Who migrates out of Africa? Education, occupational status and earnings as determinants of migration from Senegal to France, Italy and Spain

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EXTENDED ABSTRACT.
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Abstract

This paper examines the role of individuals' education, socio-economic status, and income on migration from Senegal to Europe. Our main hypothesis is that selectivity of migrants is to a large extent the result of different employment probabilities at destination, according to skills. The intermediate or positive selectivity (with respect to the source population) often found in migration studies will then reflect the inadequacy of the skills of important fractions of the sending countries' population to the requirements of labor markets of receiving countries. We use life course data from the survey «Migrations between Africa and Europe», which includes data on migrants, non migrants and returned migrants, surveyed in Senegal, France, Italy and Spain. Our results from event history models confirm the strong positive selection of Senegalese migrants to Europe. Consistently with our hypothesis, predicted earnings in Europe (accounting for the selectivity of migration) for low educated individuals falls below minimum wages in Europe.

Introduction

A consistent finding of the literature is the strong selectivity of migrants according to their skills. Clearly, migrants' socio-economic integration in the receiving societies if determined by their skills, and even they affect the situation of their descendants. For sending countries, who leaves is also a crucial matter, as it influence economic growth and social development. Given its relevance, it is surprising that the number of empirical analyses that assess migrant selectivity with respect to the origin country is extremely scarce. This is particularly true with respect to Sub-Saharan Africa migration flows, for which very little information is available. Only a handful of studies analyze migration from these countries to European destinations, in spite of the recent rise of these flows and its high potential for future development. Furthermore, existing theoretical insights are clearly insufficient to satisfactorily explain migration selectivity. Perhaps the most well known and better theoretically grounded model of migration selectivity is the one developed by Borjas (1987). That model focuses on the expected income gains that individuals may obtain by geographical relocation and on the levels of inequality on the income distributions in the countries involved. His reasoning leads to expect a negative selection in the traits of migrants from most developing nations heading to developed nations. However, many analysts have emphasized several flaws of the relative income differentials approach to explain migration streams, and that often (albeit not always) migration selectivity from developing to developed countries is positive with respect to such characteristics as educational level, wealth, health, or even psychological traits as motivation or risk proneness behavior. The role of the costs that immigrants must face has often been emphasized to explain these inconsistent findings, including the difficult access to credit by the poorest (Stark, 1991) [1].

This paper contributes to the existing literature on migrants' selectivity in two ways. First, we propose a simple model of migration selectivity, which is based on the role of labor market functioning, in particular in the receiving countries, and emphasizes the role of the skills distribution in the sending and receiving countries. We argue that migration decisions of potential immigrants take into account employment opportunities in the destination country. In contexts characterized by a limited availability of jobs and skills-based job competition, as in most west European countries, unskilled labor is crowded out of the labor market into unemployment (for native workers) and is effectively hampered from immigration, as relatively low skilled individuals have to face low employment opportunities. One of the implications from this framework is that the relatively low migration propensities from low income countries may not be due solely to poverty, but to the inadequacy of the skills with respect to the needs of advanced economies of large fractions of the population in those countries (but increasing educational levels in developing countries may change this picture).

A second contribution of the paper is the empirical investigation of Senegalese migration to France, Italy and Spain in the last few decades. We conduct event history analyses with life course data from the survey "Migrations between Africa and Europe" (MAFE-Senegal), conducted in 2008. Our results show a clear positive selectivity of migration according to several indicators of skills and resources. Furthermore, the

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[1] Other approaches also lead to expect a generally positive selection of migrants, such as those emphasizing the expansion of "human capabilities" in parallel with economic and social development (De Haas 2010, based on the work of Sen,1997, 1999). Conversely, from the "relative deprivation" hypothesis of migration, one would expect negative selection of migrants (Stark, 1991).

results from the analyses on expected income differentials are inconsistent with the Borjas' model.

Individual's skills and migration selectivity

Income distribution
The standard economic model of migration assumes that the migration decision is determined by a comparison of earnings opportunities across countries, net of migration costs (Sjaastad, 1962). Following this income maximization hypothesis Borjas (1987, 1989) developed a model of migration selectivity that takes into account measured as well as unmeasured characteristics of individuals. He shows that in countries with relatively high returns to skill and earnings inequality with respect to the prospective destination country, migrants tend to be negatively selected: they are drawn primarily from the lower half of the skill distribution in their home country. For instance, this will be the case for much of the developing World migration to the USA. By contrast, in countries with low returns to skill and low wage dispersion, as appears to be the case in western Europe with respect to the USA, there will be positive selection of immigrants. In his analyses "the quality of immigrants in the United States then depends *entirely* on the ratio of variances in the income distributions of the United States and the country of origin" Borjas (1987). We may add that these results depend on assuming that migration costs are constant across individuals.
According to this model, we should find negative selection in African-Europe migration flows, because the earnings dispersion is larger in Sub Saharan Africa. This opportunity set implies that low-income workers have much greater incentives to migrate than high-income workers, and thus leads to migrants being negatively selected from the origin population.

Migration costs
However, this framework has to be modified to account for the costs of migration (Fini and Venturini, 2010; Orrenius and Zavodny, 2005). According to Fini and Venturini: "in a relatively poor sending country, an increase in income will have a positive impact on the propensity to migrate, even if we control for the income differential with the receiving country, because the financial constraint of the poorest become less binding". In an study on Mexican-USA migration, Chiquiar and Hanson (2005) show that, if Borjas' assumption of constant migration costs across skill levels is modified so that low educated individuals have higher costs, intermediate or positive selection may result. These authors consider costs associated with the migration process itself, i.e. "bureaucratic requirements" to access USA, costs of admission process, transportation costs, and borrowing costs. Migration costs may be a substantial constraint on the decision to move (e.g. Schiff, 1994). Furthermore, capital markets imperfections may prevent a potential migrant from contracting a loan to pay from the monetary costs of migration (Stark, 1991).

Job competition and skill distributions
In the literature that analyzes labor market dynamics and skills two models are often opposed: the wage competition model and the job competition model. The basic assumption of the first model is that wages represent worker's productivity and that they react to shifts in the supply and demand. In a job competition model productivity is a characteristic of the jobs existing in the economy, and job vacancies are filled according

to a job queue (Thurow, 1975, 1979). In real economies probably both types of competition exits, but the existence of high unemployment and wage rigidities in many developed countries suggest that job competition predominates, especially in West European countries[2]. Our explanation of migrant selectivity brings together some traits of the job competition model of labor market functioning with the distributions of skills in the origin and destination countries. Here we will analyze the consequences for migration selectivity of these two set of factors and derive some hypotheses, that we believe better fit the stylized facts observed in migration studies[3].

The job competition model entails two characteristics: a) the existence of a limited number of jobs, and b) these jobs are sorted according to the skills they require. Individuals competing for these jobs also form a queue, their relative position being determined by their qualifications and several other characteristics, such as education, job experience, age, sex, ethnicity, etc. These characteristics determine or signal unobserved abilities of the "preferred" workers, as they influence training costs. As Thurow (1975) states in his theory of the labor queue, one of the most important characteristics to increase employment opportunities is the level of education. A high level of education and the related skill level will allow to access a wider number of potential job offers, enter the queue at the highest possible position, involving higher income and, crucially, will allow to shorten the duration of unemployment. The process of job competition may involve that high educated individuals are employed in jobs that used to be occupied by people with a lower level of education. This phenomenon is often referred as "overeducation", and may actually imply an under utilization of skills, or may be a consequence of a general upgrading of the skills needed in advanced economies (Borgahns and Grip, 2000). Hence, relatively unskilled labor is crowded out of the labor market into unemployment[4].

A third element involved in our explanation of migration selectivity between a particular pair of countries is the distribution of skills in each of the labor markets. Each individual from Origin country is potentially located in the labor queue of Destination country in a given position. However, a portion of individuals, -the least skilled,- from Origin may find themselves unemployed if they were to migrate to Destination country, because their skills are lower than the minimum required to successfully compete in the Destination labor market. This is particularly likely if the median skills in Origin are much lower than in Destination, as is frequently the case in many less developed countries with respect to more developed countries. Individuals with low skills would then face very low employment probabilities at destination, and as a consequence they will not migrate[5]. Thus, a critical period for the (potential) migrants is the time of arrival to the Destination labor market, when they can rely only on the skills, earnings and other resources brought from home, and often they cannot access unemployment

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[2] It is also consistent to relatively small effects of the increase of foreign workers on wages, often found in the literature.

[3] Among these stylized facts we can mention, the "overeducation" of migrant workers and the generally positive or intermediate selection by education level found in most migration streams from developing countries to developed countries.

[4] Such process is often used to explain the dramatic rise in unemployment among unskilled workers in many European countries.

[5] Low employment probabilities imply long expected unemployment duration in the destination country, that can be regarded as an increase in the costs of migration. In addition, low skilled individuals are likely to have less resources to cope with long unemployment periods.

benefits or other forms of subsidization of job search[6]. Continuing with the typical case where the median skills in Origin are lower than in Destination, from the job competition at Destination it is expected that the better the skills of individuals from Origin, the higher their job opportunities and earnings at Destination. Furthermore, from job competition at Origin[7], one would expect for the least skilled to have higher incentives to leave than the highly skilled, because the former have worse job positions and they may even be unemployed, while the latter have the better job positions. However, since the low skilled have very little job chances at Destination, intermediate or positive selection of migrants may result. In general, the wider the differential between a pair of countries in the distribution of skills, the higher the selectivity of migration (with respect to the origin country). The skills needed for the entry level positions in the Destination labor market will determine the minimum level of skills required to successfully compete in that labor market, thus directly affecting the composition of migrant workers. Destination countries with a relatively high level requirements will have better skilled migrants than countries requiring a lower level of skills to access its labor market.

A different migration selectivity may result if the median skills of the population are clearly higher and the dispersion is lower in the Origin country with respect to the Destination country. In such a case individuals from Origin will have relatively high employment opportunities at Destination, and if they were to migrate this may lead to unemployment or a worsening of the job rank for the least skilled of the Destination population.

Up to now, we have reasoned supposing that a given level of skills is equally valued at Origin and Destination. However, human capital obtained abroad may be less valued than domestically obtained human capital; hence, for a given job, employers require higher education from immigrants than from native workers. This may be due either to the fact that human capital acquired outside the host country provides less country-specific skills, which reduces productivity and increases training costs, or to a lower quality of foreign schooling and of work experience. The wide literature on the "portability" of human capital acquired by immigrants in their country of origin suggest that transferability is greater for countries that are highly developed or have a similar culture or language and lower for developing countries and those with more distant cultures (Chiswick, 1978; Friedberg, 2000). This may imply a strong loss of status in the job position for migrants, with respect to the jobs available to them in their home country. This lost of status seems to be particularly important at the time of entrance in the destination labor market. However, there is disagreement among studies on whether this is a transitory situation of the job and income trajectories of migrants in the destination countries or constitutes a permanent situation of disadvantage (Bernardi et al 2010; Obucina, 2011).
A lower position in the queue of the destination labor market may also be the result of "ethnic penalty", a concept used to describe immigrant residual disadvantage in the

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[6] Resources may also include social capital acquired prior to migration. Migrant networks can, of course, diminish the costs of migration, by providing privileged access to employment. Therefore, the availability of networks at destination may especially increase the migration probabilities of the least skilled workers, that otherwise would not be able to compete in destination labor markets.

[7] Job competition model was primarily conceived to explain labor market dynamics in advanced economies, and it is unclear wither it can be applied to contexts such as the contemporary Sub-Saharan Africa.

labor market after controlling for their skills and other socio-demographic characteristics (Heath and Ridge, 1983). Different forms of discrimination towards foreigners[8], in the form of segregation into low-quality and low paid jobs may play a role in explaining their higher over-education. In this case, it is unlikely to decrease with the duration of the migratory experience. At an equal level of education (or skills) individuals from the origin country are disadvantaged if they were to migrate to a particular destination country with a high "ethnic penalty", thus discouraging migration. Furthermore, the higher the "ethnic penalty" of migrant workers, the more there will be a positive selection according to skills.

The explanation advanced here of migration selectivity is also compatible with the existence of a dual labor market consisting of skilled and unskilled labor (Piore 1979; Bulow and Summers (1986), Davis and Reeve (1997), De Groot and Van Schaik (1997) and Davis (1998). Since only a limited number of jobs are available in both sectors[9], an increased supply of skilled workers leads to full employment in the skilled sector, while the remaining skilled workers are temporarily hired in unskilled jobs. Hence, unskilled labor will be crowded out of the labor market into unemployment, for native workers, or into non-migration, for individuals from de origin country. Better skilled migrants will be able to access the secondary labor market of the receiving country, but they may have strong difficulties in accessing the primary positions.
Finally, the mechanisms described above will severely limit the pool of potential migrants to economically advanced countries, by limiting the number of individuals with the required minimum level of skills to successfully compete in those labor markets.

The upsurge of Senegalese migration to Europe (*to be developed*)

Brief description of trends and flows to each country.
Presentation of educational distributions. Job categories of Senegalese migrant workers.

Most Sub-Saharan Africa countries, including Senegal, have experienced long periods of economic recessions and crises, including most of the 1980s and 1990s. Economic and human development has remained well behind other regions of the World (United Nations, 2009). Although the role of poverty in determining migration seems to be context specific (de Haas, 2009), income levels have remained well below to what is generally believed to lead to mass migration (Fini and Venturini, 2010). International historic experience show that migration accelerates in early phases of development, combined with parallel demographic transitions (Taylor, 1996).
Responses of African governments and international organizations, such as the IMF, to bad economic performance have included structural adjustment programs and
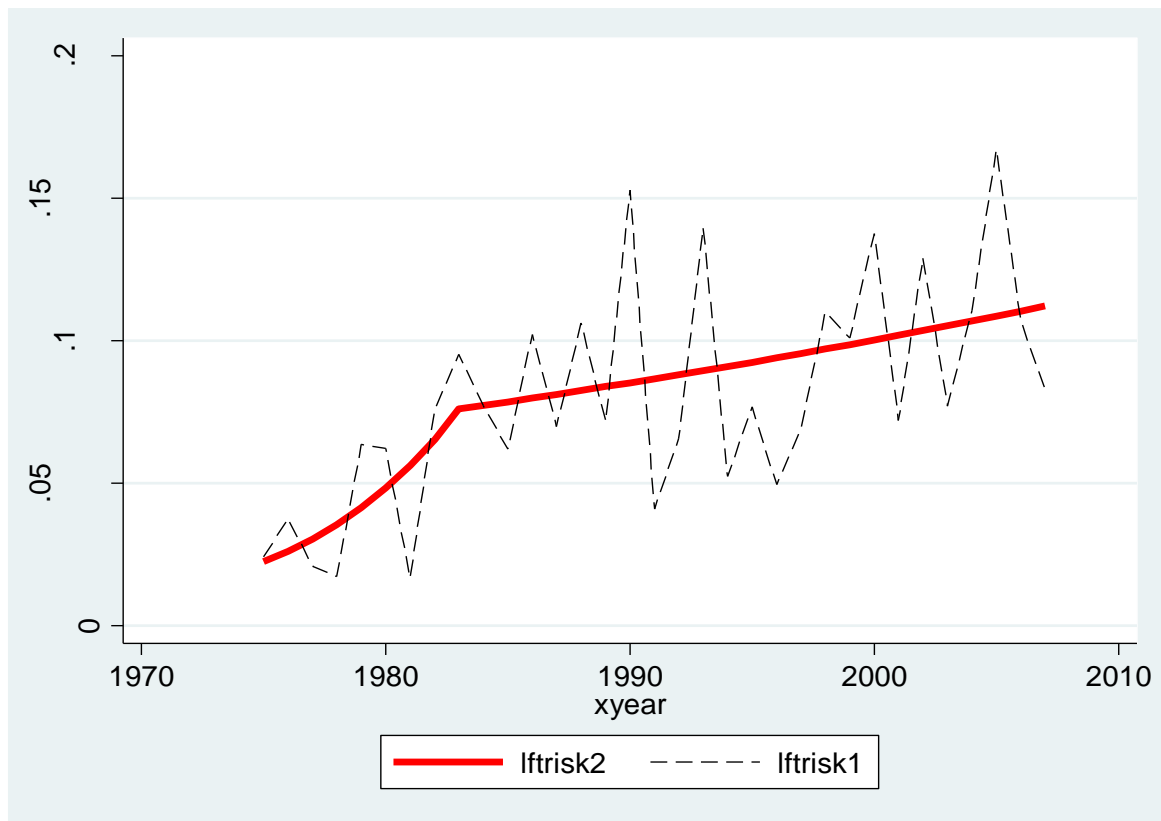
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[8] These include legal discrimination (e.g. non recognition of diplomas obtained abroad) as well as statistical discrimination.
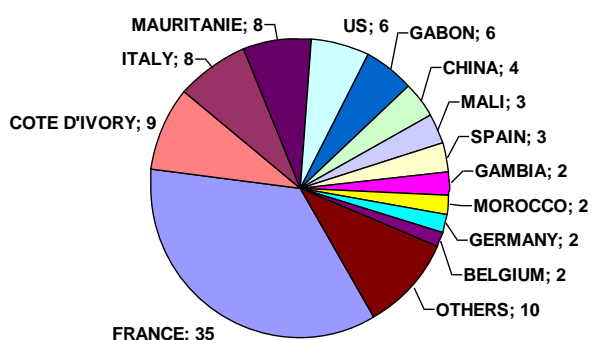
[9] Our approach coincides with the dual labor market theory in that labor market dynamics at destination is what determines the number of migrant workers. However, the dual labor market theory is basically silent concerning the qualifications of immigrants (especially with respect to the distribution of skills in the origin country) and labor market dynamics in the origin country.

liberalization of the economy (e.g. Collier and Gunnig, 1999; Azam, 2004; Thioub, Diop, Boone 1998) . These policies, however, have not prevented the deterioration of living conditions for large fractions of the population and the increase of insecurity and social inequalities (Weissman, 1990). In such context, migration can be interpreted as a survival economic strategy by households (Stark,1991; Scoones 1998; Barrett et al 2001; Kothari 2002). Migration can thus be a way of accumulating human or physical capital, if access to credit is restricted. It is a means of protecting income stability, through the diversification of resources.
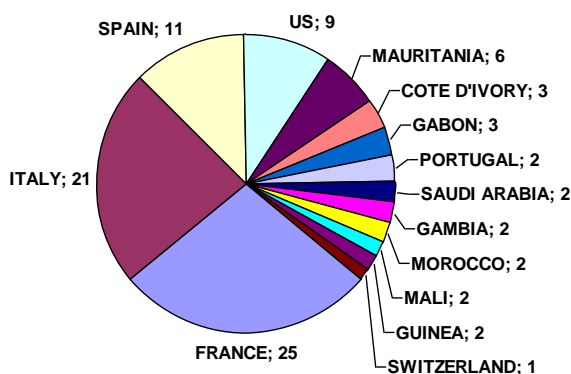
Lifetime risks of migration from Senegal. MAFE survey

Destination of migrants who left Dakar for their first time before 1990 (%)

MAURITANIE; 8
ITALY; 8
COTE D'IVORY; 9
FRANCE; 35
US; 6
GABON; 6
CHINA; 4
MALI; 3
SPAIN; 3
GAMBIA; 2
MOROCCO; 2
GERMANY; 2
BELGIUM; 2
OTHERS; 10

Destination of migrants who left Dakar for their first time after 1989 (%)

SPAIN; 11
US; 9
ITALY; 21
FRANCE; 25
MAURITANIA; 6
COTE D'IVORY; 3
GABON; 3
PORTUGAL; 2
SAUDI ARABIA; 2
GAMBIA; 2
MOROCCO; 2
MALI; 2
GUINEA; 2
SWITZERLAND; 1

Data

The empirical analyses in this paper are based in the survey «Migrations between Africa and Europe» (MAFE-Senegal)[10]. This transnational dataset results from the collection of identical data both in European countries and in Senegal: 603 Senegalese migrants were surveyed in Europe (about 200 in each of the following countries: France, Italy

and Spain[11]) and 1,067 persons were interviewed in the region of Dakar (including 197 returnees and 101 migrant's partners at the time of the survey, i.e. 2008). The places covered by the MAFE Senegal survey offer a good coverage of Senegalese migrants. On one hand, in Europe, France, Spain and Italy accounted for 45 percent of the international Senegalese migrants declared in the 2002 Senegal Census. On the other hand, the region of Dakar is home to about a quarter of the national population in the 2002 Senegal Census and is the region of origin of 31% of the international migrants declared in 2001-2002 by Senegalese households in the ESAM-II survey. In all countries, the eligibility criteria for selection into the sample established that individuals had to be between 25 and 75 years of age (to have long enough life histories), born in Senegal (to exclude second generation in Europe) and of present or past Senegalese nationality (to exclude immigrants in Senegal). Varied sampling methods were used to select the individuals. In Senegal, a stratified probabilistic sample was drawn. The municipal register in Spain (Padrón) offered a national sampling frame from which documented and undocumented migrants could be randomly sampled. Respondents in France and Italy were sampled through varied non-probabilistic methods (e.g. snowballing, intercept points, contacts obtained from migrant associations) in order to fill pre-established quotas by sex and age. Additional information can be found in González-Ferrer and Beauchemin (2011) or on the website of the MAFE project: http://www.mafeproject.com/.

The data are time-varying by nature, since they result from individual life-histories collected in biographical questionnaires. The questionnaire was designed to collect longitudinal retrospective information on a yearly basis from birth until the time of survey (2008), for each sampled individual, whatever his/her country of residence at the time of the survey. The data collected include a large range of information on migration and occupation histories of the interviewed persons, as well as on their family history (children, partnerships). Information on professional occupations have been coded into ISCO-08 International Labor Office classification, and subsequently collapsed into the *International Socio-Economic Index of occupational status* ISEI, (Ganzeboom & Treiman 1996; Ganzeboom, 2010), and the *Socio-Economic Status classification, EGP,* (Eriksson, Golthorpe & Portocarrero classification. Eriksson, R. and Goldthorpe, J.H. 1993). The questionnaire includes a whole module on the international migrations of the interviewee relatives (including his/her current and past partners), friends and acquaintances. Besides, it includes information on the individual earnings at the time of each activity period (each change in occupational category imply a separate activity period). Reported earnings have been deflated (base year 2000) and converted into Euros. International migration is defined as a stay of at least 12 months outside Senegal. In the present analyses we include exclusively direct migrations from Senegal to France, Italy, or Spain (we treat them as a single destination).

Methods
We use discrete-time event history techniques to analyze first migration from Senegal to France, Italy or Spain (Yamaguchi, 1991). The model is specified as a logistic regression:

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[11] For the sake of simplicity in writing and reading, we'll refer in the rest of the text to "Europe" instead of mentioning these three different destination countries.

$$\log[P_{it} / (1-P_{it})] = \alpha_0 + \beta' X_{it}$$

where P_{it} is the conditional probability that individual i experiences a first migration in year t. α is a constant term, and X_{it} is a vector of covariates (including the baseline hazard function), with β denoting the value of the estimated coefficients of the model for each variable. This model estimates the effects on migration probabilities of a number of background characteristics of individuals. However, in the Borjas' (1987) model migration takes place when expected earnings, net of migration costs, in the new country are greater than in the source country. Individuals with the widest relative differential in earnings will show higher migration probabilities. Therefore, in order to compute the differential in earnings, in addition to observed earnings in Senegal (for non migrants) and observed earnings in Europe (for migrants), the relevant questions are "what non migrant individuals would earn if they had migrated?" and "how much migrants would earn had they stayed in Senegal?". In order to provide answers to these questions we have computed the predicted labor income in Europe, taking into account selection into employment and being a migrant, and the predicted labor income in Senegal, taking into account selection into employment. The specification has taken the form of a system of equations for migration (event history logistic regression), work/no work (probit), labor income (OLS), in which we have included a residual terms specific to each individual interviewed (Lillard, L.A., 1993):

$$\begin{cases} Y^* = \alpha_0 + \beta' X_{it} + \varepsilon_i \\ Y^* = \alpha_0 + \beta' X_{it} + \delta_i \\ Y^* = \alpha_0 + \beta' X_{it} + \eta_i \end{cases}$$

The heterogeneity terms ε, δ, and η and are assumed to follow a joint tri-variate normal distribution:

$$\begin{pmatrix} \varepsilon \\ \delta \\ \eta \end{pmatrix} \sim N\left(\begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \sigma_\varepsilon^2 & \rho_{\delta\varepsilon} & \rho_{\eta\varepsilon} \\ \rho_{\varepsilon\delta} & \sigma_\delta^2 & \rho_{\eta\delta} \\ \rho_{\varepsilon\eta} & \rho_{\delta\eta} & \sigma_\eta^2 \end{pmatrix} \right)$$

Once we have an estimate of the expected earnings for migrants and non migrants in both locations (Senegal and Europe) we can plug this information into the model for first migration, presented above.

Results

A first set of results depict migration selectivity according to several variables that are linked to skills and other individual's resources. In table 1 we present the effects of the educational level. These results are clearly significant and follow a sharp positive gradient, in which individuals with secondary education have a coefficient of 1.8 with respect to individuals with no schooling. The coefficient for tertiary educated individuals is 1.4, suggesting an inverted U shape in the effect of education (or rather an inverted and reversed J shape, as the tertiary educated show a much smaller decline). When we apply a continuous specification to education (years of schooling) the results

also show a clear positive and significant gradient for education, although an additional parameter for the square of the years of education is not significant. It is instructive to remember that more than two thirds of the Senegalese population has a primary or lower level of education, for which the migration probabilities are particularly low. Furthermore, the Senegalese educational system (in particular, post primary education) provides literacy and language skills in French, likely facilitating job search and opportunities in France, Italy and Spain.

In the models presented in tables 2 and 3, in addition to educational level, we included two indicators of the job position. The results pertaining to the EGP classification as well as the ISEI classification both show a clear inverted U shape, albeit skewed to the higher positions: i.e. this indicator also show a clear and strong positive selection of migrants. Individuals in the higher positions (e.g. managers, professionals, large proprietors) presumably would have important opportunity costs if they were to migrate to Europe (although they may also have larger absolute income gains; see below), compared to the intermediate categories that show higher migration probabilities (routine non manual workers, and to a lesser extent, skilled manual workers). Similar reflections apply to the effects of income, which show clearly positive and strong coefficients (0.041***; and the logarithm of income: 0.360**).

Table 1. Dependent variable: first migration

Age	-0.470***
Ln age	12.518***
Woman	-0.558
No schooling (ref.)	
Primary schooling	0.501*
Secondary	1.794***
Tertiary	1.397***

Controls: spouse in Europe, friends in Europe

Table 2. Dependent variable: first migration

Student	0.681
Unemployed	0.417
Other inactive	0.016
Unskilled manual	-0.229
Skilled manual(ref)	
Routine non manual	0.732*
Higher occupations	-0.010

Controls: age, lnage, gender, education, spouse in Europe, friends in Europe

Table 3. Dependent variable: first migration

Student	0.450
Unemployed	0.175
Other inactive	-0.297
ISEI	0.057**
ISEI square	-0.001*

Controls: age, lnage, gender, education, spouse in Europe, friends in Europe

A second step in our analysis involves the estimation of predicted wages in Senegal and Europe, and the net income gains of migration. As can be seen in table 4, the standard deviation of the heterogeneity components of the equations for migration, employment and earnings are significantly different from zero. In addition, the correlation between these heterogeneity components is positive and significant for the processes of migration and earnings, indicating that there are unmeasured factors that affect both processes. This positive correlation implies that the same unmeasured factors that favor migration also favor earnings at destination, and suggest a positive selection into migration according to skills. The correlation between the heterogeneity components of employment and earnings is also positive and significant, as expected. In the case of the processes of migration and employment no significant correlation is found. This may be the result of a strong selection into migration: only individuals with high probabilities of finding an employment in Europe would migrate.

In table 5 we present the results on the predicted wages in Senegal and in Europe. The earnings profiles by education in Senegal is steeper than in Europe, indicating a greater pay off for education in Senegal[12]. This is the situation were the Borjas' model would predict a negative selection according to skills. Furthermore, predicted earnings for individuals with less than secondary school fall much below minimum wages in Europe. This implies very little probabilities of getting employment in Europe. As predicted by the job competition model presented above these individuals are the least likely to migrate.

The application of the predicted wages in Europe to the analysis of the migration propensities shows once again that individuals with high earnings are more likely to migrate (Table 6). Contrary to the Borjas' model expectations, the difference in predicted earnings in relative terms (logarithmic scale) has a negative effect on migration (-1.7**), because individuals with low earnings have the widest relative income differential. Income differentials show that in percentage terms more educated workers do not do as well as low educated workers, but the difference in predicted earnings in absolute terms provides greater incentives for more educated to migrate (0.002**).

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[12] The relatively low returns to education found for the Senegalese migrants in Europe is consistent with the fact that many of them work in the secondary sector of the labor market. High segregation of migrants in certain occupations is nevertheless coupled with little differences in wages with natives that occupy the same occupations holding similar characteristics such as age, sex, education, etc. (Reyneri, 2006; Bernardi et al, 2011).

Table 4. Simultaneous equations for migration, employment, and income.
Error structure

	France, Italy, Spain	Senegal
Standard deviation ε migration	1.043***	
Standard deviation δ employment	1.752***	1.656***
Standard deviation η income	0.574***	0.809***
Correlation ε δ	-0.009	
Correlation ε η	0.484**	
Correlation δ η	0.310***	0.216**

Table 5. Results: earnings equations

	France, Italy, Spain	Senegal
No schooling		
Some schooling	0.012	0.058
Primary	0.147	0.235***
Lower secondary	0.237*	0.329***
Higher secondary	0.363**	0.778***
Tertiary	0.624***	0.956***

Controls: age, age square, gender

Table 6. Dependent variable: first migration

Age	-0.338***	-0.393***
Ln age	7.611***	10.021***
Woman	-0.697*	-0.734*
Log pr. income	1.534***	
Pred. income		0.001*
Married	0.226	0.211
Children	-0.184***	-0.195**
Spouse in F,I,E	1.312***	1.336***
Friends in F,I,E	1.950***	1.977***

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