

IZA DP No. 7728

**“Barcelona or Die”:
Understanding Illegal Migration from Senegal**

Linguère Mously Mbaye

November 2013

“Barcelona or Die”: Understanding Illegal Migration from Senegal

Linguère Mously Mbaye
IZA

Discussion Paper No. 7728
November 2013

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
E-mail: iza@iza.org

Any opinions expressed here are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but the institute itself takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The Institute for the Study of Labor (IZA) in Bonn is a local and virtual international research center and a place of communication between science, politics and business. IZA is an independent nonprofit organization supported by Deutsche Post Foundation. The center is associated with the University of Bonn and offers a stimulating research environment through its international network, workshops and conferences, data service, project support, research visits and doctoral program. IZA engages in (i) original and internationally competitive research in all fields of labor economics, (ii) development of policy concepts, and (iii) dissemination of research results and concepts to the interested public.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ABSTRACT

“Barcelona or Die”: Understanding Illegal Migration from Senegal*

Fatalities from illegal immigration from Africa is an important issue, representing a major challenge for both major migrant sending and receiving countries. Nonetheless, almost nothing is known about how the illegal migration intentions of potential migrants are formed. This paper aims to explain the factors behind the formation of these intentions to migrate illegally by using an original survey among urban Senegalese individuals. Remarkably, the results show that potential illegal migrants are willing to accept a substantial risk of death (25% at the median). Furthermore, the paper also finds that the price of illegal migration, migrant networks and high expectations play important roles in the decision to illegally migrate. Moreover, I find that, contrary to conventional thinking, stricter immigration policies deter potential legal migrants more than potential illegal migrants.

JEL Classification: F22, O15

Keywords: illegal migration, intentions, Senegal

Corresponding author:

Linguère Mously Mbaye
IZA
P.O. Box 7240
53072 Bonn
Germany
E-mail: mbaye@iza.org

* I am grateful to Jean-Louis Arcand, Andrew Oswald, Alpaslan Akay, Amelie Constant, Joel Cariole and Ariane Tichit, Flore Gubert and Martina Viarengo for their valuable comments and suggestions on earlier versions of this paper. I also thank seminar participants at CERDI, Clermont-Ferrand; the 8th IZA Annual Migration Meeting (AM²) and 3rd Migration Topic Week in Washington, DC; CRES, Dakar and IZA, Bonn. The usual disclaimer applies.

1 Introduction

Illegal or undocumented migration from the developing world to rich countries raises many important issues at the political, economic and humanitarian level. Out of 214 million migrants in the world, around 20 to 30 million, i.e. 10 to 15% of migrants, are undocumented. Moreover, an increase in this proportion is expected in the coming years (IOM, 2010).¹ Illegal migration has mostly been studied in the context of Mexico and the United States (see for instance Hanson, 2006; Orrenius, 2004; Orrenius and Zavodny, 2005; Gathmann, 2008), while very few studies have studied illegal migration from Africa to Europe.² My main goal in this paper is to contribute to the literature by examining the factors related to illegal migration. I compare potential legal and illegal migrants and I explain why people are willing to jeopardize their lives to go abroad and live in an underground economy. Very few studies have offered theoretical evidence surrounding this point. Amongst them, Stark and Fan (2011) argue that an individual will be less reluctant to choose a migration experience with degrading work rather than not migrating and having a decent job if there is a large number of people from the same origin place working in the same occupation. Moreover, migrants can be maintained in servitude by the smugglers due to the debt-contract that exists between the two parties (Friebel and Guriev, 2013). In a previous work, Arcand and Mbaye (2013) study both theoretically and empirically the determinants of illegal migration from Senegal. However, they focus on the role of individual preferences such as risk aversion and intertemporal discount rate in the willingness to migrate illegally and to pay a smuggler. In this paper, I explore empirical evidence from sub-Saharan Africa to gain a deeper understanding of the mechanisms behind illegal migration. Towards this aim, I conducted a tailor-made survey in Dakar from November 2006 to April 2007 and collected a wealth of information about the characteristics and motivations of people

¹International Organization for Migration

²See for instance, Chiuri et al. (2007), who document the characteristics of illegal migrants by using a sample of individuals coming among others from African countries and entering Italy illegally during 2003. In the particular case of Senegal, see Fall (2007) and Mbow (2008) for sociological studies about this issue.

who are willing to migrate illegally. Furthermore, the survey also elicits information on individuals' potential destinations and perceived financial cost of migration. From the data in my survey, I estimate various simple probit models to examine the determinants of the probability that an individual will choose to migrate illegally. I am first interested in the relationship between individual characteristics and the willingness to migrate illegally, before later examining the role of illegal migration prices, expectations, relatives who have already migrated and restrictive immigration policies on individuals' willingness to migrate illegally.

Since the fall of 2005, people in Europe have regularly witnessed tragic events related to illegal migration from Africa, such as the Ceuta and Melilla tragedy³, as well as media images of boat-people disembarking on European coasts. Such events show how strongly migrants are motivated to leave their country at any cost, with the hope of finding a better life. While the phenomenon of migrants landing in a host country without proper authorization is not new, new methods of illegal migration that push the envelope of safety are continually being developed as a means of side-stepping restrictive immigration policies in receiving countries. Prior to 1999, illegal migrants from sub-Saharan Africa used to go to the Maghreb via the desert and subsequently tried to reach Europe from these countries. However, stricter border controls at the Straits of Gibraltar have increasingly driven illegal migrant flows to using boats to reach European coasts in locations such as Lampedusa, Sicily or the Canary Islands (De Hass, 2006; Adepoju and Afrikainstitutet, 2008). Many of these boat-people are originally from Senegal, a country that has had to cope with the departure of many illegal migrants. The motto of thousands of Senegalese who try to migrate illegally is "Barsa wala Barsakh", which in Wolof⁴ means "Barcelona⁵ or Die: we prefer dying by remaining in Senegal if we cannot migrate to Europe or to a rich country". To give an

³Ceuta and Melilla are two Spanish enclaves in Morocco. In 2001, the Spanish government constructed fences to stop illegal migrants from crossing these borders. During the fall of 2005, many illegal migrants mainly coming from sub-Saharan Africa and attempting to reach Spain were killed or injured by border controllers.

⁴While French is the official language in Senegal, Wolof is one the main languages spoken.

⁵Barcelona representing the European Eldorado here.

idea of the scope of this phenomenon, half of the 30,000 illegal migrants who arrived in the Canary Islands in 2006 were Senegalese, while 1,000 of 7,000 African illegal migrants who died during the crossings in the same year were Senegalese.⁶ From the survey that I conducted, I have gained information on the willingness to migrate, which means that individuals in the sample are potential migrants who could realize their plan and migrate in the future, as well as the alternative of staying in Senegal and never migrating. In both cases, the intentions of potential migrants provide a good indication of their motivations, which are real at the time. In the case of illegal migration, I argue that it is important to gain some evidence using subjective data. The willingness to migrate, and particularly to do so without proper authorization from the host country, is a good indicator of how frustrated people are with the living conditions in their country of origin. Illegal migrants who make it in the host country are not easily observable, and thus subjective data are more valuable in this specific case, because they help to elicit motivations and obtain a better understanding of this phenomenon. This is useful, for example, to adapt pragmatic migration policies in both the sending and receiving countries. Therefore, it is important to ascertain how these motivations to migrate illegally are formed.

The results can be summarized as follows. First, potential illegal migrants are willing to accept a substantial risk of death (25% at the median), which means that they are at the minimum risk neutral. Furthermore, this also suggests a large utility gap between migrating and remaining in Senegal, illustrating the emergency of these people to leave their home country in order to improve their well-being. Through the descriptive data, I show that potential illegal migrants tend to be young, single and with a low level of education. Second, I find that high illegal migration prices are negatively correlated with the likelihood of migrating illegally, suggesting that the poorest are unable to migrate illegally. To my knowledge, there is no previous empirical evidence in the African case, about the effect of illegal and legal prices on the willingness to migrate illegally, which constitutes another novelty of this paper. Third, biased expectations of potential migrants play an important role in

⁶Source : Asociación Pro Derechos Humanos de Andalucía, www.apdha.org.

the intention to migrate illegally, highlighting the fact that people may base a risky decision on incorrect information. Fourth, there is a positive relationship between migrant networks and illegal migration intentions, which may be due to the fact that relatives who have already migrated help to reduce the costs associated with illegal migration to the host country and furthermore can sometimes provide less than accurate information concerning their living conditions, which serves to increase the desire of potential illegal migrants. Fifth, stricter immigration policies might not be effective because they deter potential legal migrants more than potential illegal migrants. Sixth, some particular destinations are correlated with illegal migration more than others, with historical links, cultural proximity and language mattering less in the destination country choice of potential illegal migrants.

The remainder of this paper is organized as follows. The following section reviews the existing literature on the probability of migrating, migration intentions and triggering factors of illegal migration, such as expectations, networks, strict immigration policies and migration costs. Section 3 presents the data and descriptive statistics obtained from the survey. The estimation strategy and main results are presented in Section 4. A discussion about our empirical results is provided in Section 5, before Section 6 concludes.

2 Literature

According to neoclassical theory, the probability of migrating is related to the wage differentials, the employment opportunities in both the origin and receiving countries and the human capital characteristics of migrants themselves (Sjaastad, 1962; Todaro, 1969; Borjas, 1990). The New Economics of Migration puts this approach into perspective, arguing that migration is not an individual decision but rather a household one, taken in order to diversify the family income risks.⁷ In the specific case of intentions, more recent literature shows that migration intentions are driven by certain socio-demographic factors such as gender, age, level of education, migrants' place of origin or

⁷See Massey et al. (1993) for a complete literature review of these theories.

the presence of friends and relatives in the destination place (Zaiceva and Zimmermann, 2008; Burda, 1993; Epstein and Gang, 2006). Moreover, intentions to migrate are determined by the economic conditions in the country of origin such as the level of income inequality (Liebig and Souza-Poza, 2004) or the social conditions in the receiving country such as the level of xenophobia (Friebel, Gallego and Mendola, 2011). However, these papers do not necessarily make a distinction between legal and illegal migration. I assume that there is a difference between an individual who decides to migrate and someone who is willing to migrate whatever the risks, including using an illegal method. Moreover, I also draw on literature on determinants such as expectations, migrant networks, immigration policies and migration costs⁸ that are considered as some factors triggering the willingness to migrate illegally.

It is shown within existing literature that the probability to migrate can be motivated by great expectations concerning the living standards at the destination (Dalen, Groenewold and Schoorl, 2005a). These high expectations are often unrealistic and can lead to a negative migration experience (Knight and Gunatilaka, 2010; Sabates-Wheeler, Taylor and Natali, 2009). Nevertheless, there is no consensus in the literature about the role of expectations regarding migration; some studies argue that the role of over-expectations on migration decisions needs to be put into perspective. For instance, McKenzie, Stillman and Gibson (2012) find that, contrary to the general understanding that over-expectations increase the pressure to migrate, potential male migrants from Tonga to New Zealand underestimate both their likelihood of finding a job and their earnings. However, even though I do not use the same measure of expectations as this previous study, it is very likely in the specific context of Senegal to assume some over-expectations of migration returns from potential migrants. Indeed, this assumption can be explained by historical, sociological and economic factors. First, Senegal has a long tradition of migration within West Africa as well as Europe (Riccio, 2005). Second, many households in Africa and more specifically in Senegal with good life condi-

⁸The role of migration costs on the intention to migrate can be explained through the role of expectations, networks and immigration policies.

tions have one or many family members who have migrated. Such migrants invest in buildings, business, social services for the community (Beauchemin and Shoumaker, 2009; Melly, 2011), as well as sending remittances. These transfers and investments bestow them with an important economic power and signal a much better life abroad, which in turn affects the intentions and expectations of individuals who have non-migrant families in the local communities (Dalen, Groenewold and Fokkema, 2005b). Third, remittances demonstrate family attachment and are perceived as the outcome of successful migration (Riccio, 2005). Naturally, this generates a feeling of relative deprivation among other members in the community who aspire to similar standards of living and be motivated to migrate, even illegally, due to the high social pressure of having a lower social status.

Migrant networks, and particularly family and friends of those who have already migrated legally or illegally, are considered another trigger of illegal migration. Indeed, existing literature shows that migrant networks play an important role in the decision to migrate illegally. For instance, studies on illegal migration from Mexico to the U.S. find that networks assist individuals in finding a job more easily, learning information about how to cross borders illegally and meeting the financial cost of migration through informal credit mechanisms between individuals (Massey and Espinoza, 1997; Singer and Massey, 1998; Orrenius and Zavodny, 2005; Dolfin and Genicot, 2010).

I also assume that restrictive immigration policies in the destination countries can affect the probability of migrating illegally. On the one hand, a tight border enforcement increases the likelihood of being apprehended, which raises illegal migration prices. In turn, these higher illegal migration prices reduce the demand for smugglers' services (Singer and Massey, 1998; Gathman, 2008). On the other hand, stricter immigration policies often have some pernicious effects on illegal migration. For instance, Orrenius (2004) and Gathman (2008) show that border enforcement actually worsens the situation through immigrants falling into the hands of smugglers, who raise their prices. Consequently, these authors argue that only a small deterring effect is achieved by the enforcement of border controls between Mexico and the U.S.

The choice of destination country can also explain the method of migration to a country and thus can be used as a proxy for expectations, migrants' relatives, migration prices and immigration policies. Intuitively, migration prices depend on the destination, with the location choice of immigrants highly correlated with the income opportunities (Mayda, 2010) and the presence of migrant networks (Epstein and Gang, 2006); the geographical and social proximity measured by the language proximity or the ethnic background (Fafchamps and Shilpi, 2013). Furthermore, it is also shown in the literature that immigration policies influence the choice of destination country (Pena, 2009; Bertoli et al; 2011).

3 Data

3.1 Design of the Survey

Given that existing literature has been unable to answer questions about African illegal migrants, a survey that can capture the characteristics and propensity of individuals to exit even legally is certainly warranted. Therefore, I undertake the project of conducting a survey in Senegal in order to examine the factors triggering illegal migration. This study was conducted in Dakar, the capital city. Since illegal migration from Africa has not been studied in great detail, the original data set produced from this survey can help to fill the gap in the literature and provides a unique opportunity to further understand this phenomenon.

There are four sections of the survey. First, I elicit a wealth of information about the socio-demographic and economic characteristics of the individuals. Second, I elicit the willingness of individuals to migrate legally or illegally, including the motivations involved. Third, the individuals are asked a detailed battery of questions about their preferred destinations. Fourth, I am interested in the willingness of the individuals to risk their lives or take financial risks, for example, by paying a smuggler.⁹I interviewed 400 individuals with a small team between November 2006 and April 2007. Prior to the

⁹See Appendix A.1 for the details of the questionnaire.

main survey, we conducted a pilot study to test the feasibility of the study. Moreover, given that questions were asked with closed answers, the pilot also allowed adjusting the proposed answers.

I made the sampling design considering various diversities in Dakar and across those neighborhoods and individuals. Based upon my aim of explaining illegal migration motivations, I made the stratification in order to identify different neighborhoods where people may have a high propensity to migrate; therefore, the survey was conducted in five major regions of Dakar.¹⁰ Consequently, I did not include rich regions in Dakar because it is very unlikely that people living in these neighborhoods consider migration and illegal migration in particular.¹¹ We interviewed 400 individuals across these different neighborhoods. We walked around during the day, stopping people in the streets in a complete random manner in order to administrate the questionnaire. We explained the goal of the study to them; moreover, with illegal migration being a sensitive issue, we provided them the assurance that their anonymity would be preserved to install a climate of confidence. We conducted the interviews in Wolof, which is spoken by the majority of Senegalese people, while on a few occasions we administrated the questionnaire in French.

3.2 Summary Statistics

Table 1 presents the summary statistics.¹² To measure people's willingness, we directly asked them: "Are you willing to migrate?" 367 individuals, representing 92% of the sample answer, responded positively to this question. I focus the analysis on individuals willing to attempt legal or illegal migration.

¹⁰These five regions are the University Campus and its surroundings. The second neighborhood is Fass, Medina and Geule-Tapee and the third is Guediawaye. The second and the third regions are mainly some popular neighborhoods. The fourth level of randomization is Sandaga, which is one of the main shopping areas in the city center. Finally, the fifth region was composed of Kayar, Thiaroye, Yarakh and Yoff.

¹¹These people are highly educated in most cases, much wealthier than the average population and have good living conditions in Senegal. Moreover, when they have to go abroad, they are able to provide reliable documents to consular officials and do not have an issue with travelling legally.

¹²See Appendix A.2 for definition of the variables.

In respect of those who wish to migrate, we asked the question: "If you are not able to migrate legally, are you willing to migrate illegally?"¹³ Out of the 367 individuals who wish to migrate, 222 report that they would only be willing to migrate legally, while 145 report that they would be willing to attempt illegal migration. The proportion of people who consider migration is high (92%) and warrants further discussion. While there was some variation across regions, the proportion of people who wish to migrate was high in all areas. First, this can be explained by the sampling design, with this figure reaching my goal of targeting the population with a high propensity to migrate. Second, this does not necessarily mean that all of these people will attempt migration, although some of them will do so. Therefore, this high number is a very strong indication of the degree of frustration concerning the economic conditions faced by the average Senegalese.

[TABLE 1 HERE]

Men represent 88% of the sample in Table 1, with this proportion being the same for both potential legal and illegal migrants. People reachable in the different neighborhoods were mainly male, which is consistent with my aim of reaching the population that has a high intention of migrating. Indeed, migration in Senegal is a phenomenon that mainly affects men. Across the sample, there is no difference between the willingness of men and women to migrate illegally. The average age is 26 years old, with a slightly lower (24 years) average of potential illegal migrants than that of potential legal migrants (27 years). The proportion of married people among potential legal migrants is double (32%) that among potential illegal migrants (17%). People with at least one adult male as a dependent represent 75% of the sample, while people with at least one male child, one female child or one female adult as a dependent account for more than 80% of the sample. These proportions

¹³The question is in this form because I assume that if people have the opportunity to migrate legally, they will naturally go towards this type of migration. In the Senegalese context, it is very likely that people attempting illegal migration have the perception that obtaining legitimate documents would be difficult for them. This can be due to characteristics such as their low level of qualifications, or the instability or weakness of their professional situation. Attempting legal migration would be a waste of time and therefore they restrict themselves to asking for legal documents.

are higher for potential legal migrants than for potential illegal migrants. The average education level is secondary, with 27% of people having reached this level. It is interesting to note that 55% of potential illegal migrants have a low level of education, whereas they represent 33% of potential legal migrants. Only 5% of potential illegal migrants have a university level, which is five times less than in the population of potential legal migrants. 57% of people live in a house that they or their family own, which does not greatly vary according to the legal or illegal consideration of migration. More people among the potential illegal migrants belong to the Mouride brotherhood¹⁴ (54%) than among the potential legal migrants (39%). Therefore, this religious dummy may play a role in the willingness to migrate illegally.

Used as a proxy of monthly income, average monthly expenditure is estimated at 73,604 Fcfa (112 Euros) for potential illegal migrants, which is slightly lower than for potential legal migrants (77,684 Fcfa or 118 Euros).¹⁵ In this paper, I measure income expectations by using a direct question, asking potential migrants: "How much are you expecting to earn each month in the destination country?" I find that expected wages are much higher for both potential legal and illegal migrants, although the average amount stated by the former group is higher (1,850,505 Fcfa or 2,821 Euros) than the latter (1,141,931 Fcfa, i.e. 1,739 Euros). Potential illegal migrants have more relatives who have migrated (86%) on average than potential legal migrants (66%). 79% of potential illegal migrants report that they will not give up on migration if there is a tightening of immigration policies in the destination countries, whereas this percentage is lower among potential legal migrants (62%). The summary statistics highlight the preferred destinations of potential illegal migrants as Spain, followed by Italy, the U.S. and France. 41% of potential illegal migrants prefer Spain, as opposed to only 18% of potential legal migrants, while 26% of potential illegal migrants prefer Italy, versus

¹⁴Mouride is a dummy equal to 1 if people belong to this religious brotherhood. Senegal is composed of 94% of Muslim people, 5% of Christian people and 1% of Animist people. Many Muslim people are affiliated to different brotherhoods headed by a spiritual guide, with Mouride being one of the most important brotherhoods in Senegal.

¹⁵Expenditures are considered more reliable and less biased than the level of the actual labor income, because people answer more readily about this variable.

15% in the case of potential legal migrants. Moreover, 16% of potential illegal migrants prefer the U.S. versus 31% of potential legal migrants, while 3% of potential illegal migrants prefer France, compared with 16% among potential legal migrants. Therefore, the method of migration appears also to differ according to the choice of destination country.

During the survey, I observed that there are three ways to migrate.¹⁶ The first method involves migrating legally by applying directly for a legal visa and paying the airfare, which is termed the "visa method". The second method is called the "canoe method", which involves paying a fee to a smuggler and using boats or routes towards Maghreb countries in order to penetrate into various destination countries illegally, often including Spain, Italy or France. Finally, the third method is called the "embassy method", which essentially means bribing someone who is linked to consular sections in Dakar to obtain legitimate documents. I consider the "canoe" and "embassy" methods as illegal. For a given destination country, I also gained the responses of the sample of potential migrants concerning the prices of different migration methods, with Table 1 showing the average price of all destinations for each method of migration. Due to the nature of the type of journey offered by the "canoe method", its probability of success is much lower than with the embassy method. Therefore, the price of this method is lower (419,090 Fcfa or 638 Euros on average for all destinations) than the embassy method (3,071,603 Fcfa, i.e. 4,678 Euros), which has the same probability of success as the legal method. According to the answers of those interviewed, the visa method price on average equals 829,785 Fcfa, i.e. 1,264 Euros.

[TABLE 2 HERE]

Table 2 presents the average prices for each method of migration and each destination country. I compute these average prices from the declaration of potential migrants who generally have good information on the current illegal migration prices. For each destination, I generate the average price for each

¹⁶During the survey, I noted that three different prices could exist for one destination, which in fact corresponds with the various ways of migrating. Thus, I classified each price according to the way of migration.

method of migration, and given the small sample size there is no variability across individuals for each country. However, the prices vary according to the different methods of migration considering all countries together (see Table 1). The t-test between the canoe prices and visa prices is estimated at 18.4567 and this t-test is equal to -49.7230. Both are significant at a level of 1%, signaling the difference between the prices depending on the different methods of migration. I compare these prices with those reported by press reports, discussions with some migrants, and people who have made some attempts. They correspond to the real prices in the market, except for the "visa method". The "visa method 1" corresponds to the response of potential migrants, while the "visa method 2" corresponds to the prices calculated from the average cost of the airfare according to the destination country, in addition to the visa fees. For most individuals, the likelihood of migrating legally is low, which implies that they are misinformed about the legal market and do not know the real "visa method" price.¹⁷

[FIGURE 1 HERE]

Interestingly, the vast majority of the sample (77%) of potential illegal migrants reported that they are willing to risk their life in order to emigrate. Accordingly, Figure 1 shows the distribution of their probabilities of death. When we asked how likely they were to die if they tried to migrate illegally to their preferred destination, potential illegal migrants reported that they are willing to accept a 25% risk of death at the median, which is substantial. Furthermore, the distribution also reveals that 37.83% of potential illegal migrants think that they have more than a 50% probability of death. These figures illustrate the strong attitudes of illegal migrants towards risk, highlighting that potential illegal migrants are at the minimum completely risk neutral. Moreover, they demonstrate the strong determination of these people to leave their home country whatever the risks and illustrate a large utility gap between remaining in Senegal and migrating.

¹⁷For the canoe method for the U.S., I only saw one press report that detailed a case of boat-people trying to reach this country. Moreover, for the case of Canada, only two respondents gave the prices for this destination and this kind of migration.

4 Econometric analysis and main results

4.1 Model specification

My main interest is to explore the relation between various characteristics and the likelihood of undertaking illegal migration. In order to empirically examine this, I estimate various simple probit models. The estimation function is specified as follows:

$$m_i = \begin{cases} 1 & \text{if } x_i\beta + z_i\theta + \alpha_r + \epsilon_i > 0 \\ 0 & \text{if } x_i\beta + z_i\theta + \alpha_r + \epsilon_i \leq 0 \end{cases} \quad (1)$$

Where m_i is the binary dependent variable, which equals one if individual i reports a possibility for illegal migration and 0 otherwise; x_i is the vector of socio-demographic and economic characteristics such as the logarithm of the monthly expenditures per capita, proxy of the average monthly wage of the individuals divided by the number of dependents¹⁸, gender, age, marital status, education level, gender of dependent children (dummy equals one if the individual has male or female dependent child), gender of dependent adults (dummy equals one if the individual has a male or female dependent adult), home occupation status (dummy variable for the individual and family who own the house where they are living) and indicator variables for religion and ethnic groups; β is the vector of parameters to be estimated.

Equation (1) also includes another vector of variables z_i that I use in the estimation of the discussion part (Section 5) to investigate the hypotheses discussed in the second section. These variables are related to the prices of migration, expectations of migrants, migrant networks (proxied by the existing relatives of migrants abroad), immigration policies and choice of destination country. θ is the vector of parameters to be estimated for these variables. As mentioned in the third section, there are mainly five areas in Dakar in which we collected the data. Consequently, I include in equation (1) five regional dummies (α_r) in order to control for the unobserved regional

¹⁸We divided the average monthly expenditures and the foreign expected wage by 1+ the number of dependents in order to consider the familial responsibilities of the individuals that may play a role on the way of migrating.

characteristics. Additionally, the error term ϵ_i is assumed to be normally distributed with zero mean and unit variance.

4.2 Main Results

In this section, I present how standard socio-demographic and economic characteristics of individuals are correlated with the probability of migrating illegally, with the results of the estimates presented in Table 3.

[TABLE 3 HERE]

The variable "married" is significantly different from 0 at a level of 1% and negative in all specifications (Column 1 to Column 4). Therefore, being married reduces the probability of migrating illegally compared with a non-married individual. The main reason is that married people have more familial responsibilities and ties and thus are less willing to take risks compared to single people. The consequences of attempted illegal migration will not only affect them directly but will also have some effects on their close relatives, such as their spouses.

The variable age is significant at a level of 5% and negative. Accordingly, the younger an individual, the higher their likelihood of migrating illegally, reflecting that young people are less risk averse than elderly people. Regarding the financial risk and high uncertainty related to illegal migration, it is very likely to find more young people among potential illegal migrants.¹⁹ The dummy "Mouride" is positive and significant, which means that belonging to this Muslim brotherhood increases the propensity to migrate illegally relative to the other religious categories. There are two main explanations for this effect. First, historically and culturally, "Mouride" people are great travelers. Moreover, work ethic is very important in their vision and they are known to be hard workers. In their ideology, it is important to find a job and work wherever it is possible. Second, and probably more importantly, relatives are essential in the Senegalese migrants' socialization (Fall, 1998),

¹⁹The observations are 343 instead of 367 because of missing values due to the monthly expenditures in Senegal.

with "Mouride" people constituting an important religious group with a large network abroad. This is an illustration of the network effect on the illegal issue that we will develop and specify in the second part of the empirical analysis.

In Column 2, the logarithm of the monthly expenditures per capita has a positive sign but is not significant. In Column 3, I introduce the level of education, while in Column 4 I introduce both the logarithm of the monthly expenditures in Senegal per capita and the level of education as explanatory variables. Results concerning the level of education show that the higher the education level of the individual, the lower their willingness to migrate illegally. In other words, highly educated people have a reduced probability of forming intentions for illegal migration, which suggests a negative selection of illegal migrants in the case of Senegal. Educated people have more opportunities to find a good job, to get out of poverty and above all to obtain legitimate documents and migrate legally. According to Chiswick (1999), visa rationing due to migration restriction can be based on selection criteria such as education or the qualifications of migrants, which influences a positive self-selection of migrants and thus enhances their labor market success. However, this favorable self-selection of migrants is less important for illegal migrants who often have a low education level. Moreover, due to the risk of apprehension and deportation, illegal migrants tend to invest very little in human capital.

Gender has a positive sign but is not significant. Moreover, the dummies for the gender and age of dependent people are not significant. Living in a house owned by the individual or their family has a negative sign in all estimates, which means that it reduces the willingness to migrate illegally, although this result is not robust when we control for the logarithm of the monthly expenditures per capita.

5 Discussion

In this part, I examine the relation between the socio-demographic and economic characteristics and illegal migration intentions in greater depth, ana-

lyzing the role of the triggering factors that are discussed in Section 2. I study how the price of migration, expectations, immigration policies and presence of relatives in the destination countries are correlated with the willingness of people in Senegal to migrate illegally.

5.1 Prices of Illegal Migration

[TABLE 4 HERE]

To my knowledge, this paper is the first to explore the relationship between the different prices evaluated according to the way in which to migrate and the willingness to migrate illegally, at least in the specific context of sub-Saharan Africa. Table 4 presents the estimates of the average price according to the destination country of the visa method 1,²⁰ the canoe method, the embassy method and all the prices without any distinction concerning the method of migration. For each method of migration, the price is calculated as the average price for each destination. The variable migration prices represents the entirety for all the destinations and without any distinction concerning the method of migration. These regressions control for all variables used in the specifications above. The variable log visa price (Column 1) is positive yet not significantly different from 0. For people who are willing to migrate illegally, the legal price will not influence their decision because it is very likely that these individuals know their low probability of obtaining legitimate documents due to their socio-economic characteristics. Subsequently, a high or a low legal price would not reflect a key element of their willingness to migrate illegally. The price of illegal migration methods, namely the canoe method (Column 2) and embassy method (Column 3), are significant and negative. However, when I put these both prices together (Column 4), the variable log canoe price remains negative yet not significant. One can assume that the price levels of one illegal method will influence the levels of price of the other within the illegal migration market. The nega-

²⁰I use the average price of each destination of the visa method 1 in the estimates, rather than the visa method 2, because it is on this price that individuals will base their willingness to migrate.

tive relationship between the price of illegal migration and the willingness to migrate illegally can be explained by the fact that migration, and illegal migration in particular, are expensive for people from the working class or even for a Senegalese from the middle class. For instance, the price of the embassy method is highly expensive and very discouraging for the poorest illegal migration candidates. The result of illegal migration prices is confirmed in Column 5, where I consider the role of all migration prices without any distinction concerning the method of migration. Furthermore, this variable also has a strong negative effect on the willingness to migrate illegally.²¹

5.2 Expectations

[TABLE 5 HERE]

Columns 1 and 4 of Table 5 present the role of expectations measured by the log of the expected monthly foreign wage per capita on the likelihood of migrating illegally. A higher expected wage in the destination country per capita is positively correlated with the consideration of illegal migration, thus supporting the hypothesis that high expectations lead to an increased willingness to migrate illegally. I argue that these expectations are often based on the perceptions of migrants concerning the earnings of their family and friends' relatives living abroad.

[FIGURE 2 HERE]

[FIGURE 3 HERE]

[FIGURE 4 HERE]

Figures 2, 3 and 4 compare the distributions of expected monthly foreign wages and the perceptions of family and friends' relatives wages for the whole sample of potential migrants, potential legal migrants and potential illegal migrants, respectively, with similar distributions in the three cases.

²¹The variation of the number of observation in Table 4 is due first to the missing values in the monthly expenditures and second to the fact that the price of the visa method 1 and the canoe method are unknown for United Kingdom and France, which explains the missing data for these variables.

For all potential migrants, the average relatives monthly wage is estimated at 1,305,055 Fcfa or 1,991 Euros, whereas their expected monthly wage is estimated at 1,567,466 Fcfa, i.e. around 2,390 Euros.²² On average, potential migrants in general and potential legal migrants in particular expect to earn more than their relatives who have previously migrated. When I compare between the expected foreign wages of potential illegal migrants and their perceptions of family and friends' relatives wages (Figure 4), it appears that the expectations of potential illegal migrants are very close to their perceptions, even if they are lower. The average expected monthly wage of illegal migrants is equal to 1,141,931 Fcfa (1,740 Euros) and their median expected monthly wage is 800,000 Fcfa (1,218 Euros). The important point here is to discuss why I argue that these amounts are high. If I take the example of Spain, which is the preferred destination of potential illegal migrants in the sample, the annual average income in this country of an immigrant coming from beyond the European Union is estimated at 9,319 Euros (around 777 Euros per month) in 2007 per consumption unit and 5,792 Euros (i.e. 483 Euros per month) per person (Instituto Nacional de Estadística of Spain)²³. However, one might assume that these amounts are low and should be put into perspective with the standards of living in Spain, for instance. Consequently, I go further with the comparison and take the example of France, which is the main destination with the highest living standards in Europe for Senegalese. According to the French National Institute of Statistics (INSEE), the median living standards in France in 2006 was estimated at 1470 Euros per month.²⁴ The net median salary for a full-time job of immigrants from sub-Saharan African countries in France was estimated at 1,400 Euros in 2010, as opposed to 1,550 Euros for the group of non-immigrants. All these amounts are related to immigrants with legal status. Therefore, it is relevant to assume that illegal migrants earn less than legal migrants and the amounts

²²The gap between the expected wages of potential legal migrants and their perceptions is more important than for potential illegal migrants. Potential legal migrants expect to earn more than their relatives (Figure 3), due to the fact that illegal migrants are aware of their condition of illegality and know that they will earn less compared to a situation where they would be legal migrants.

²³Source:www.ine.es

²⁴Source:www.insee.fr

expected above. Indeed, this argument is also consistent with the literature. First of all, one of the reasons for employers to hire illegal migrants it is that they can pay them a lower salary than their legal counterparts (Todaro and Maruzco, 1987). Secondly, due to their low skills (Chiswick, 1999), their shorter duration in the home country or their low job mobility (Koussoudji and Cobb-Clark, 2002), illegal migrants are more vulnerable in front of the employers, with their status of illegality per se explaining their lower wages (Rivera-Batiz, 1999).

5.3 Networks and information

Many respondents already have relatives in their preferred destination country and have an idea concerning the wages that they earn. The variable *relatives* is a dummy equal to one if the individual has members of his family, close friends or relatives who have migrated. Relatives and more widely migrant networks increase a person's willingness to migrate illegally (Table 5, Column 2 and Column 4). The information about expected foreign wages often comes from the perceptions of migrants concerning their relatives' earnings. Family and friends' relatives have a positive influence on the willingness to migrate illegally, helping to reduce migration costs; however, they also give a certain standard of living to their family left behind, providing them information about life abroad that may or may not be true, and can lead them to believe that success is guaranteed with migration.

5.4 Migration Policies

The variable *restrictive immigration policies* is a dummy equal to 1 if the potential migrant does not give up on migration if the immigration policies in the host countries are tight. Restrictive immigration policies mean that the conditions to enter host countries are made more difficult. This can relate to quotas of immigrants, their level of education and skills or stricter border controls of the host countries. This variable has a significant and positive sign (Table 5, Column 3 and 4), which means that tight immigration policies for entering host countries have a counterintuitive effect on the propensity

to migrate illegally. They deter those who are willing to migrate legally more than potential illegal migrants. This result suggests that restrictive immigration policies may be less efficient and can incite potential migrants to turn to illegal methods such as paying a smuggler or corrupting officials to obtain legal documents.

5.5 Destinations

[TABLE 6 HERE]

Destinations dummies are used to explore the role of the choice of the preferred destination country on the willingness to migrate illegally. I replace the four interest variables by countries dummies, because the choice of the destination countries mainly depends on the opportunities, the possibility of finding a job and consequently the expected wage in the host country, the presence of relatives who have migrated to this country and the perceived flexibility of the immigration policies in the host country. I exclude the migration prices that are estimated according to the destinations to avoid a multicollinearity issue. The results in Table 6 show that people who desire to go to Spain (Column 1) or Italy Column (2) have a higher likelihood of migrating illegally. By contrast, people who have the U.S. (Column 3), France (Column 4) or the United Kingdom (Column 5) as preferred destination countries have a lower probability of migrating illegally.²⁵ There are many explanations for these results. First, Spain and Italy are geographically more accessible and therefore less expensive than France or the U.S. by using illegal methods such as the "Canoe method". For instance, Hanson (2006) argues that the geographical proximity between the U.S. and Mexico makes illegal migration between those two countries easier. The second explanation is the size of the migrants' network, which is very large in those two countries. OECD statistics (2010)²⁶ show that the inflows of Senegalese people in Spain and Italy increased between 2006 and 2009, whilst remaining

²⁵Canada (Column 6) and the destination Other (Column 7) are not significant.

²⁶www.stats.oecd.org

stable in France. Finally, the third likely reason is the perception of different immigration policies by migrants. While Constant and Tien (2009) show that ex-colonial relations influence the destination country of skilled African migrants, it appears that historical links, cultural proximity and language hold less importance in the choice of destination country for illegal migrants. Indeed, despite historical and cultural links between France and Senegal,²⁷ many individuals report during the survey that the political line on migration to France is more difficult.²⁸ If migrants have the choice between different countries, they will choose the one with less restrictive immigration policies and where it is easier to enter. However, this does not necessarily mean that these people will give up on migrating illegally. Subsequently, stricter migration policies for entering host countries can modify the choice of the destination countries without eliminating the willingness to migrate illegally.

6 Conclusion

The aim of this paper is to provide a better understanding of the mechanisms behind illegal migration from Africa. First, it investigates how people's intentions or motivations are formed regarding the decision to migrate illegally by using an original survey among potential migrants in Senegal. Second, it empirically estimates the effect of illegal and legal migration prices on the willingness to migrate illegally. I first analyze the relation between the socio-demographic and economic characteristics of potential migrants, including their propensity to consider migrating illegally. I later examine the channels

²⁷For instance, France is a destination preferred by students who are largely legal migrants.

²⁸The tightening of French immigration policies during recent years has increased the interest for other destinations such as Spain or Italy (Fall, 2003). If I compare and replace Spain, for instance, in the context of 2006 and 2007, sorted out illegal migrants five times between 1985 and 2004 with the increase in labor demand due to the economic boom. Therefore, the legitimization of illegal migrants could generate additional flows and represent a supplementary motivation for people remaining in the country of origin and desiring to migrate. Of course, the situation was different in Spain and Italy since the beginning of the economic crisis of 2008 and even before.

of how the price of migration, the expected foreign wage, the potential migrant networks and restrictive immigration policies affect rationally illegal migration considerations.

Results show that potential illegal migrants are willing to accept a substantial risk of death (25% at the median), which suggests a large utility gap between migrating and remaining in Senegal. They tend to be young, single and with a low level of education. To my knowledge, for the first time in the literature, a paper is interested in the effect of the prices of illegal and legal migration on the willingness to migrate illegally in a sub-Saharan African context. I find that the price of illegal migration is negatively correlated with the illegal migration willingness, suggesting that the poorest are unable to migrate illegally. Biased expectations towards the popular destination countries increase the likelihood of migrating illegally; consequently, people may base a risky decision on incorrect information. There is a positive relationship between migrant networks and the willingness to migrate illegally, which may be due to the fact that relatives who have already migrated provide a true or false picture of their living conditions, which can increase the desire of potential illegal migrants. I also find that contrary to the initial objectives, restrictive immigration policies for entering host countries deter legal potential migrants more than their illegal counterparts. Finally, some particular destinations such as Spain or Italy are more attractive and more correlated with the likelihood of migrating illegally from Senegal than France, the U.S. or the United Kingdom. Historical links, cultural proximity and language matter less in the choice of the destination country. All these results reveal that potential illegal migrants make a rational decision ex-ante because they base their motivations on the beliefs that illegal migration is the option that will maximize their utility.

Collecting data about illegal migration is not an easy task and some caution is warranted in the interpretation of the results. However, this study provides a good starting point for understanding the motivations illegal migration from Africa, which is widely reported by the media yet relatively unexplored in terms of academic research. Our study opens future research avenues about the illegal migration market in Africa. As I report in this

paper, illegal migration starts first in thoughts, based upon the belief that success is only possible abroad. Consequently, immigration policies should be more focused on the formation of motivations, which reflect the first step of an illegal migration project. In the Senegalese case, a radical change may be necessary in the way of thinking and viewing migration as the unique way of succeeding.

References

- Adepoju, Aderanti, & Afrikainstitutet, Nordiska. 2008. *Migration in Sub-Saharan Africa*. Nordiska Afrikainstitutet.
- Arcand, Jean-Louis, & Mbaye, Linguère Mously. 2013 (July). *Braving the Waves: The Role of Time and Risk Preferences in Illegal Migration from Senegal*. IZA Discussion Papers 7517. Institute for the Study of Labor (IZA).
- Beauchemin, Cris, & Schoumaker, Bruno. 2009. Are Migrant Associations Actors in Local Development? A National Event-History Analysis in Rural Burkina Faso. *World Development*, **37**(12), 1897–1913.
- Bertoli, Simone, Moraga, Jesus Fernandez-Huertas, & Ortega, Francesc. 2011. Immigration Policies and the Ecuadorian Exodus. *World Bank Economic Review*, **25**(1), 57–76.
- Borjas, Georges.J. 1990. *Friends Or Strangers: The Impact of Immigrants on the U.S. Economy*. Basic Books.
- Burda, Michael C. 1993. The determinants of East-West German migration: Some first results. *European Economic Review*, **37**(2-3), 452–461.
- Chiswick, Barry R. 1999. Are Immigrants Favorably Self-Selected? *The American Economic Review*, **89**(2), pp. 181–185.
- Chiuri, Maria.C., De Arcangelis, Giuseppe, D’Uggento, Angela M., & Ferri, Giovanni. 2007. *Features and Expectations of Illegal Immigrants: Results*

- of a Field Survey*. Tech. rept. Child-Centre for Household, Income, Labour and Demographic Economics.
- Constant, Amelie F., & Tien, Bienvenue N. 2009 (Dec.). *Brainy Africans to Fortress Europe: For Money or Colonial Vestiges?* IZA Discussion Papers 4615. Institute for the Study of Labor (IZA).
- Dalen, Hendrik Van, Groenewold, George, & Schoorl, Jeannette. 2005a. Out of Africa: what drives the pressure to emigrate? *Journal of Population Economics*, **18**, 741–778.
- Dalen, Hendrik Van, Groenewold, George, & Fokkema, Tineke. 2005b. The effect of remittances on emigration intentions in Egypt, Morocco and Turkey. *Population Studies*, **59**, **3**, 375–392.
- De Haas, Hein. 2006. Trans-Saharan Migration to North Africa and the EU: Historical Roots and Current Trends. *University of Oxford*.
- Dolfin, Sarah, & Genicot, Garance. 2010. What Do Networks Do? The Role of Networks on Migration and "coyote" use. *Review of Development Economics*, **14**(2), 343–359.
- Epstein, Gil S., & Gang, Ira N. 2006. The Influence of Others on Migration Plans. *Review of Development Economics*, **10**(4), 652–665.
- Fafchamps, Marcel, & Shilpi, Forhad. 2013. Determinants of the Choice of Migration Destination. *Oxford Bulletin of Economics and Statistics*, **75**(3), 388–409.
- Fall, Abdou Salam. 1998. Migrants' long-distance relationships and social networks in Dakar. *Environment and Urbanization*, **10**, 135–146.
- Fall, Pape Demba. 2003. *Migration internationale et droits des travailleurs au Sénégal*. Tech. rept. UNESCO.
- Fall, Pape Demba. 2007. *Ndaraw, Sekka, Sidi Bara, Yéri et les autres. Enquêtes sur le mbëkk dans la banlieue dakaroise*. Tech. rept. Communication au Séminaire de la Commission scientifique de l'IFAN Ch. A. Diop

sur Barça ou Barsaq : quelles lectures des sciences sociales sur l'actualité des migrations internationales?

- Friebel, Guido, Gallego, Juan Miguel, & Mendola, Mariapia. 2011 (Aug.). *Xenophobic Attacks, Migration Intentions and Networks: Evidence from the South of Africa*. IZA Discussion Papers 5920. Institute for the Study of Labor (IZA).
- Friebel, Guido; Guriev, Sergei. 2013. Human Smuggling. *in International Handbook On The Economics Of Migration*, Forthcoming, Zimmermann, K. F. & Constant, A., (Eds.), Edward Elgar Publishing.
- Gathmann, Christina. 2008. Effects of enforcement on illegal markets: Evidence from migrant smuggling along the southwestern border. *Journal of Public Economics*, **92**(10-11), 1926–1941.
- Hanson, Gordon H. 2006. Illegal Migration from Mexico to the United States. *Journal of Economic Literature*, **44**(4), 869–924.
- IOM. 2010. *World Development Report 2010: The Future of Migration: Building Capacities for Change*. International Organization for Migration.
- Knight, John, & Gunatilaka, Ramani. 2010. Great Expectations? The Subjective Well-being of Rural-Urban Migrants in China. *World Development*, **38**(1), 113–124.
- Kossoudji, Sherrie A., & Cobb-Clark, Deborah A. 2002. Coming out of the Shadows: Learning about Legal Status and Wages from the Legalized Population. *Journal of Labor Economics*, **20**(3), 598–628.
- Liebig, Thomas, & Sousa-Poza, Alfonso. 2004. Migration, Self-Selection and Income Inequality: An International Analysis. *Kyklos*, **57**(1), 125–146.
- Massey, Douglas S., & Espinosa, Kristin E. 1997. What's Driving Mexico-U.S. Migration? A Theoretical, Empirical, and Policy Analysis. *American Journal of Sociology*, **102**.

- Massey, Douglas S., Arango, Joaquin, Hugo, Graeme, Kouaouci, Ali, Pellegrino, Adela, & Taylor, J. Edward. 1993. Theories of International Migration: A Review and Appraisal. *Population and Development Review*, **19**(3), pp. 431–466.
- Mayda, Anna. 2010. International migration: a panel data analysis of the determinants of bilateral flows. *Journal of Population Economics*, **23**(4), 1249–1274.
- Mbow, Penda. 2008. *L'immigration clandestine: Le profil des candidats*. Tech. rept. Caritas Forum International de Dakar Migrations, Politiques et Droits de l'Homme.
- McKenzie, David, Stillman, Steven, & Gibson, John. 2012. A land of milk and honey with streets paved with gold: Do emigrants have over-optimistic expectations about incomes abroad? *Journal of Development Economics* (2012), doi:10.1016/j.jdeveco.2012.01.001.
- Melly, Caroline, M. 2011. Titanic tales of missing men: Reconfigurations of national identity and gendered presence in Dakar, Senegal. *American Ethnologist*, **38**(2), 361–376.
- Orrenius, Pia. 2004. The Effect of U.S. Border Enforcement on the Crossing Behavior of Mexican Migrants. in *Crossing the Border: Research from the Mexican Migration Project*, Jorge Durand and Douglas S. Massey, eds., Russell Sage Foundation.
- Orrenius, Pia M., & Zavodny, Madeline. 2005. Self-selection among undocumented immigrants from Mexico. *Journal of Development Economics*, **78**(1), 215–240.
- Pena, Anita Alves. 2009. Locational Choices of the Legal and Illegal: The Case of Mexican Agricultural Workers in the U.S.1. *International Migration Review*, **43**(4), 850–880.
- Riccio, Bruno. 2005. Talkin' About Migration: Some Ethnographic Notes on the Ambivalent Representation of Migrants in Contemporary Senegal.

- Stichproben. Wiener Zeitschrift für kritische Afrikastudien*, **5** (8), 99–118.
- Rivera-Batiz, Francisco L. 1999. Undocumented workers in the labor market: An analysis of the earnings of legal and illegal Mexican immigrants in the United States. *Journal of Population Economics*, **12**(1), 91–116.
- Sabates-Wheeler, Rachel, Taylor, Linnet, & Natali, Claudia. 2009. Great Expectations and Reality Checks: The Role of Information in Mediating Migrants' Experience of Return. *The European Journal of Development Research*, **21**(5), 752–771.
- Singer, Audrey, & Massey, Douglas S. 1998. The Social Process of Undocumented Border Crossing among Mexican Migrants. *International Migration Review*, **32**(3), pp. 561–592.
- Sjaastad, Larry A. 1962. The costs and returns of human migration. *Journal of Political Economy*, **70**(5), 80–93.
- Stark, Oded, & Fan, C. Simon. 2011. Migration for degrading work as an escape from humiliation. *Journal of Economic Behavior & Organization*, **77**(3), 241 – 247.
- Todaro, Michael P. 1969. A Model of Labour Migration and Urban Unemployment in Less Developed Countries. *American Economic Review*, **59**(1), 138–148.
- Todaro, Michael P., & Maruszko, Lydia. 1987. Illegal Migration and US Immigration Reform: A Conceptual Framework. *Population and Development Review*, **13**(1), pp. 101–114.
- Zaiceva, Anzelika, & Zimmermann, Klaus F. 2008. Scale, diversity, and determinants of labour migration in Europe. *Oxford Review of Economic Policy*, **24**(3), 428–452.

Figure 1: Probabilities of death reported by individuals willing to risk their life

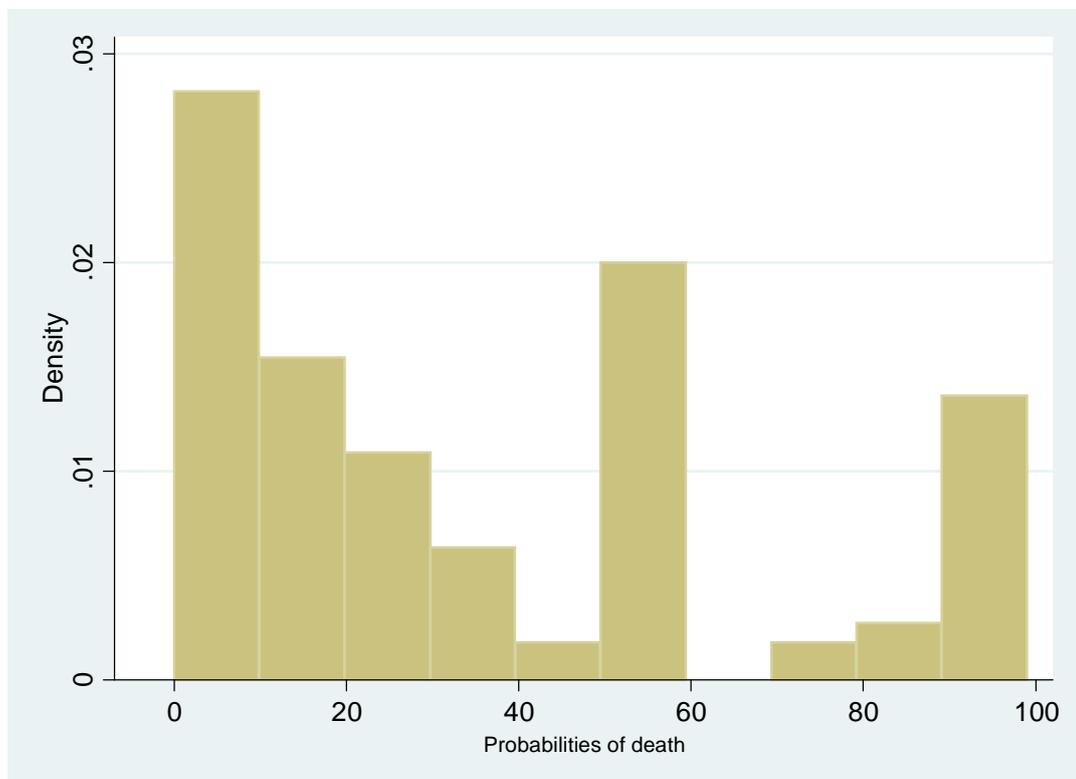


Figure 2: Income expectations and perceptions of potential migrants

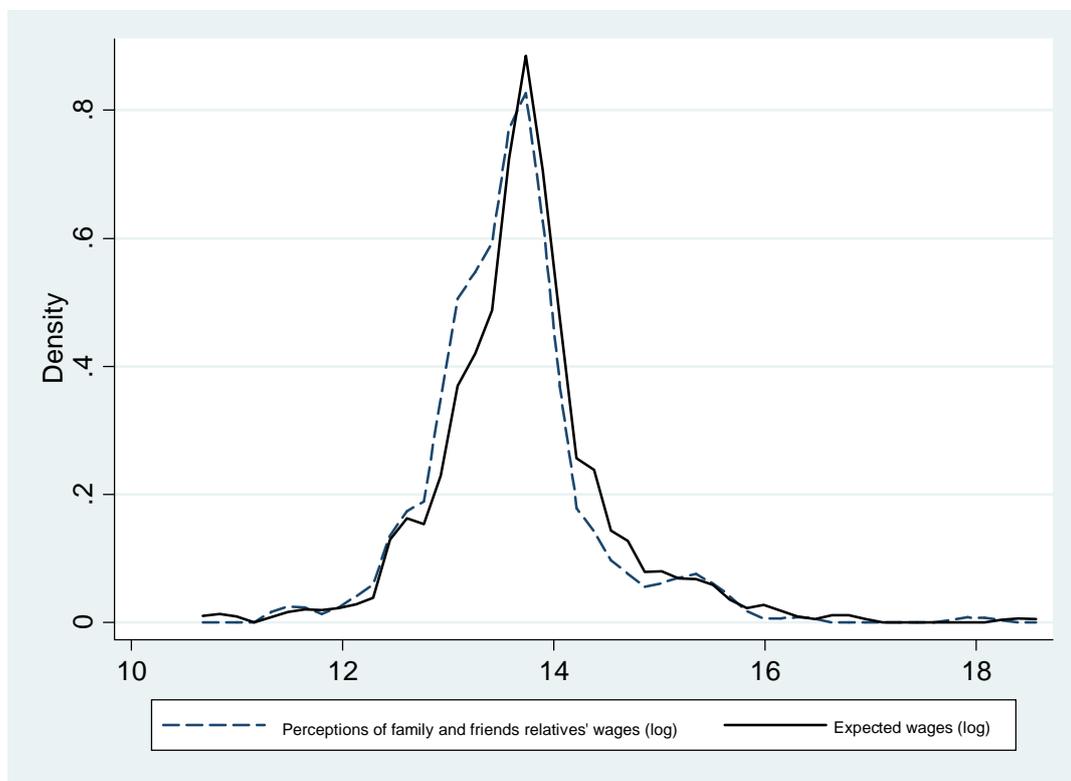


Figure 3: Income expectations and perceptions of potential legal migrants

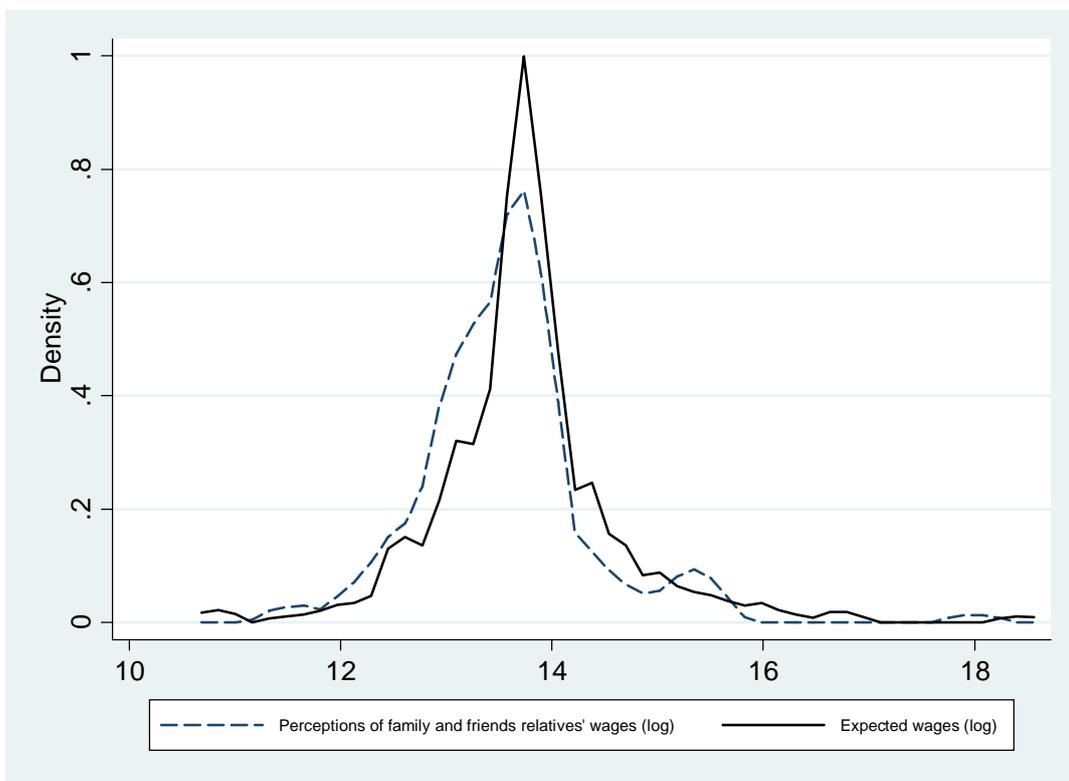


Figure 4: Income expectations and perceptions of potential illegal migrants

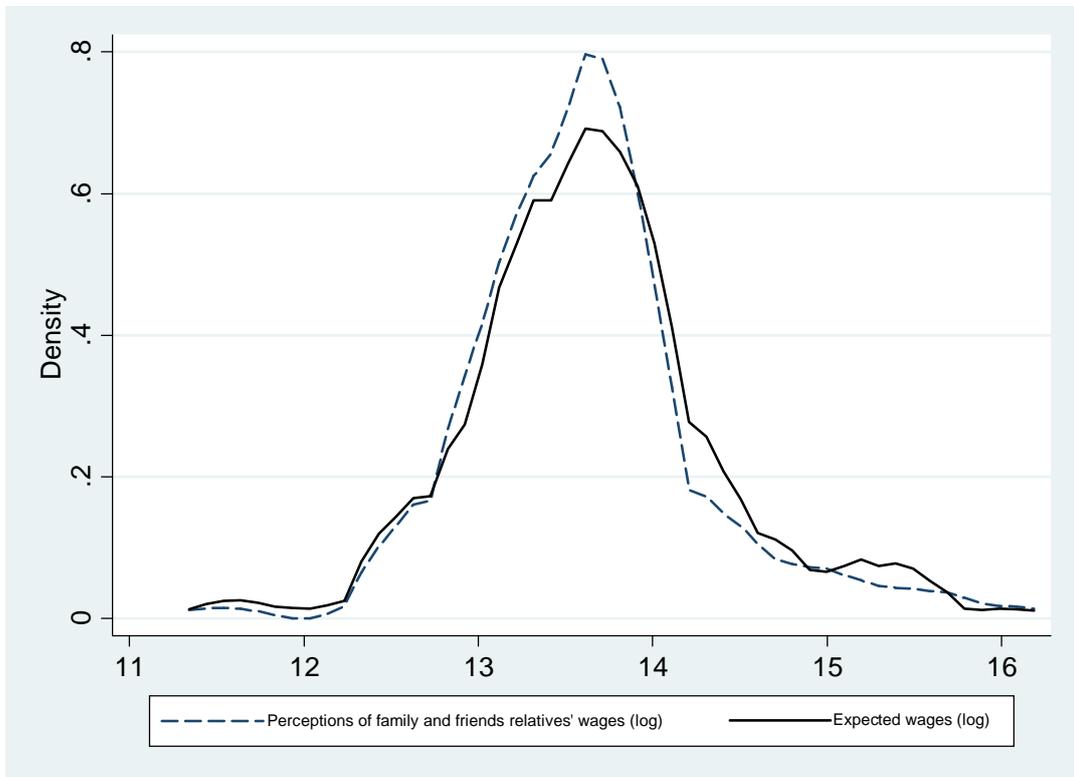


Table 1: Summary statistics

Variables	Legal migration		Illegal migration		Total	
	(N=222)		(N=145)		(N=367)	
	Mean	SD	Mean	SD	Mean	SD
Expected foreign wage	1,850,505	7,008,376	1,141,931	1,158,843	1,567,466	5,486,186
Expected foreign wage per capita	1,089,245	6,829,681	600,252.9	1,021,903	893,918	5,332,343
Wage in Senegal	77,684.68	66,006.94	73,604.35	62,840.70	76,054.93	64,698.93
Wage in Senegal per capita	20,678.40	15,647.79	22,690.14	18,800.45	21,481.92	16,979.35
Restrictive immigra- tion policies	0.62	0.49	0.79	0.41	0.68	0.47
Having relatives abroad	0.66	0.48	0.88	0.33	0.74	0.44
Spain preferred	0.18	0.39	0.41	0.49	0.27	0.44
Italy preferred	0.15	0.36	0.26	0.44	0.19	0.39
US preferred	0.31	0.46	0.16	0.37	0.25	0.43
France preferred	0.15	0.36	0.03	0.16	0.10	0.31
United Kingdom pre- ferred	0.06	0.24	0.03	0.18	0.05	0.22
Canada preferred	0.04	0.20	0.01	0.12	0.03	0.17
Anywhere preferred	0.11	0.31	0.10	0.31	0.11	0.31
Visa price					829,785.10	485,625.33
Canoe price					419,089.91	43,049.96
Embassy price					3,071 603	935,445.5
Migration prices					2,220,254	1,756,592
Male	0.88	0.33	0.88	0.32	0.88	0.33
Age	26.95	08.01	24.45	5.36	25.96	7.18
Married	0.32	0.47	0.17	0.37	0.26	0.44
Child is male	0.88	0.33	0.78	0.42	0.84	0.37
Child is female	0.89	0.31	0.78	0.42	0.85	0.36
Adult is male	0.79	0.41	0.70	0.46	0.75	0.43
Adult is female	0.84	0.37	0.84	0.37	0.84	0.37

Table 1: Summary statistics (continued)

Variables	Legal migration		Illegal migration		Total	
	Mean	SD	Mean	SD	Mean	SD
Education level						
Low education level	0.33	0.47	0.55	0.50	0.42	0.49
Secondary level	0.27	0.45	0.26	0.44	0.27	0.44
University level	0.24	0.43	0.05	0.22	0.16	0.37
Koranic school	0.16	0.37	0.14	0.35	0.15	0.36
Home owner	0.57	0.50	0.54	0.50	0.56	0.50
Mouride	0.39	0.49	0.54	0.50	0.45	0.50
Ethnic dummies						
Wolof	0.36	0.48	0.30	0.46	0.34	0.47
Lebou	0.16	0.37	0.23	0.42	0.19	0.39
Hal Pular	0.14	0.34	0.08	0.27	0.11	0.32
Serere	0.22	0.41	0.24	0.43	0.23	0.42
Diola	0.05	0.23	0.06	0.23	0.05	0.23
Manjack	0.01	0.09	0.01	0.12	0.01	0.10
Bambara, Mandingue, Sub-region	0.06	0.24	0.08	0.28	0.07	0.26
Region dummies						
Campus	0.17	0.38	0.02	0.14	0.11	0.32
Fass, Medina and Geule tapée	0.11	0.32	0.10	0.31	0.11	0.31
Guédiawaye	0.34	0.48	0.39	0.49	0.36	0.48
Sandaga	0.10	0.30	0.16	0.37	0.12	0.33
Kayar, Thiaroye, Yarakh and Yoff	0.27	0.45	0.33	0.47	0.30	0.46

Note: Amounts are presented in Fcfa and 1 Euro=655.96 Fcfa.

Table 2: Average migration prices according to the destination countries

	Visa method 1	Visa method 2	Canoe method	Embassy method
Spain	1,100,000	450,552	391,981	2,153,846
US	910,000	828,567	430,000	4,041,667
Italy	250,000	537,875	390,476	2,346,154
France	237,500	495,855	unknown	2,952,381
United Kingdom	unknown	543,390	unknown	3,700,000
Canada	200,000	873,377	600,000	1,850,000
Other	1,750,000		462,500	4,585,715

Notes: Prices are expressed in Fcfa. 1 Euro=655.957 Fcfa. This table presents the average prices for each destination and each method of migration. The Visa method 1 price is unknown for the United Kingdom and the Canoe method price is unknown for both France and the United Kingdom because no respondent was able to give these prices.

Table 3: Probit model for the willingness to migrate illegally: the role of the individual characteristics

	Marginal effects			
	(1)	(2)	(3)	(4)
Wage per capita		0.002 (0.06)		0.011 (0.27)
Education level				
Secondary level			-0.137** (2.26)	-0.129** (2.02)
University level			-0.290*** (4.17)	-0.336*** (5.26)
Koranic school			-0.114 (1.53)	-0.100 (1.28)
Male	0.075 (0.89)	0.102 (1.20)	0.112 (1.40)	0.130 (1.58)
Age	0.032 (1.01)	0.020 (0.63)	0.041 (1.29)	0.029 (0.91)
Age square	-0.001 (1.32)	-0.001 (1.02)	-0.001 (1.55)	-0.001 (1.23)
Married	-0.242*** (3.97)	-0.239*** (3.71)	-0.249*** (4.12)	-0.249*** (3.90)
Child is male	-0.074 (0.86)	-0.098 (1.08)	-0.082 (0.97)	-0.108 (1.21)
Child is female	-0.133 (1.40)	-0.138 (1.40)	-0.110 (1.14)	-0.117 (1.16)
Adult is male	-0.076 (1.05)	-0.060 (0.82)	-0.068 (0.92)	-0.050 (0.68)
Adult is female	0.097 (1.23)	0.098 (1.18)	0.106 (1.34)	0.107 (1.32)
Home owner	-0.109* (1.92)	-0.089 (1.53)	-0.098* (1.66)	-0.076 (1.26)
Mouride	0.138** (2.37)	0.136** (2.25)	0.124** (2.14)	0.125** (2.03)
Observations	367	343	367	343

Notes: The reference category of the variable education level is low education level. Ethnic and Region dummies are included in all estimates. Robust z-statistics in parenthesis: * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 4: Probit model of the willingness to migrate illegally: the role of the migration costs

	Marginal effects				
	(1)	(2)	(3)	(4)	(5)
Log canoe price (illegal)		-1.059** (2.53)			
Log embassy price (illegal)			-0.345*** (3.41)		
Log visa price (legal)				0.036 (0.89)	
Log migration prices					-0.321*** (8.83)
Wage per capita		0.024 (0.56)	0.013 (0.31)	0.030 (0.72)	0.038 (0.84)
	(1.14)	(0.77)	(1.17)	(0.84)	(0.67)
Socio-demographic variables	Yes	Yes	Yes	Yes	Yes
Observations	367	290	343	327	343

Notes: Robust z-statistics in parenthesis: * significant at 10%; ** significant at 5%; *** significant at 1%. All estimations include ethnic and regions dummies. Complete results available upon request.

Table 5: Probit of the willingness to migrate illegally: the role of expectations, relatives and migration policies

	(1)	(2)	(3)	(4)
Marginal effects				
Log expected wage	0.075** (2.31)			0.078** (2.25)
Having relatives abroad		0.144* (1.86)		0.155* (1.94)
Restrictive immigration policies			0.206*** (3.33)	0.200*** (3.21)
Log migration prices	-0.340***	-0.314***	-0.333***	-0.345***
Socio-demographic variables	Yes	Yes	Yes	Yes
Observations	339	343	343	339

Robust z-statistics in parenthesis.* significant at 10%; ** significant at 5%; *** significant at 1%. All estimations include ethnic and regions dummies. Complete results available upon request.

Table 6: Probit of the willingness to migrate illegally: the role of destinations

	Marginal effects						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Preferred destination: Spain	0.216*** (3.19)						
Preferred destination:Italy		0.184** (2.39)					
Preferred destination:US			-0.163*** (2.64)				
Preferred destination: France				-0.269*** (3.75)			
Preferred destination: United Kingdom						-0.144 (0.98)	
Preferred destination: Canada							
Preferred destination: Other							0.047 (0.48)
Socio-demographic variables	(1.46) Yes	(1.45) Yes	(1.55) Yes	(1.01) Yes	(1.53) Yes	(1.57) Yes	(1.57) Yes
Observations	343	343	343	343	343	343	343

Robust z-statistics in parenthesis.* significant at 10%; ** significant at 5%; *** significant at 1%.

All estimations include ethnic and regions dummies. Complete results available upon request.

Appendix

A.1 Questionnaire of the Survey made in Senegal

Area.....

1. Gender of the interviewee: (1) Male (2) Female
2. Age of the interviewee ...
3. Marital status
 - (1) Single (2) Married (3) Widowed (4) Divorced (5) Other (specify).....
4. Ethnic group
 - (1) Wolof (2) Lébou (3) Hal Pular (4) Sérère (5) Diola (6) Manjaks (7) Other (specify) ...
5. Religious brotherhood
 - (1) Mouride (2) Tidjiane (3) Layenne (4) Niassène (5) Catholic (6) Protestant (7) Other (specify) ...
6. Education level
 - (1) None (2) Primary (3) Secondary (4) University or Professional education (5) Koranic school (6) Literacy in a national language (7) Other (specify)...
7. Do you have an activity? (1) Yes (2) No
 - 7.1 If yes, which one?
 - (1) Craftsman (2) Fishman (3) Labourer (4) Hawker (5) Trader (6) Employee (7) Student (8) Retail trade (9) Other (specify) ...
8. Do you have any dependents? (1) Yes (2) No
 - 8.1 If yes, please help us to fill this table:

	Men	Women	Total
Children (<15 years old)			
Adults (>15 years old)			
Total			

9. How much do you earn each month?.....
10. What is your home occupation status?
 (1) Room (2) Apartment (3) Familial house (4) Rough House or slum
 (6) Other (specify)
11. Home occupation status of you and your family?
 (1) Home owner (2) Tenant (3) Other (specify) ...
 11.1 If you are tenant, what is the monthly amount of rent (in FCFA)
 ?.....
12. How much did you spend in the last week?
 Food ... Transport ...
 Health ... Other ...
 Education ... Total ...
13. Are you willing to migrate? (1) Yes (2) No
If no, acknowledge and stop the survey
 13.1 If yes, why? (many possible answers)
 (1) Poverty (2) Unemployment (3) Living conditions (4) Feeling of
 unfairness (5) To be useful to my family (6) To do the same thing as
 others (7) Other (specify)...
14. If this reason disappeared, would you still like to migrate?
 (1) Yes (2) No
15. If you are not able to migrate legally, are you willing to migrate ille-
 gally?
 (1) Yes (2) No

16. Will you forego the idea of migrating if immigration policies to enter the host countries were tightened?
 (1) Yes (2) No
17. Have you ever tried to migrate? (1) Yes (2) No
If no, go to question 20
 17.1 If yes, how many attempts have you ever made? . . .
 17.2 How much have you ever spent for these attempts? . . .
18. Where do you find the resources to migrate? (Many possible answers)
 (1) Temporary job (2) Savings (3) Gifts (4) Borrowing from relatives (5) Other (specify)....
19. Why don't you try to invest or start a professional activity with the amount collected? (Many possible answers)
 (1) Lack of qualification (2) No help or support (3) Too much corruption (4) Anyway, it will not work (5) Other (specify)....
20. To which country would you like to migrate?
 (1) Spain (2) United States (3) Italy (4) France (5) United Kingdom (6) Canada (7) Other (specify)...
- 20.1 Why? (Many possible answers)
 (1) More flexible migration policies (2) Earn money (3) Huge Senegalese diaspora (4) Family (5) Friends (6) Extended Relatives
 (7) Easier integration (language, culture...) (8) Easier access to jobs (9) Access to education and health care
 (10) Discovering anything else (11) Other (specify)...
- 20.2 What is the price for this destination (specify the type of prices)?
 . . .
21. How much are you expecting to earn each month in the destination country? . . .

If you are not willing to migrate illegally, go to question 27

- 22. How much would you be willing to pay to a smuggler if you were 100% sure of a successful migration?...
- 23. If you had 75% of probability of success, would you be willing to migrate? (1) Yes (2) No
 - 23.1 If yes, how much are you willing to pay to a smuggler?
- 24. If you have 50% of probability of success, are you willing to migrate? (1) Yes (2) No
 - 24.1 If yes, how much are you willing to pay to a smuggler?
- 25. If you had 25% of probability of success, would you be willing to migrate? (1) Yes (2) No
 - 25.1 If yes, how much are you willing to pay to a smuggler?
- 26. If you had 5% of probability of success, would you be willing to migrate? (1) Yes (2) No
 - 26.1 If yes, how much are you willing to pay to a smuggler?
 - . . .
- 27. How much would you accept to give up on migration and stay in Senegal?...
- 28. Are you willing to risk your life by migrating? (1) Yes (2) No
 - 28.1 If yes, what are your chances of dying?
- 29. Do you have family or friends' relatives who tried and succeeded to migrate? (1) Yes (2) No
 - 29.1 If yes, how much do you think that they earn in the destination country?
 - 29.2 If no, having some family or friends' relatives that do not succeed in migrating, was it discouraging for you? (1) Yes (2) No

A.2 Definition of variables

Variables	Definition
Expected foreign wage per capita	Expected wage in the destination country reported by potential migrant divided by 1+ the number of dependents
Wage in Senegal per capita	Measured by the total of monthly expenditures per capita (total of monthly expenditures divided by 1+ the number of dependents) considered as the proxy of the potential migrant's wage in Senegal
Restrictive immigration policies	Dummy equal to 1 if the potential migrant does not give up on migration if the immigration policies in the host countries were restricted.
Having relatives abroad	Dummy variable taking the value 1 if the individual has members of his family, close friends or relatives who have migrated
Preferred destinations:	The preferred destination country of the potential migrant
Spain	Dummy equal to 1 if the individual wants to go to Spain
Italy	Dummy equal to 1 if the individual wants to go to Italy
France	Dummy equal to 1 if the individual wants to go to France
US	Dummy equal to 1 if the individual wants to go to United States
United Kingdom	Dummy equal to 1 if the individual wants to go to United Kingdom
Canada	Dummy equal to 1 if the individual wants to go to Canada
Other	Dummy equal to 1 if the individual wants to go to anywhere: The potential migrant wants to go to Portugal or Switzerland or in the majority of cases, anywhere i.e the destination has no importance, he just wants to migrate
Visa price	Average price for each destination for the Visa Method (legal migration method)
Canoe price	Average price for each destination for the Canoe Method (illegal migration method)
Embassy price	Average price for each destination for Embassy Method (illegal migration method)
Migration prices	Prices for the different destinations and the different methods of migration without distinction between the methods of migration
Male	Dummy variable taking the value 1 if the individual is male
Age	Age declared by the individual
Married	A dummy equal to 1 if the individual is married
Child is male	Dummy equal to 1 if the individual has a male dependent child
Child is female	Dummy equal to 1 if the individual has a female dependent child
Adult is male	Dummy equal to 1 if the individual has a male dependent adult
Adult is female	Dummy equal to 1 if the individual has a female dependent adult

Definition of variables (Continued)

Variables	Definition
Education level	Dummies variables
Low education level	The reference group : in addition to those who have a primary level, it also includes people who received literacy lectures and those who received no education
Secondary level	The individual has a secondary level
University level	The individual has a university level or a professional education
Koranic school	The individual went to Koranic school
Home owner	Dummy equal to 1 if the individual lives in his own house or in a house belonging to his family
Mouride	Religious dummy equal to 1 if the individual belongs to the Mouride's brotherhood. The others brotherhoods are Tidiane, Layenne, Niassène, (which are all Muslims), Catholic, Protestant, Muslim who does not belong to any particular group, animist or without religion.
Ethnic dummies	For each ethnic group represented: Wolof, Lebou, Hal Pular, Serere, Diola, Manjack, Other (Bambara, Mandingue or Come from the sub-region (Guinea, Mauritania, Ivory Coast)
Region dummies	For each area of Dakar represented: University Campus and its surroundings; Fass, Medina and Gueule-Tapée; Guédiawaye; Sandaga; Kayar, Thiaroye, Yarakh and Yoff.