the average effect of the treatment effect on the outcome is as follows:

$$\tau|_{D=1} = E[Y_{i,1}|T = 1] - E[Y_{i,0}|T = 1] \quad (3)$$

In this expression (3), $E[Y_{i,0}|T = 1]$ is not observed. PSM is a popular approach used to perform randomization and to avoid selection bias largely based on the difference between the treatment and non-treatment groups. Primarily, this proceeds with the goal of constructing a group hypothesis, which a priori is untreated. The hypothetical group is assumed to represent a random sample of the treated group. Let $Y_{i,0}^*$ be the variable of interest of the counterfactual group. We then have:

$$E[Y_{i,0}|T = 1] = E[Y_{i,0}^*|T = 0] \quad (4)$$

The expected value of this outcome does not differ between the treated group and the counterfactual. According to Rubin (1977), if for each change in unit i we observe a vector of variables X_i and assuming that the result $Y_{i,0}$ is independent of treatment conditional on X_i ($Y_{i,0} \perp T|X_i$), while the treatment effect on the population for the treated is identified as being equal to the treatment effect of conditional covariates and

on the allocation among these treatments. Since the number of variables to link these two groups is quite large, this may turn up difficulties in drawing these links. Rosenbaum and Rubin (1983, 1985b) suggest the use of propensity scores, which are the probability that an individual will receive a treatment conditional on a set of variables, with the goal of reducing the matching dimensions to just one.

3.4 Data and definition of variables

3.4.1 Data

The data used in this study are from the 1-2-3 survey which covers all of the RDC. It was performed by the INS in collaboration with DIAL and AFRISTAT in 2004-2005. Three phases are overlapped in the 1-2-3 survey. Phase I collected information on employment (unemployment) and working conditions, the business environment and the living conditions of the population. Phase II dealt with informal production units (IPU) and phase III dealt with household consumption.

In phase I, all working age individuals found in the selected household were questioned on their professional situation and activity. The production units held by the household or a household member in this phase were covered in phase II of the survey. While phase 3 dealt with expenditures of the household unit, phases I and II were administered at the individual level such that it makes it possible to link individuals to their respective household. The data from phases I and II make it possible to verify the objectives undertaken by this research proposal.

Given the goal of this research, only individuals aged 15 to 30 years are included. This includes young migrants and non-migrants who belong to the labour force. After having removed from the sample the subjects with missing data and migrants with non-professional motives (study, family reunification, displacement from war, etc.), a sample of 10, 231 individual youth were retained. This sample is distributed as follows: 88.49% are non-migrants and 11.51% are internal migrants, that is, persons having moved residence between administrative entities for professional motives and where the duration of residence in the new location is less than or equal to 10 years. This definition

of internal migration thus refers to all persons having declared that they have voluntarily changed their place of residence for professional ends (job search), at the time of the survey. This answers questions M10 (how long have you lived here continuously?), M11 (where did you live before coming here?) and M12 (why are you here?).

Besides issues linked to personal characteristics of these individuals in the retained sample, the survey questionnaire also contains questions that make it possible to pursue the objectives of the study. Among the basic questions, we can cite: AP3, AP5 and AP6. These respectively deal with professional categories of the surveyed person, the number of individuals in the production unit directed by this person (or that they work in), and registration of the production unit with commerce registry. The income of workers and entrepreneurs is contained in questions AP13a and AP13b.

3.4.2 Definition of variables

The different estimated models and the results shown below include many variables. The emphasis is particularly on defining the three main variables: those relating to migration, entrepreneurship, and the income differential according to whether it's from entrepreneurship or labour.

Migration: an internal migrant is any person having declared, on the day of the survey, that they have changed residence, and thus, who had stayed in the new locality for less than or equal to 10 years. In terms of this definition, return migrants were excluded and those who had been in their new location for more than 10 years were grouped together with preexisting locals.

Entrepreneurship: cross-sectional data, as compared to the panel data, only permit analysis of individual behavioural dynamics. In this case, decisions to enter into or exit entrepreneurship, which are occupational decisions, have the same determinants (Henrard & Destré, 2004). Since this is no longer a matter of studying this dynamic in terms of the nature of the data available for the study, the analysis is limited to studying the choices made by individuals by isolating the influence of the migration experience

as well as the salary differential.⁷ Own-account workers and entrepreneurs are grouped together in the entrepreneur category. The own-account worker is defined in the 1-2-3 survey as a person who is only active in one profession and with no employees. Merging these two categories is dictated by the fact that own account workers are not highly represented in the sample considered, less than 1% of the total sample. For this reason, they are not considered as being a category except in the econometric estimations.

Other variables considered are education level, both age and age squared, marital status (living as a couple), the sociopolitical stability of the province of origin (conflicts in provinces), sex (sex: male), occupational status of father (entrepreneur) and area of residence (rural). Incoming migrant flow, the sector of activity of youth entrepreneurs, and the origin and destination of young migrant entrepreneurs are presented in tables 2, 3 and 4, respectively.

IV. Application and results

This section presents statistical results and their interpretation before moving on to presenting the econometric results.

4.1 Results of descriptive statistics

At this stage, we present the descriptive statistics to capture the magnitude of migration, the level of entrepreneurial activity, as well as the possible statistical links between the two in the DRC.

⁷ For salaried workers, salary income is considered, while for entrepreneurs (employers and independent workers), it is the net operational revenues. This is this share of value added received by the entrepreneur, once having deducted total wages paid to workers (if any) and indirect taxes net of subsidies (paid to the State).

Migrants, as defined above, represent approximately 20.5% of the active population in the DRC, and more than 75% are under the age of 35 years. Also, more than 80% of this group are entrepreneurs⁸ in their new location. Figure 1 represents the density curve of age upon migration. It allows observing that these youths are the group of the population most involved in migration. Table 2 shows incoming migratory flows as recorded in different provinces. The migratory flows are particularly remarkable. Not only do provinces where GDP per capita is relatively high attract more migrants, but it also appears that the two poorer provinces (Bandundu and Province Orientale), with poverty rates exceeding 80%, respectively attract 9.35% and 8.77% of migrants. Kinshasa is first with 20.81% of migrant flows, followed by the province of Katanga (10.48%), Bandundu (9.35%), Bas-Congo (9.06%), East Province (8.77%) and Nord-Kivu (8.67%). The provinces of Sud-Kivu and Kasai-Oriental, compared to others, are those which received fewer migrants, at 4.16% and 6.32% respectively.

Meanwhile, Figure 2 enables us to visualize the geographic distribution (by province) of youth migration, the living standard and entrepreneurial engagement across the DRC. It appears clear that the more prosperous provinces, that is, those with higher spending levels, are also those which receive more young migrants. Aside from East Kasai, which has a low rate of welcoming young migrants and a high rate of youth entrepreneurship, in other provinces the proportion of entrepreneurs seems to go together with that of migrants. The comparison of migrants with respect to non-migrants in terms of their propensity to initiate an entrepreneurial activity is given in Figure 3. The results indicate that compared to non-migrants, migrants are more inclined to establish themselves as entrepreneurs whether considering the population as a whole or youth on their own. Across the population as a whole, 50.1% of non-migrants are entrepreneurs as compared to 62.7% in the group of migrants. A similar share of youth non-migrants are entrepreneurs (40.2% are entrepreneurs) whereas among youth migrants, entrepreneurs number more than half (51.4%). This difference is confirmed with a difference of means test which shows a significant difference

⁸ This is basically entrepreneurship in the informal sector. According to the same 1-2-3 survey, this sector includes 2.9 million informal production units in 2005. These generate a total of 3.4 million jobs, or about 1.3 workers per production unit (Makabu, Mba, Merceron & Torelli, 2007). While informal, they are almost all taxed. Their contribution to GDP is estimated at 20%.

(respectively $t=14.53$ in the entire population and $t=-7.73$ for youth) in the involvement in entrepreneurship of migrants and non-migrants. Another notable fact is given in Figure 4, which gives the distribution of entrepreneurs by level of study.

Figure indicates that, generally speaking, the higher the level of education, the less likely one is to set up as an entrepreneur, but when considering individuals at the same level of study, this probability is higher among non-migrants. For both migrants and non-migrants, in the population as a whole as well as among youth, the proportion of youth entrepreneurs among those who finished secondary school and those who continued into post-secondary education is lower than among those with a lower level of education. However, this situation is not specific to youth. As shown by the left side of Figure 3, a similar situation is also observable in the active population. Levels of education beyond high school present a particular result depending on migration status: while in the population as a whole, migrants with other levels of education are likely to be more involved in entrepreneurship than non-migrants; this is not the case for the segment of the youth with an educational background beyond secondary education. In effect, in the category of those who have completed post-secondary education, 29% of non-migrants are entrepreneurs while this share is somewhat lower (26%) among migrants. This is also observed among youth, albeit to a somewhat more limited extent. In addition to the category of those who have completed post-secondary studies, and also those who have completed post-secondary, there are more entrepreneurs among migrants and non-migrants.

Overall, this situation can be explained by two things. First, the concept of entrepreneurs as defined in this study does not differentiate between the sectors that the individuals included in the study are engaged in. As a result of their size and type of activities, individuals working in subsistence agriculture are grouped together with small industry.⁹ Indeed, as opposed to this last case, subsistence agriculture may be practiced as a matter of survival rather than a choice of professions, per se. This is clearly illustrated in Table 3.

⁹ In effect, 59.3% of youth entrepreneurs are active in the agricultural sector, 22% are in services 6.8% are in commerce and 3.2% are involved in industry. When considering the level of education, it appears that the most highly educated, i.e., those who have completed secondary education (43.75%) or beyond (54%), are more inclined to set up in an activity in the services sector.

Secondly, as in the case of developing countries, this result can lead to the fact that youth with more education tend to prefer relatively stable employment. From this perspective, a salaried position, particularly in the public sector, is a first option to consider. Also, while this only involves a very small share of the population (1.41%), among Muslim youth, 57.7% are entrepreneurs, 40.58% are involved in the agricultural sector, and 43.2% are in services.

The descriptive analysis above enables us to show some distinctive characteristics pertaining to migration and engagement in entrepreneurial activity. However, to establish a link of causality between the two and to be able to draw a clear conclusion on the impact of migration on entrepreneurial activity, we need to use a technique which can control for the differences between the groups being compared. This is the context within which we have selected the econometric models, and for which the results are presented in Tables 5-7.

4. 2 Results of econometric models

In this subsection we report the econometric results which show a link between migration and entrepreneurial behavior, and also the different determinants of these two statuses. The results of the descriptive statistics presented above have shown that the young migrants are majoritarily involved in the labour market as entrepreneurs. This choice can be explained by many factors, in particular by difficulties accessing salaried employment in the formal sector. It may also be the result of a deliberate choice, which is, in particular, a result from the flexibility of independent work or the higher income streams that this may procure for the individuals involved.

To facilitate the interpretation of the results and the objectives of this paper, the analysis is primarily focused on the marginal effect (unless otherwise indicated), which has the advantage of increasing the effect of each independent variable on the variability of the explained variable.

It is important to note that the 1-2-3 data do not enable us to discern between agricultural entrepreneurs and other subsistence farmers. While recognizing this

shortcoming and the limitations that it may lead to in terms of generalizing the results obtained across all sectors, involvement of young entrepreneurs in the analyses here can be explained in two ways. On the one hand, the agricultural sector employs the most youth regardless of their migration status, as is the case for the entire active population in the DRC. On the other hand, of the 22% and 21% of young migrants who leave from cities and small cities, respectively, more than 13% of them go to the countryside, as shown in Table 4. Among the young migrants who must select between these two destinations, some will set up in the agricultural sector as a matter of necessity. In addition to the strong demographic growth observed in the DRC, the last two decades have been characterized by a strong concentration of populations in cities, which are most viable from the perspective of security. This phenomenon has been accompanied by increasing food needs, which to some extent, are satisfied by young entrepreneurs in the agricultural sector. This has increased the interest of young entrepreneurs in the agricultural sector.

In Table 5, four probit models have been estimated. Column (1) contains estimation results of the decision model to be involved in entrepreneurship. Columns (2) and (3) show the same estimation of the first model, but respectively for the formal sector and the informal sector. Finally, column (4) contains the results of the estimation model of the migration decision.

The results of column (4) in the table show that the indicator variables of the level of education do not significantly influence the migration decision. We also observe that being a woman positively influences the migration decision. This status increases the probability of migrating by 17.6%. However, while a result of this type is rarely observed in African countries, it is often observed in Asian and Latin American countries (Lucas, 1997). Posel and Casale (2003) and Posel (2001), in their studies on internal migration in South Africa, have emphasized that more and more women are increasing their participation in migratory flows of workers due to changes which appear in the functioning of the labour market and progress accomplished in terms of the education of girls.

In terms of life as a couple, column (4) shows that youth living as a couple, those living in rural areas, and those characterized by sociopolitical instability (armed ethnic

conflicts, etc.) are more willing to migrate. In effect, while the fact of living as a couple increases the probability of migrating by 30.8%, it is observed that living in rural areas increases this probability by 28.7%. This shows that the migration experience is a determinant factor of the occupational choice of the youth.

Column (1) of Table 5 presents the determinants of the entrepreneurial choice, without distinguishing between sectors. The probit estimate indicates that the migration experience does not influence the entrepreneurship decision at all. The marginal effect associated with this variable, although positive, is not statistically different from zero. The same observation is made when looking at the breakdown of institutional sectors in the formal sector (model (2)) and informal sector (model (3)). However, the duration of stay variable positively influences engagement in entrepreneurship in the formal sector. An increase of one year or more in the duration of stay increases the probability that a young entrepreneur will be involved in an independent activity in the formal sector by 8.47% . Such an attitude can be explained by the fact that the individual becomes more integrated in the new location over time, and creates a knowledge network from which they may access information on market conditions and opportunities, and potentially obtain easier access to credit (Laszlo & Santor, 2009).

As Henrard (2003) in the case of Columbia, we find that primary and incomplete secondary education do not impact the decision to become entrepreneur. These two levels of education do not provide the qualities needed for youth to set up as an entrepreneur. However, having completed secondary and/or post-secondary education negatively influences entry into entrepreneurship in general, and into the informal sector in particular. We find that having completed post-secondary education increases the probability of being an entrepreneur in the formal sector by 80.3% , while it reduces the probability of setting up as an entrepreneur in the informal sector by 56.1%. These results suggest that human capital (education) is best valorized as wage activity (in terms of wages, career and social advantages), as compared to independent labour where activity in the informal sector is known as a substitute for formal education (Lentz & Lanband, 1990).

Table 5 shows that the father's sector of employment influences the occupational choice of the child. In effect, youth with fathers who were entrepreneurs (or self-employed workers) are more likely to become entrepreneurs. The results show a sort of intergenerational transmission of entrepreneurship because it is observed that the fact of an individual having a parent as an entrepreneur increases the probability that the child will become an entrepreneur by 10%. A similar result is obtained by Wahba and Zénou (2012) for the case of Egypt. However, in the present case, the effects differ between the formal and informal sector. In effect, being from a family where the father is an entrepreneur decreases the probability of setting up as an entrepreneur in the formal sector by 21.4%, while it increases the probability of setting up as an independent in the informal sector by 10.7%.

Finally, we find that age and the fact of living as a couple encourage youth to set up as entrepreneurs. The negative sign, which affects age squared, indicates that beyond a certain age, youth are less and less attracted by entrepreneurial activity. Two explanations can justify this behaviour. One is the structure of the labour market and one is discrimination against youth. The second of these groups is more affected by unemployment, and individuals in this group may decide to set up on their own account in the informal sector because of constraints imposed by the labour market. When an employment opportunity presents itself in the formal sector, in particular in wage employment, they may decide to abandon their own account activity and enter into the formal sector which offers more job security. A second explanation is that entrepreneurship (own account work) in the informal sector is generally associated with activities relating to small commerce as small as small vendors. These types of activities are primarily characterized by the fact that they do not require a high level of capital, but do require more patience in order to generate sufficient resources. As a result, more elderly individuals with the most family responsibility are more likely to be involved in these types of activities. This non-linear relationship between age and the decision to set up as an entrepreneur may be explained by the absence of structures in the DRC which support this type of entrepreneurship.

In Table 6, the results obtained by the bivariate probit and which accounts for the endogeneity of migration do not contradict those obtained by the probit model.

Rather, they improve upon them by showing that the migratory experience has a positive influence on setting up as an own account worker in the informal sector. The migration status increases the probability that youth will set up in the labour market as independent workers by 35%. With these results, we would be tempted to consider that they agree with the conclusions of Harris & Todaro (1970) who highlight that after their arrival, migrants first enter into the informal sector to finance the search for prospects in the formal sector. In this case, entrepreneurship in the informal sector is considered as a transitory sector and not a definitive choice.

In controlling for other covariates, we have seen from the refined model reported in Table 6 that the migration decision has a positive impact on the decision to be active in the labour market as an entrepreneur. To bring more robustness to these results, Table 7 shows the estimates of the average effect of migration on the probability of setting up as an entrepreneur, and the use of matching in the propensity score method (PSM), presented in subsection 3.3¹⁰.

The results obtained by the propensity score matching method are brought together in Figures 5 and 6 and in Table 7. As shown in Figure 5, the appropriate choice for a probit model ensures common support of the treatment group and the counterfactual group. Similarly, Figure 6 makes it possible to indirectly capture the extent of the non-randomization correction bias. Also, note that the choice of variables in the PSM model was based on the condition of satisfying the balancing test. The results of Table 7 indicate that working age migrants are more likely to be active as an entrepreneur. However, when only considering youth aged 15 to 30 years, we observe that the average effect is statistically insignificant.

¹⁰ To estimate the treatment effect we have used a version of the nearest neighbour (NN)

V. Conclusions and policy implications

Migration of workers in the Democratic Republic of Congo is very frequent, since 20% of the active population is comprised of migrants with the search for employment being the main declared motive for migration. Observed migration is promoted by many factors, including the distance of the territory, the youth unemployment rate, armed and interethnic conflict, and observed disparities between provinces, notably in terms of prosperity and living conditions.

The goal of this research was to analyse the link between internal migration and youth occupational choice (between salaried income and entrepreneurship). We construct a profile of youth who migrate and isolate the role of the migratory experience on the occupational choice of individuals. Achieving these objectives requires the use of a suitable method for capturing the different relationships between the dependent variable and the explanatory variable. Some control variables, such as level of education, marital status or sex also attracted our attention for interpretation of these results.

In addition to the descriptive analysis, the probit model and the bivariate probit model were judged as most appropriate to verify the links presumed between our variables of interest. The probit model enabled us to show the key determinants of the decision to set up as an independent entrepreneur in both the formal and informal sectors. The bivariate probit model is used to estimate the decision models of migration and entrepreneurship together as well as taking into consideration the endogeneity resulting from the unobserved factors and those which affected both decisions at once.

The influence of migration on entrepreneurship is found to be significant when the entrepreneur sets up in the informal sector. This observation is similar to the negative selection of migrants. Those in the informal sector may do so due to information asymmetry or credit constraints upon arrival which can be overcome over a period of time. It seems that the duration of stay positively influences the decision to set up as an entrepreneur in the formal sector where a one-year increase in the duration of stay leads to an 8% increase in the probability of setting up in the formal sector as an

entrepreneur. Relaxing these constraints enables young entrepreneurs to improve their own situations on the labour market as well as in their family.

Another conclusion concerns the influence of education level on the choice of which sector the youth will decide to set up in. In general, the most highly educated are more oriented towards wage employment. An interesting result is that individuals with a secondary or post-secondary education have a higher chance of setting up as an entrepreneur in the formal sector. This category of entrepreneur is likely to contribute more to the creation of national wealth and the creation of employment for themselves and other individuals. There is no doubt that this certainly runs into problems as mentioned above, in particular with regard to financing. As such, strengthening institutional structures for accompaniment and information and financing of entrepreneurial activity may contribute to the emergence of entrepreneurship and poverty reduction, in addition to reduced dependence of youth. Accompaniment and information should be implemented in a manner that promotes a higher quality of employment positions created by young entrepreneurs. The sustainability of activities initiated by youth depends strongly on the quality of employment they generate; in particular for those in the informal sector and, to a considerable extent, this depends on their formalization. By promoting entrepreneurship, policies which indirectly promote internal migrations contribute more to the consolidation of peace in a post-conflict country with a recent experience of identitarian confinements (see Dibwe dia Mwembu, 1999, 2006). More internal migration together with strong pressures on local public goods, and improvement of the entrepreneurship environment for both migrants and non-migrants means that attention needs to be paid to the provision of local public goods.

VI. References

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Annex – Tables and figures

Tables

Table 1: Gross domestic product of provinces in 2005 USD (PPP)

Province	GDP/cap (in \$US).
Bandundu	350
Bas-Congo	1250
Équateur	250
Kasaï-Occidental	750
Kasaï-Oriental	750
Katanga	1250
Kinshasa	2850
Maniema	650
Nord-Kivu	990
Sud-Kivu	600
Province Orientale	300
For all provinces	Average GDP/cap: 908; Variance: 533736,36
All provinces except Kinshasa :	Average GDP/cap: 714; Variance : 133182,22

Source: Ministère de plan, DSCRCP, 2006 ; PNUD-RDC, 2007

Table 2: Incoming migration flows recorded in provinces in 2005

Province	Migrants	%
Bandundu	1374788	9,35
Bas –Congo	1331601	9,06
Équateur	1101270	7,49
Kasaï-Occidental	1130062	7,69
Kasaï-Oriental	928522	6,32
Katanga	1540339	10,48
Kinshasa	3059084	20,81
Maniema	1058083	7,20
Nord-Kivu	1274019	8,67
Province Orientale	1288414	8,77
Sud –Kivu	611817	4,16
Total	14698000	100,00

Source: INS (2006), rapport de l'enquête 1-2-3

Table 3: Sector of activity of young entrepreneurs by education level

		Sector of activity of migrant					Total
		Agriculture	Industry	Commerce	Service	Other	
Education Level	None	67.32	1.82	5.47	16.68	8.71	100.00
	Primary	47.55	4.11	10.16	28.71	9.48	100.00
	Second. no diplo.	40.93	2.24	8.81	25.74	22.29	100.00
	Second. complete	36.36	4.88	7.47	43.75	7.53	100.00
	University	15.11	6.96	13.53	54.05	10.36	100.00
	Total	54.70	3.13	7.91	24.74	9.51	100.00

Source: Computed on the basis of data from the 1-2-3 survey

Table 4: Origin and destination of migrant entrepreneurs

		Destination of migrant			Total
		City	SmallCity	Rural	
Origin of migrants	City	07.48	01.74	13.01	22.23
	Small city	06.41	01.41	14.04	21.85
	Rural	05.64	03.78	46.49	55.91
	Total	19.54	06.93	73.53	100.00

Source: Developed from data in the 1-2-3 database

Table 5: Estimation of marginal effects with probit-type model (pop.: 15-30 years)

Model number	(1)	(2)	(3)	(4)
Explanatory variable	Entrepreneur	Formal	Informal	Migration
Migration	0.0417 (0.18)	0.296 (0.53)	0.0716 (0.31)	
Duration of migration [^]	-0.0111 (-0.72)	0.0847** (2.80)	-0.0111 (-0.72)	
Age [^]	0.169*** (3.70)	0.0950 (0.70)	0.163*** (3.58)	0.264*** (3.33)
Age squared [^]	-0.00236* (-2.40)	-0.00147 (-0.52)	-0.00224* (-2.28)	-0.00461** (-2.75)
Father entrepreneur	0.103** (2.75)	-0.214* (-1.97)	0.107** (2.86)	-0.0566 (-0.97)
Primary	0.00134 (0.03)	-0.0531 (-0.46)	0.00303 (0.08)	-0.0409 (-0.64)
Secondary no dipl.	-0.170 (-1.92)	0.166 (1.04)	-0.163 (-1.85)	-0.0520 (-0.35)
Secondaire compl.	-0.434*** (-6.16)	0.223 (1.81)	-0.433*** (-6.14)	-0.0259 (-0.23)
University	-0.560** (-2.90)	0.803*** (4.03)	-0.561** (-2.89)	0.114 (0.48)
Sexe: Female	-0.509*** (-13.67)	-0.508*** (-5.31)	-0.498*** (-13.37)	0.176** (2.95)
Couple	0.538*** (12.55)	0.0659 (0.67)	0.528*** (12.31)	0.308*** (4.75)
Rural	-0.0538 (-1.25)	-0.694*** (-6.42)	-0.0356 (-0.83)	0.287*** (4.22)
Origin from unstable province	-0.0597 (-0.59)	0.108 (0.46)	-0.0646 (-0.63)	5.418*** (17.32)

Province	Oui	Oui	Oui	Oui
Constant	-0.335 (-1.08)	-1.607 (-1.95)	-0.319 (-1.03)	-6.135*** (-6.61)
Observations	10231	10231	10231	10231
Pseudo R2	0.112	0.215	0.110	0.431

t statistics between parentheses /*p< 0.05, **p< 0.01, ***p< 0.001

^: The independent variable is purified with respect to the migration variable (except for model 4).

Table 6: Estimation of marginal effects of bi-probit type model (pop: 15-30 years)

Model number	(1)		(2)		Marginal effect	
	Informal	Migration	Formal	Migration	Informal	Formal
Migration	1.020*** (0.301)		-0.320 (0.619)		0.351*** (0.101)	-0.0104 (0.0211)
Duration of migration^	-0.0192 (0.0147)		0.0818*** (0.0297)		-0.00659 (0.00506)	0.00267** (0.00107)
Age^	0.215*** (0.0449)	0.248*** (0.0775)	0.119 (0.131)	0.263*** (0.0794)	0.0741*** (0.0154)	0.00388 (0.00422)
Age squared^	- 0.00297*** (0.000972)	-0.00450*** (0.00163)	-0.00181 (0.00272)	-0.00457*** (0.00168)	-0.00102*** (0.000333)	-5.90e-05 (8.77e-05)
Father entrepreneur	0.0860** (0.0369)	-0.0493 (0.0574)	-0.220** (0.107)	-0.0547 (0.0585)	0.0296** (0.0127)	-0.00717* (0.00375)
Primary	-0.00840 (0.0393)	-0.0500 (0.0629)	-0.0587 (0.115)	-0.0412 (0.0643)	-0.00289 (0.0135)	-0.00192 (0.00388)
Secondary no dipl.	-0.157* (0.0854)	0.00664 (0.150)	0.159 (0.160)	-0.0510 (0.148)	-0.0541* (0.0294)	0.00518 (0.00506)
Secondaire compl.	-0.460*** (0.0691)	-0.0507 (0.112)	0.203 (0.125)	-0.0320 (0.112)	-0.158*** (0.0237)	0.00663* (0.00394)
University	-0.649*** (0.200)	0.0907 (0.230)	0.776*** (0.198)	0.131 (0.235)	-0.223*** (0.0687)	0.0253*** (0.00679)
Sex: Female	-0.397*** (0.0350)	0.110 (0.0695)	-0.471*** (0.0921)	0.177*** (0.0595)	-0.136*** (0.0117)	-0.0154*** (0.00362)
Couple		0.432*** (0.0785)		0.306*** (0.0652)		
Rural	-0.0153 (0.0428)	0.260*** (0.0666)	-0.636*** (0.126)	0.286*** (0.0683)		
Origin from unstable province	-0.964*** (0.238)	5.305*** (0.317)	0.649 (0.422)	5.420*** (0.312)		
Province	Oui	Oui	Oui	Oui		
Constant	-0.276 (0.306)	-5.771*** (0.911)	-1.604** (0.783)	-6.134*** (0.927)		
Observations	10231	10231	10231	10231	10231	10231
Pseudo R ²	0.112	0.215	0.110	0.431		

t statistics between parentheses /*p< 0.05, **p< 0.01, ***p< 0.001

^: The independent variable is purified with respect to the migration variable (except for model 4).

Table 7: Matching model and average treatment effect

	Entrepreneur: Active population			Entrepreneur: 15 to 30 years		
	Total	Informal	Formal	Total	Informal	Formal
Average effect	0.0479***	0.0486***	0.00762*	0.0411	0.042	0.00234
Standard error	(-0.0107)	(-0.0109)	(-0.00394)	(-0.0274)	(-0.0276)	(-0.00449)
Observations	25539	25539	25539	10231	10231	10231

Standard errors in parentheses / *** p<0.01, ** p<0.05, * p<0.1

Figures

Figure 1: Density curve of initial age

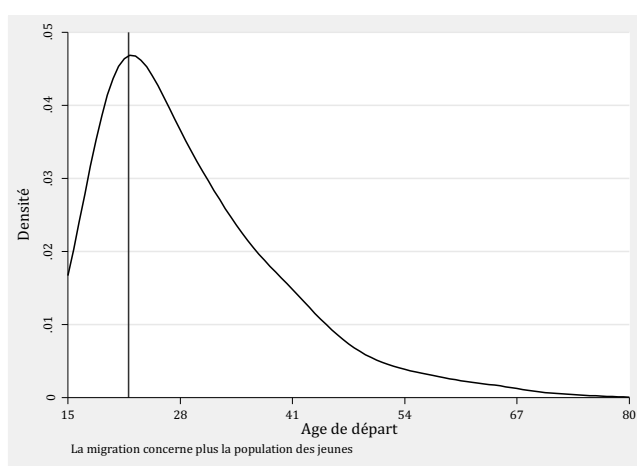


Figure 2: Standard of living and distributions of young migrants and entrepreneurs in DRC

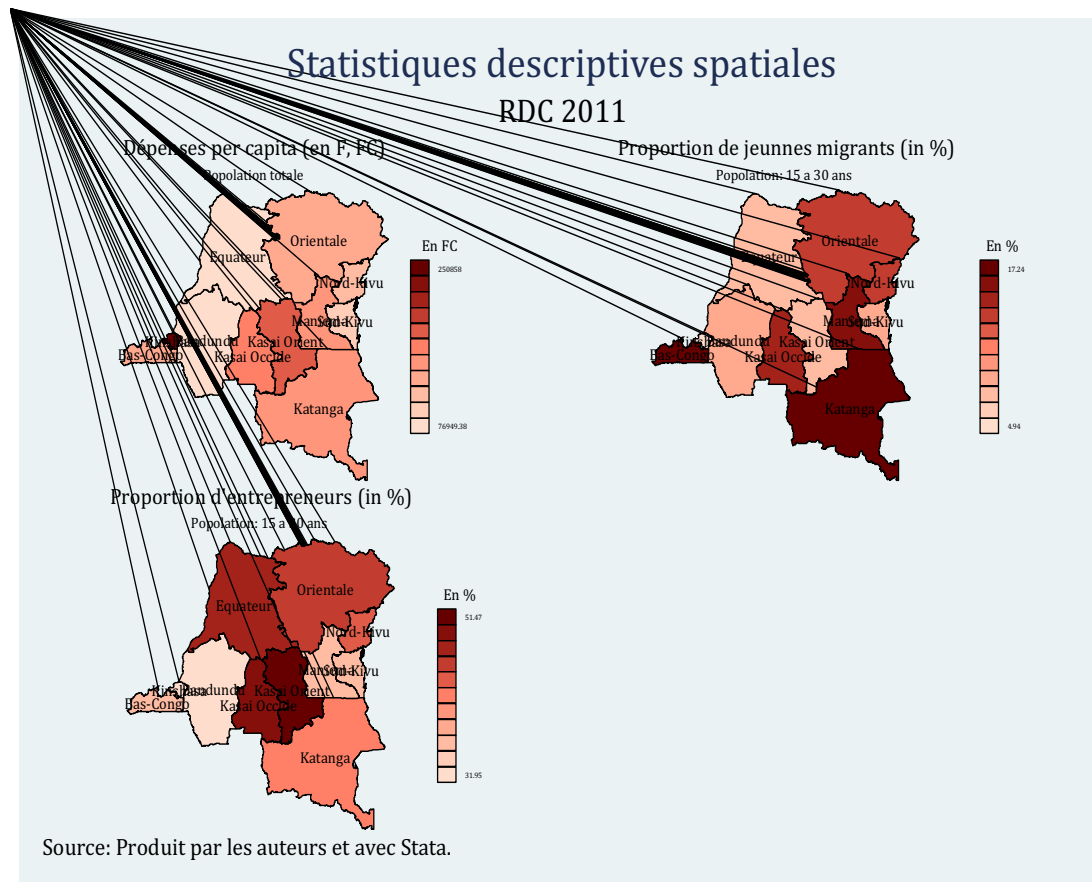


Figure 3: Distribution of entrepreneurs: Entire population vs. youth

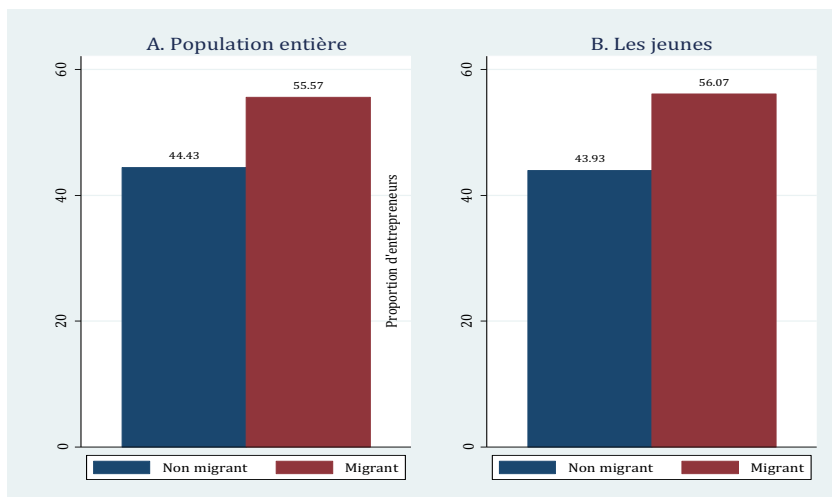


Figure 4: Distribution of youth by level of education

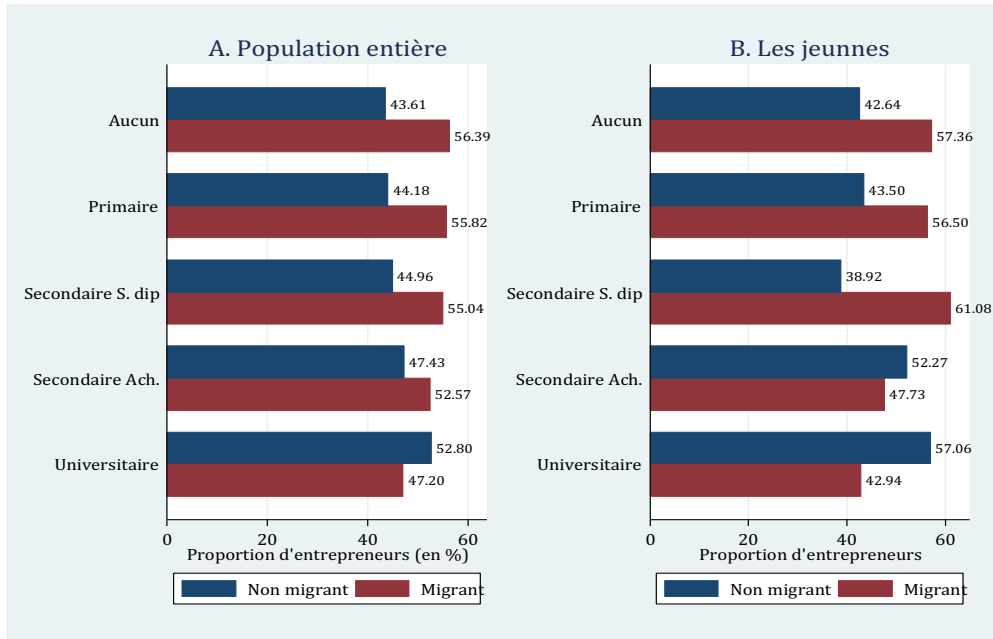


Figure 5: Matching score model and common support

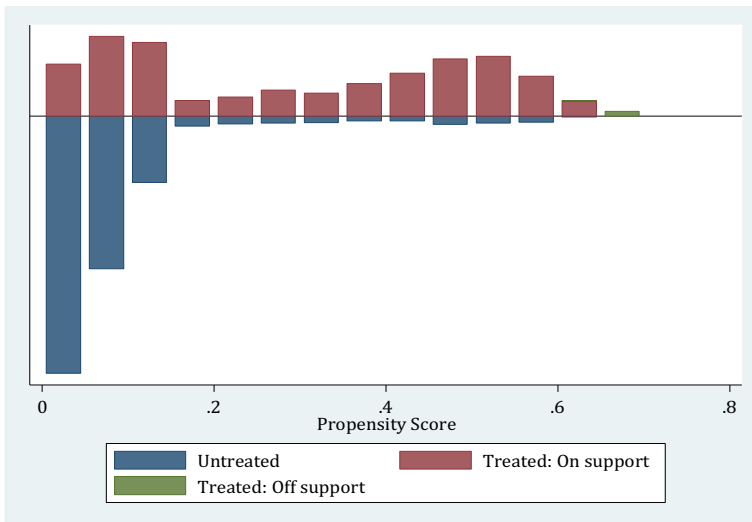


Figure 6: Matching score model and distribution of scores

