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Occupational Trajectories and Occupational Cost among Senegalese Immigrants in Europe

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ABSTRACT

This paper analyzes the mechanisms of occupational trajectories and occupational cost of migration among Senegalese immigrants in France, Spain and Italy. The occupational path of the Senegalese immigrants takes a U-shaped form, as a typical immigrant experiences an occupational decline upon arrival in Europe but then gradually improves his or her occupational attainment with duration of stay. Multivariate analysis reveals that education acquired in Europe has an especially important role for a more successful participation of immigrants in the labor market. Occupational score at the time of the survey is positively associated with number of years since migration, but the discrete-time analysis shows that the chances of experiencing an upward occupational mobility actually decrease with each additional year of stay in Europe. Senegalese men are more occupationally mobile than women. Number of years spent inactive or unemployed in Europe, having no language skills at arrival and having no work permit are all negatively associated with occupational attainment and mobility. The analysis shows that that there is a statistically significant occupational cost of migration, but it decreases with duration of stay in Europe.

1. INTRODUCTION

After decades of empirical migration research, it has become clear that migration decision-making process is affected by a complex and heterogeneous set of determinants. But, most migration researchers will agree that desire to maximize one's economic well-being is one of the principal factors influencing the decision to migrate, and some will advocate the view that it is the single most important factor. However, the empirical findings suggest that a large portion of immigrants endure a significant degree of economic hardship and vulnerability in their respective destination countries. While more often than not immigrants' absolute income rises as a result of migration, many immigrants do not seem to feel less deprived than they were in their origin country. As this paper deals primarily with experiences of Senegalese immigrants to Europe, it may be appropriate at this point to mention a study by Marfaing (2003), which reveals that a significant share of Senegalese immigrants residing in Germany would not choose to migrate to Europe again, nor would they advise the others to do so.

Also, the data used in this paper suggest that the subjective poverty among immigrants is higher in the first several years in the destination country than in the last year prior to migration: for example, while 27.22% of immigrants reported that they were at least partly economically deprived in the last year prior to migration to Europe, 34.93% felt the same in the first year after the arrival to Europe.

That immigrants earn less than the natives with similar characteristics is almost common knowledge. However, if the native-immigrant wage gap is decomposed into component parts, it turns out that immigrant disadvantage in occupational attainment is clearly more important source of the wage gap than is the direct wage discrimination. Constant and Massey (2005) look at mechanisms of native-immigrant earnings differentials in Germany and they find that the lack of country-specific skills and labor market segmentation are the primary causes of the primary causes of these differences, since they make the access to good jobs more difficult for immigrants. On the other hand, once the occupational index was controlled for in this study, there was very little evidence of direct wage discrimination in the process of earnings attainment. Similarly, Brodmann and Polavieja (2011) find that native-immigrant wage gap in Denmark decreases by about a half once they control for class. As the difficulties the immigrants encounter in the process of occupational attainment seem to be the key factor responsible for native-immigrant gaps in terms of standard of living, and given that African immigrants are one of the most disadvantaged groups in Europe's labor markets, the goal of this paper is to contribute to a better understanding of mechanisms of immigrant occupational trajectories by looking at experiences of Senegalese immigrants in France, Italy and Spain. Unless indicated otherwise, these three countries will be commonly referred to as Europe throughout the rest of the paper.

A common finding of previous similar studies is the so-called "U-shaped pattern" of occupational mobility among immigrants. More precisely, just after the landing in the destination country, the typical immigrant experiences some decline in occupational status. However it is expected that, with longer duration of stay in the destination, most immigrants will improve their occupational status somewhat relative to their first job in the destination. The U-shaped pattern has been found in numerous studies carried out in different receiving countries: see Green (1999) for Canada, Bauer and Zimmermann (1999) for Germany, Chiswick, Lee and Miller (2005) for Australia, Akresh (2006) for the USA, Rooth and Ekberg (2006) for Sweden, Simón, Ramos and Sanromá (2011) for Spain.

Most explanations of U-shaped pattern of immigrant occupational trajectories are centered around the concept of country-specific skills: upon arrival, immigrants' language skills are less than perfect, while their knowledge of the labor market and access to information are more limited than among the natives. It is important to note that the education acquired in destination country is also considered a country-specific skill and the empirical findings suggest that it is valued more on the labor market as compared to education acquired in the country of origin (see Friedberg, 2000). However, apart from the country-specific skills, some other factors may also facilitate or slow down the process of immigrant occupational mobility. For example, immigrants may be particularly affected by the degree of segmentation of the labor market in the destination country (see Piore, 1979). Furthermore, many immigrants (a large majority in the sample presented here) are required to obtain an appropriate work permit to access the labor market, which is seldom an easy task. Also, education credentials acquired abroad may not be recognized institutionally in the destination country and the

practice of some occupations may require a license specific to the destination country (i.e. attorneys, medical doctors, dentists). The subsequent upward mobility that a typical immigrant experiences is undoubtedly associated with the removal of the same obstacles that were responsible for the initial fall in occupational status. The immigrants improve their language skills, they have easier access to labor market-related information and many acquire additional education in the country of destination. Additionally, the legal status of immigrants improves with duration of stay so that the institutional factors become less of an obstacle too. Better jobs thus become more accessible than they were just after leaving the home country.

Of course, the pattern described above is that of an average immigrant. In reality, however, not all immigrants experience downward mobility upon the arrival. Among those who do, some experience only a minor occupational downgrading, while others will experience a more severe fall in the job score. It has been documented that it is especially more educated immigrants that are characterized by a low degree of human capital transferability, i.e. they tend to experience a particularly deep fall in the occupational status. In contrast, they will also experience the fastest upward mobility, partly because it is more profitable for them than for other immigrants to invest in additional human capital in destination (Duleep and Regets, 1997). Besides, different immigrant groups are faced with different contexts of reception (Portes and Borocz, 1989) and this is also reflected in their treatment in the labor market in general and the degree of skills transferability in particular. Simón et al. (2011) study of Spain shows that the immigrants from developed countries will experience a "shallower U" as compared to the immigrants from developing countries.
The rest of the paper is organized as follows. Main research goals and hypotheses are presented in Section 2. The aim of Section 3 is to make the reader more familiar with the social context of Senegalese migration to Europe. Section 4 describes the dataset as well as the measures of occupational attainment, while descriptive statistics on post-migration occupational trajectories of Senegalese migrants is presented in Section 5. Section 6 features a multivariate analysis of occupational attainment, while the results of discrete-time analysis of occupational mobility are presented in Section 7. The paper then moves on to the estimation of occupational cost of migration from Senegal to Europe in Section 8. Concluding remarks are presented in Section 9.

2. RESEARCH GOALS AND HYPOTHESES

The trajectory around which the empirical analysis will unfold in this paper is determined by three main research questions. The first question deals with the analysis of factors that affect the level of occupational attainment in the destination country. The specific feature of this paper is the fact that both documented and undocumented immigrants are included in the analysis and that we can actually distinguish between them by their legal status in the labor market. Appropriate selection models are employed to control for a possible bias due to selection into employment among immigrants. The second goal is to disentangle the patterns of upward and downward occupational mobility by applying appropriate discrete-time multinomial logit techniques. Finally, the last research question is whether there is an occupational cost associated with the act of migration. This is where an attempt is made to extend the

reach of similar previous research. While to the best of my knowledge previous studies only attempted to estimate short-term occupational cost of migration by comparing the last job in origin with the first job in destination, the aim here is to estimate occupational cost as a function of duration of stay in Europe. To achieve this goal occupational trajectories of non-migrants in Senegal are also included in the analysis.

Based on the theoretical models and empirical findings in similar studies so far and taking into account the extent of the information available in MAFE dataset, a number of hypotheses can be proposed and tested in this paper. First, since theoretical principle that shape U-shaped occupational pattern also apply to Senegalese immigrants in Europe, it is expected that the average occupational status in this group in the first year after the arrival will be lower than that in the last year prior to leaving country of origin. Gradual improvement of the occupational status is expected to take place with duration of stay in Europe. The second hypothesis relies on Friedberg's findings on transferability of skills and predicts that education acquired in the destination country (or elsewhere in Europe) will have a stronger effect on upward mobility and occupational attainment as compared to education obtained in Senegal (or elsewhere in Africa). The third hypothesis focuses on the legal status of immigrants in the labor market and states that, due to a limited access to the labor market in general, and to good jobs in particular, the undocumented migrants will be disadvantaged in terms of occupational attainment. On the other hand, obtaining work permit is expected to increase chances of upward mobility.

When looking at similar research done previously, one may have an impression that this paper looks at occupational mobility of immigrants from a somewhat reversed angle. While most other papers analyze several immigrant groups in a single destination country, quite the opposite is done in this paper, since it deals with occupational trajectories of a single immigrant group in three different destination countries. It is thus very likely that some readers would expect separate analyses for each destination country. However, the main limitation of the paper is a relatively small sample size, which impedes sample breakdown by education level or destination countries (which are only controlled for with country dummies). Nevertheless, the comparison of three destination countries is not the principal goal of the paper. Instead, the theoretical coordinates of the paper are centered around concepts such as limited transferability of skills and post-migration acquisition of skills specific to destination country, both of which apply to Senegalese immigrants in all European countries. As for sample breakdowns by other categories, it was possible to perform separate estimates by gender when looking at the descriptive statistics of occupational trajectories. Differences that emerge after separate estimates by gender are also briefly commented on in the section on occupational cost of migration.

3. SOCIAL CONTEXT OF SENEGALESE EMIGRATION

The migrations from Sub-Saharan to Europe have been on the rise in recent decades and chances are this trend will continue. When explaining the recent growth in the migrations out of Africa, Hatton and Williamson (2001) claim that "rapid growth in the cohort of young potential migrants, population pressure on the resource base, and poor economic performance are the main forces driving African emigration". As can be seen in Figure 1, according to the projections by the United Nations Population Division, the population increase on the African continent is expected to be substantial, especially in

the Sub-Saharan Africa, where population will increase by 50% between 2010 and 2030, while it is going to double between 2010 and 2050. The projections about population increase for Senegal are practically the same as those for the whole of Sub-Saharan Africa. It goes without saying that population increase is expected to go hand in hand with the increase in migratory pressure from this region. Demographic forecasts in combination with bleak economic prospects for the region prompt Hatton and Williamson to conclude their 2001 paper stating that "indeed, there is an excellent chance that by 2025 Africa will record far greater mass migrations than did nineteenth century Europe".

While the ongoing population increase can arguably be considered a common feature of Sub-Saharan countries, these countries clearly differ in terms of most other socio-economic parameters. The 2010 Human Development Report published by the United Nations Development Programme (UNDP) contains a set of indicators that may serve as good instruments for a better understanding of socio-economic circumstances under which around 14 million Senegalese live, but are also useful for the sake of comparison with other Sub-Saharan countries. Senegal's Human Development Indicator (HDI) is slightly higher than that of the whole region. Life expectancy in Senegal is four years higher than the regional average, but with the mean of only 3.5 years of schooling Senegal is placed below the Sub-Saharan average in terms of education. The country's income-based HDI (measured by GNI-PPP) is just below the regional average. Senegal can be considered a relatively stable country with only some low-intensity conflicts in the southern part of the country. At the same time, it is also a country with both a long emigration tradition and a high current rate of emigration. Ratha and Zhimei (2007) estimate the figure of the Senegalese living abroad in 2005 at around 463,000. Around 46% of Senegalese expatriates lived in Europe, while more than 40% lived in other African countries (cited in Gerdes, 2007). Among the former, most of them lived in the countries studied in this paper: France (73,500 Senegalese-born in 2007, INSEE), Italy (72,600 Senegalese nationals in 2009, ISTAT) and Spain (60,000 Senegalese-born in 2009, INE)[1]. While the size of Senegalese-born population in these three countries seems to be very similar, the timing and the roots of migration movements to each of three destinations are fairly different. The link between Senegal and France emerged as a result of the colonial past and a strong French influence on Senegalese administrative and education systems. Actually, the migration of the Senegalese to France is a typical example of what Massey et al. (1993) label "ideological links", when explaining the mechanisms of international migrations. Therefore, a comparison can be made with Indian or Pakistani community in Britain, Indonesian immigrants in the Netherlands or Maghrebi population in France. These ideological and cultural links caused uninterrupted migration movements towards the former colonial power also after the independence of Senegal. In contrast, migratory movements to two other destination countries under study in this paper began more recently. Italy became an attractive destination during the 1990s when many Senegalese looked for work in tourism and industry in northern Italy. Several years later, at the turn of the century, labor demand in construction and agricultural sector made Spain a popular destination for the Senegalese immigrants (Gerdes, 2007).

While the three destination countries differ substantially in terms of their immigration tradition and the origin of the immigrant population, they also share some important

[1] French and Italian figures only include documented migrants, while Spanish data also include undocumented Senegalese.

common features, as far as the immigrant integration into the labor market is concerned. Bernardi, Garrido and Miyar (2011) and Fullin and Reyneri (2011) found in their studies of Spain and Italy, respectively, that even after controlling for observable characteristics, immigrants are strongly and persistently disadvantaged as far as the access to skilled occupations is concerned. To the best of my knowledge, no study of occupational attainment among the foreign-born in France has been made available, but OECD (2008a) report identifies French labor market as not particularly welcoming in terms of the access to employment for recent immigrants. The three destination countries are also similar in terms of skill level of immigrant population since the share of the low skilled in the total immigrant population of each country is among the highest in EU-25 countries (from 36.3% in Spain to 44.9% in France), only to be compared with that in Greece and Portugal (OECD, 2010). All three countries are also characterized by a relatively high share of the foreign-born in the low skilled labor force. One can also see a significant degree of overlap when looking at sectoral breakdown of immigrant employment in France, Italy and Spain (OECD, 2008b). Specifically, in all three countries the immigrant workers are overrepresented in construction, catering and housekeeping sectors. Also, the immigrant share of employment is especially high in Spanish agriculture sector as well as in Italian mining and manufacturing sector.

4. DATA, MEASUREMENT

MAFE, an acronym for "Migrations between Africa and Europe", is a project which brings together six European and three African universities with the aim to explain the mechanisms of migrations out of Africa as well as to shed light on socio-economic standing of migrants in destination countries. The data used in this paper stem from the "Senegalese sample" of MAFE. The dataset captures life-course trajectories of Senegalese immigrants to France, Italy and Spain, but also, very importantly, those of non-migrants and migrants who had returned to Senegal before 2008. Around 600 immigrants from Senegal were interviewed in France, Italy and Spain, while around 930 non-migrants and 70 return migrants were interviewed in the region of Dakar. European labor market history of the return migrants interviewed in Senegal is also included in the descriptive and multivariate analyses.

The data in MAFE refer to immigrants' experiences in different countries. Therefore, in order to make comparisons of occupational status across countries it is necessary to use an internationally comparable scale. In this paper the occupational status will be measured by the International Socio-Economic Index (henceforth referred to as ISEI), which was developed by Ganzeboom and Treiman (1996). ISEI is not to be confused with measure of occupational prestige, such as SIOPS, which is a measure based on popular evaluation of occupations. On the other hand, ISEI ranks occupations by averaging status characteristics of job holders, most often their education and earnings, and can therefore be understood as an indicator of the cultural and economic resources that are typical of the holders of a certain occupation. The basis for ISEI was ISCO-88 occupational classification, adopted by the International Labor Organization (ILO). More precisely, each ISCO-88 occupational code is assigned an ISEI index on the metric scale between 16 and 90. However, the ILO has recently adopted a revised occupational classification, ISCO-08, which also prompted development of a revised occupational status scale, ISEI-08. The more recent version of ISEI is constructed using a new database, which is cross-nationally more diverse than the database used for the earlier version of ISEI. Also, while previously only men's earnings were used to

construct ISEI indices, the more recent version is based on data on both men and women. It was believed that the more recent version of ISEI is more appropriate, and will therefore be used in this paper.[2] In line with the approach used in similar literature, all changes in job scores will be expressed as absolute differences rather than percentages. It should also be pointed out that a somewhat generous definition of occupational mobility is applied in the paper: any positive change in ISEI, even if only by one point, is considered upward occupational mobility, while any negative change between two periods is considered downward mobility. All analyses reported in the paper refer to the Senegalese-born immigrants between 25 and 65 years of age at the time of the survey.

5. DESCRIPTIVE STATISTICS

This section seeks to answer whether there is actually a U-shaped pattern of occupational attainment among Senegalese in Europe and, if yes, how deep it is. The depth of the U-shaped pattern is expected to be affected by two major factors, each working in the opposite directions. The transferability of skills varies greatly among the immigrants groups since their respective origin countries are characterized by different degrees of similarity with destination country in terms of culture, language, labor market structure or educational system. In general, however, immigrants from developed countries have a flatter U than immigrants from developing countries and we can thus expect that African immigrants will be penalized more on European labor markets as compared to immigrants from more developed regions of the world. So, in terms of the transferability of skills, one should expect the Senegalese immigrants to have a deep U-curve. On the other hand, a significant share of Senegalese immigrants was employed in elementary and other low status occupations prior to migration (see Table 3). This fact is expected to flatten the U-curve for the simple reason that it is very likely that any job they find in Europe will score the same or higher as measured by ISEI.

Figure 1 shows average level of occupational status before migration and at several points after landing in Europe. As expected, there is a U-shaped pattern for the Senegalese in Europe too: while immigrants' occupational status drops just after the arrival (by slightly less than 7 points on average), it gradually improves with duration of residence. Nevertheless, even after 10 years of stay it is on average lower than it was in the last year before the migration.

Figure 1 about here

The predictions of the average occupational attainment before and after migration have been fulfilled, as the figure above shows. But, the figures presented above are averages and mask substantial heterogeneity in immigrants' experiences in the process of integration into European labor markets. Table 1 reveals that only around a half of immigrants experience a drop in occupational status as a result of moving to Europe, while the occupational status of every fourth immigrant actually increases. Differences

[2] The use of new scale in this paper has been permitted by its author, Harry Ganzeboom. For details on how the new scale is related to the earlier one see the author's website: http://www.harryganzeboom.nl/isco08/index.htm

between men and women in terms of the change of occupational status after the migration to Europe seem to be of a rather modest magnitude.

Table 1 about here

When making a comparison of immigrants' occupational attainment in the first year in Europe with that in the subsequent years, two trends become evident, as can be seen in Table 2. First, in spite of the gradual improvement of average ISEI scores with duration of stay in Europe, a significant share of African immigrants seem not to be able to move upward from their initial post-migration positions. Relative to the first post-migration job, only slightly more than a quarter of immigrants experience upward mobility by the end of the fifth year in Europe. Second, Senegalese women are less likely to experience some upward mobility in the first five years of stay in Europe as only 15.63 percent manage to do so.

Table 2 about here

Table 3 presents a distribution of occupational categories in the last year prior to migration as well as in the first year in Europe[3]. The occupational categories are defined according to ISCO classification, but a separate single category is added for the inactive and unemployed. It is noteworthy that, with the exception of four immigrants who worked as managers prior to migration, all other occupational categories indicate a relatively high rate of transition to elementary occupations in the first years after the migration: almost twice as many immigrants were employed in elementary occupations in the first year in the destination country as compared to the last year in the home country. This is undoubtedly an important source of the average decline in occupational status after migration.

Table 3 about here

6. POST-MIGRATION OCCUPATIONAL ATTAINMENT

Previous research has shown that the first occupation after arrival in the destination country is the single most important determinant of the subsequent occupational trajectories among migrants (see McAllister, 1995). Therefore, in order to gain a better understanding of the process of occupational attainment among the Senegalese in Europe, it is believed to be necessary to perform adequate analyses of both the first occupation and the current occupation in Europe. Dependent variable is ISEI index, whereas independent variables can be classified into several groups. First, a set of standard socio-demographic characteristics is included. These variables, such as *gender*, *age* (and *age squared*) and *education level* are considered important predictors of occupational attainment for natives as well. Education level is measured on a continuous scale from 0 to 20 and details on what each value on the scale stands for can be found in Table A1 in Appendix. Whether the respondent has acquired some European education credentials in order to attain the reported education level is indicated by a separate variable *years of education in Europe*. The variable *network* controls for the possible effect of personal networks in the process of occupational

[3] The totals represent absolute numbers, while the numbers in the inner cells of the table are expressed in percentage terms.

attainment and is equal to one if the respondent has another immigrant friend living in the same country at the time of the survey. Legal status in the labor market is indicated by a dummy for an immigrant without a valid work permit. Finally, a set of variables is constructed using information on labor market history of the Senegalese immigrants. *Worked in Africa* indicates whether having at least some pre-migration work experience affects current job score and, if yes, in what way. The role of duration of stay in the destination is famously associated with the research on immigrant labor market integration, but some researchers, such as Husted et al. (2001), asserted that the length of labor market attachment in the destination also matters in this context. This is why the variable *years spent inactive or unemployed in Europe* is also introduced into the model: it measures how many years after migration the immigrant spent out of the labor market and out of education, conditional on being older than 15. Apart from the variables mentioned above, which are included in both models, *duration of stay in Europe*[4] and *ISEI score at the first job in Europe* are also included in the analysis of the current job score[5]. All observations in the first regression refer to the first year of respondents' labor market experience in Europe, so that additional controls for time period, i.e. decade dummies, are introduced into Model 1. In the second regression, all observations refer to the year 2008. Obviously, several explanatory variables are based on experiences of immigrants in the whole European continent rather than only in the current country of residence. But, including two variables at the same time, one of which reflects immigrants' experiences in whole Europe, while the other only refers to his or her experiences in the current country of residence would inevitably lead to collinearity problems. Therefore, a choice was made to keep only the first variable in the model as it is assumed that a Senegalese immigrant who arrives to some European country after having spent some years in another European country has some advantages relative to an immigrant coming directly from Senegal. Why should we believe that this is the case? First, immigrants residing in other European countries should have easier access to information, all else equal. Second, while employers may discriminate against work experience and education received abroad, the level of discrimination varies significantly with regard to part of the world in which the experience was received (see Friedberg, 2000). In other words, most European employers will place more value on work experience and education acquired in another European country as compared to those acquired in Senegal or elsewhere in Africa. Table A2 in Appendix reports mean values of selected variables of the sample used to analyze the occupational status at the time of the survey. The characteristics of the sample of the employed Senegalese at time of survey are presented in Table A1 in Appendix. Unsurprisingly, the sample is male-dominated. Education inequality seems to be high as compared to that of native population in destination countries: the share of immigrants with no schooling at is almost the same as the share of immigrants with at least some post-secondary education. However, even though the education in Europe is hypothesized to be one of the key tools in the process of post-migration occupation attainment, only 13% of the sample members received at least some education in Europe. Among those who do, the mean value of years of education in Europe is 4.7. The average duration of stay in Europe among respondents was around 13 years at the

[4] Duration of stay is calculated as years since the first migration to Europe (YSM) subtracted by the number of years the respondent spent outside Europe since the first migration. For most respondents in the sample, the values of YSM and duration of stay in Europe are the same.

[5] Due to collinearity, duration of stay cannot be included when analyzing the first occupation after migration: the value of the variable is equal to the sum of education years spent in Europe and years spent inactive in the labor market in Europe.

time of the survey. Around three quarters of the sample members report to have had some pre-migration work experience, whereas the average number of years inactive or unemployed in Europe is 0.83 years. The language skills upon the arrival are relatively equally distributed along the proficiency scale. Approximately one out of five immigrants did not have work permit in the destination at time of survey. Approximately, every third respondent had no children at the time of the survey, while one out of four respondents had one child.

Models including ISEI score of the last job in Africa as another independent variable were also estimated. This implies that these models only include those immigrants with at least some pre-migration work experience. However, net of other things, no significant association was found between the last occupation in Africa and the occupation at the time of the survey in Europe. To conserve space, these regressions are not reported here.

6.1. Results – OLS Estimation

The first column of Table 4 (Model 1) is the analysis for the occupational score at the first job in Europe. Holding all other variables constant, men's occupational level is higher by around two points. Higher education level enables the access to better jobs, but gains from the education are substantially more pronounced for immigrants who received some education in Europe prior to entering the labor market: all else equal (including education level), each year spent in education in Europe increases occupational level at the first post-migration job by almost two points. Language skills at landing are an important asset upon the arrival as the analysis suggests that fluency in the language of destination increases the first job score by almost seven points, if a comparison is made with an immigrant who arrived without any language skills. Having some African work experience is positively associated with the occupational level, but does not reach the significance level of 10%. Interestingly, the legal status is a poor predictor of the first occupation, net of the other variables in the model. It may also appear surprising that having an immigrant friend in the same country does not affect the outcome when looking for the first job after migration. However, the interplay of networks and labor market performance is a research question on its own, and, what is more, a complex one. It should thus be given more attention in the future research. Age, years spent inactive or unemployed in Europe and interactions of destination and time period are not significant either.

The second column of Table 4 (Model 2a) shows the outcome of the OLS analysis of the occupational status at the time of the survey, in 2008. As expected, occupational status at the first job in Europe is statistically significant and the coefficient of 0.57 stresses the importance of the first job for subsequent occupational trajectories. Each year in Europe results in a job score higher by 0.16, net of other things. In contrast, each year in Europe that the immigrant spent out of labor market and out of education reduces the occupational status by 0.43 points. There is no significant difference between men and women, while having no work permit reduces the occupational status by 3 points on ISEI scale. As far as other independent variables are concerned, the outcome is somewhat more similar to that in Model 1. Education level, years of education in Europe and language skills have a positive impact on occupational status, but the effect of these variables is now somewhat weaker. As in Model 1, there is no

evidence that age, networks and destination are significantly associated with the occupational status at the time of the survey.

6.2. Selection Issues

The analysis presented above does not take into account the fact that somewhat more than a fifth of survey respondents in Europe were outside the labor market at the time of the survey. Moreover, the selection into employment does not seem to be random: for instance, the descriptive statistics suggests that women are clearly more likely to choose to stay out of the labor market, whereas the mean age of the employed surpasses that of the non-employed. Therefore, Heckman selection model is used in order to test whether the mechanisms responsible for the selection into employment also have an influence on occupational attainment. In the selection equation, along with several variables used in the main model, also included is the number of children younger than 18 years of age as well as the interaction of female dummy and the number of children. The interaction variable is introduced because the number of children is not expected to have the same effect on the labor market participation decision for men and women. The regression results are given in the third column of Table 4 (Model 2b). It turns out that the estimates of occupational attainment would be biased without control for selection into employment, while the rho value of 0.82 suggests that unobservable factors that affect selection into employment are positively correlated with occupational attainment. The coefficients in the lower part of the third column explain the mechanisms of selection into employment. As expected, immigrant women and undocumented immigrants are less likely to be employed, while the number of children has different and statistically significant effects for men and women. Age and the squared term of age are both statistically significant predictors of selection into employment too. But, are there any important changes in the main model once we control for selection mechanisms? The coefficients in the upper part of the second column suggest that some changes indeed take place relative to the model without control for selection. First of all, the difference between men and women is now more pronounced and statistically significant: everything else the same, men's job score is higher by 3.02 points. Education level is positive, but no longer significant, whereas the effect of education years in Europe remains substantial. Another difference is found for age and the squared term of age, since they are now significant at the 10%-level. The effects of the lack of language skills and of unregulated legal status in labor market are still significant and somewhat stronger than in Model 2a. Other variables remain largely unchanged as compared to the model without control for bias.

Table 4 about here

7. CORRELATES OF POST-MIGRATION OCCUPATIONAL MOBILITY

Whereas the previous section focuses on the occupational attainment in the first and the last year of labor market participation in Europe, the goal of this section is to observe the complete labor market history after migration and examine the patterns of post-migration occupational mobility among the Senegalese migrants. The empirical specification is based on discrete-time multinomial logit model of competing risks. Except when mobility is not possible due to having a job with minimum or maximum ISEI index, each survey respondent with an employment is at risk of experiencing an upward or downward occupational mobility between any two periods t and $t+1$ that he

or she spends in Europe. If immigrant's job score increases, the dependent variable is assigned value 1, while if the occupational downgrading between the two periods is observed, the dependent variable takes value 2. In all other cases, the dependent variable is equal to zero and this value is also taken as base category in the estimation presented below. All independent variables refer to their values at time *t*, except for the change of legal status in labor market, which is assigned value 1 if an immigrant obtains work permit between the periods *t* and *t+1*. Note that the number of individuals in the analysis in this section is slightly bigger than in the previous analysis. This is due to two factors: 1) we now also consider European labor market trajectories of those immigrants who returned to Senegal prior to 2008, 2) also included is information on occupational history of those immigrants who were not employed in 2008, but were so at some point after migrating to Europe and before the time of the survey. Knowing that some Senegalese immigrants have moved from one European country to another and this being discrete-time analysis with information referring to all years after leaving Africa, a single "country dummy" was constructed that stands for all European countries other than France, Italy and Spain. As in the previous section, the model controls for the interaction of country dummies and decade dummies. Finally, it was believed to be necessary to take into account the fact that modern migration routes sometimes include returns to the origin country as well as repeated migrations to the destination so that, in order to capture this aspect of complexity of contemporary migration routes, an indicator for repeated migration is also included in the analysis. This implies that the periods *t* and *t+1* do not refer to two consecutive calendar years in these cases. Instead, period *t* stands for the last pre-return year in Europe, while *t+1* is the first post-return year in Europe.

Table 5 about here

As can be seen in Table 5, men are more occupationally mobile, both upwards and downwards. The general education level is statistically significant only for upward mobility, but education received in Europe is important for both facilitating upward mobility and impeding downward occupational mobility. More precisely, *ceteris paribus*, each year of education in Europe increases the likelihood of upward mobility by around 18% and reduces the chances of downward mobility by around 15.5%. While the descriptive statistics in the fifth section suggests that longer duration of stay in Europe increases the likelihood of having experienced at least some upward or downward mobility after the arrival, the discrete-time estimation shows that the chance of experiencing upward or downward mobility between two consecutive years actually decreases with duration of stay in Europe. This result can be interpreted as an evidence of cumulative inertia (McGinnis, 1968): the longer an individual stays in a particular state (place of residence, occupation, etc.) the less likely he or she is to move out of that state in the immediate future. Not too surprisingly, the number of years in Europe the respondent spent inactive or unemployed in labor market is positively correlated with the likelihood of experiencing downward mobility between two consecutive years. The results further suggest that the higher the job score at time *t* the lower the probability of upward mobility, and vice versa. This can be interpreted in the following way: the higher one is the less room there is to rise; the lower the score the more room there is to move upwards. The same logic can be applied to explain the positive and statistically significant link between the number of previous moves downward and the likelihood of experiencing upward mobility. Age is a poor predictor of occupational mobility, while the lack of language skills at arrival substantially increases the likelihood of downward

mobility. But, the effect is sizeable: all else equal, the immigrant who arrived without any knowledge of the language of destination country is more than twice more likely to experience downward mobility as compared to the immigrant who arrived with good language skills. As expected, obtaining work permit increases chances of upward mobility, but, somewhat less expectedly, it also increases the likelihood of downward mobility. A possible explanation of this result is that regulating one's status in labor market increases chances of job change substantially and some immigrants may switch to jobs that score lower on ISEI scale, but are perceived as more secure. An alternative explanation is that the immigrants may change to jobs that score lower on ISEI scale, but these jobs are not necessarily perceived as such by them. In an alternative specification, in which only a year-to-year change in ISEI equal to or larger than two is considered an occupational mobility, obtaining work permit is still positively and significantly associated with downward mobility, but the coefficient is substantially smaller in magnitude[6]. Return migration also increases the chances of occupational mobility, which can be explained in a very similar way as the effect of obtaining work permit: return migrants are simply very likely to get jobs different to those they had prior to leaving Europe. As in the previous section, having some African work experience and network effects are not significant predictors of occupational mobility. Variables representing the interaction of destination and time period are largely not statistically significant and are not reported in the table for the sake of space.

8. OCCUPATIONAL COST OF MIGRATION

It is safe to claim that on average, and measured in absolute terms, Senegalese immigrants earn more in Europe than they did back home prior to migrating. To what extent this difference holds if incomes adjusted by purchasing power parity are compared is less clear and would actually be an interesting research question on its own. However, apart from income and a wide range of other factors, individuals' subjective well-being is also affected by job characteristics. A number of studies have confirmed that over-qualification, whether formal or self-perceived, has adverse effects on various indicators of subjective well-being (see Green and Zhu, 2010, Vieira, 2005, Johnson and Johnson, 1996). As has been shown in previous sections, a substantial share of immigrants experiences a downward occupational mobility due to migration and it is highly unlikely that the occupational cost affects their perceived well-being in a positive manner, even if the drop in job score was anticipated prior to migration and deemed a compromise worth making. The adverse effect of the occupational cost on well-being may even intensify if the transnational nature of contemporary migrations is taken into account. In particular, modern immigrants tend to maintain their ties with the home country more often than before and, as a consequence, non-migrants at home are an important reference group for the migrants (for the empirical evidence see Akay, Bargain and Zimmermann, 2011). So, some negative effect on well-being may emerge as a result of the immigrants comparing themselves with the non-migrants in Senegal, the population which was not exposed to the risk of occupational cost of migration and is accordingly expected to have lower incidence of over-qualification relative to

[6]On the other hand, the coefficients of the other variables change only marginally in this alternative specification.

Senegalese migrants in Europe. The concept of occupational cost of migration has been dealt with in Raijman et al. (1995), but in their paper it was measured as the difference in occupational status in the first post-migration year and the last pre-migration year. However, this difference can only be considered a short-term occupational cost due to two reasons: 1) relative to their first post-migration job, most immigrants experience some upward or downward mobility in subsequent years in destination; 2) had they not migrated, the Senegalese immigrants would have been exposed to the dynamics of Senegalese labor market, which would have resulted in fairly different occupational trajectories for many migrants. The research aim in this section is to estimate Senegalese migrants' occupational cost of migration in a more dynamic framework, i.e. as a function of the duration of stay in Europe. Put another way, the question to be answered is how much in terms of occupational status Senegalese immigrants renounce by migrating to Europe, both in the short term and the long term. The estimation can be carried out by pooling the data on labor market trajectories of non-migrants in Senegal with those of both the pre-migration and post-migration occupational history of migrants. Having in mind different degrees of transferability of skills, it would undoubtedly be interesting to compare occupational costs for different education levels. However, given the limited sample size, this issue must be left for future research.

Migration theory suggests that whenever comparisons are made between migrants and non-migrants, one should take into account the issue of possible self-selection into migration. If this is not done in an appropriate way, we may be running a danger of obtaining biased results because self-selection is thought to be taking place along both observed (e.g. education) and unobserved characteristics, such as ability and motivation (see Chiswick, 1978, Carliner, 1980, Borjas, 1991). The bias may emerge because it is commonly assumed that personal characteristics that are positively correlated with likelihood of migration also enhance the labor market performance in the destination country. If it is assumed that these unobserved characteristics are completely or approximately time-invariant, the most suitable approach may consist in the use of individual fixed effects. The dataset is organized as a panel and the dependent variable is ISEI at the time *t*. The occupational cost of migration is then measured by introducing a categorical variable that indicates whether at the time *t* the respondent lives in Senegal or in Europe and, if the latter is the case, for how long he or she has been living in Europe (up to 5 years, 6-10 years, 11-15 years and more than 15 years). Nonetheless, by adopting fixed effects approach, another source of bias could emerge as a result of excluding variable gender, as due to its nature it cannot be included in a fixed effects estimation of occupational cost, while at the same time the same variable was identified as statistically significant in some estimations in previous sections. Therefore, another model will be introduced that is based on random effects estimation with Mundlak correction. Namely, it has been demonstrated that generalized least squares random effects estimation delivers results that largely correspond to those of fixed effects estimation, if means of all time-varying variables are introduced into the regression as additional covariates (Mundlak, 1978). So, apart from obtaining results that are an approximation of fixed effects, by adopting this approach it is also possible to keep time-invariant variables in the model. Other covariates in the model include age, the squared term of age, years of labor market experience since the age of 16, education level and decade dummies. The model does not control for education years in Europe, i.e. in this estimation the education attainment is treated equally regardless of where it was rec. Similarly, number of years of labor market experience refers to the total number of years that respondent spent employed since the age of 16, regardless of where he or she lived during that time. A certain number of respondents have

accumulated some work experience in African countries other than Senegal, but, since the aim here is to estimate occupational cost of migrating from Senegal to Europe, the information on occupational attainment in other African countries is excluded from the analysis. The findings are reported in Table 6.

Table 6 about here

Fixed effects and random effects with Mundlak correction yield almost identical estimates of occupational cost of migration. The results indicate that there is a statistically significant occupational cost of migration which decreases with duration of stay, but does not disappear completely even after more than 15 years in Europe. In contrast, the negative relationship between occupational cost and duration of stay suggests that after the initial drop in occupational score after the arrival, immigrants have more opportunities for upward mobility in destination as compared to non-migrants with similar characteristics in home country. Separate estimations for men and women (not reported in the table) reveal that the occupational cost of migration is slightly higher for women, but this difference is also falling with duration of stay. To illustrate, during the first five years in Europe the average occupational cost for men is 5.50 points, while for women it is higher by 1.30 points. On the other hand, after more than 15 years in Europe the corresponding figures for men and women are 2.70 and 2.80, respectively. In order to estimate occupational cost on a more continuous scale, the specification presented above is modified in a way that non-migrants are assigned the value of 100 for duration of stay in Europe. So, instead of the categorical variable, the model now includes duration of stay in Europe and its squared term. Both variables are statistically significant and the occupational cost curve estimated in this way is presented in Figure 3. Conclusions remain largely unchanged when a comparison is made with coefficients reported in Table 6.

Figure 3 about here

9. CONCLUDING REMARKS

Based both on prominent theories from migration research and on contextual characteristics of contemporary African migration to Europe, the paper attempts to answer research questions regarding the occupational attainment, occupational mobility and occupational cost of Senegalese immigrants to Europe, as well as to develop and test appropriate hypotheses.

The empirical analysis confirms all the three hypotheses proposed in the second section. First, the data on pre-migration and post-migration occupational mobility confirm the hypothesis on the U-shaped pattern of occupational mobility for the Senegalese immigrants in the sample. But, the improvement of the occupational status takes place slowly: by the fifth year of stay in Europe only one out of four immigrants experiences upward mobility relative to the first year after migration. Second, in comparison with the education acquired in the home country, education acquired in Europe is a more powerful instrument of occupational upward mobility. Third, having no work permit is associated with lower occupational attainment, while obtaining one increases the chances of occupational mobility substantially. Apart from these three findings, a number of other interesting results were obtained. As for the differences by gender, men's occupational status was found to be somewhat higher, all else equal. Also, men are more occupationally mobile, both upwards and downwards. While there is some

evidence that duration of stay in Europe is positively associated with the occupational attainment, the discrete-time analysis shows that the probability of experiencing an upward mobility actually decreases with each additional year of residence in Europe. Having some or good skills in destination country language upon the arrival facilitates the access to better jobs. There is very little evidence of differences between three destination countries, when these are measured by destination country dummies. Both fixed effects and random effects regressions show that there is a statistically significant occupational cost of migration from Senegal to Europe, which decreases with duration of stay, but does not disappear even after more than 15 years since migration. The occupational cost of migration is initially somewhat higher for women, but this difference diminishes with longer duration of stay in European countries.

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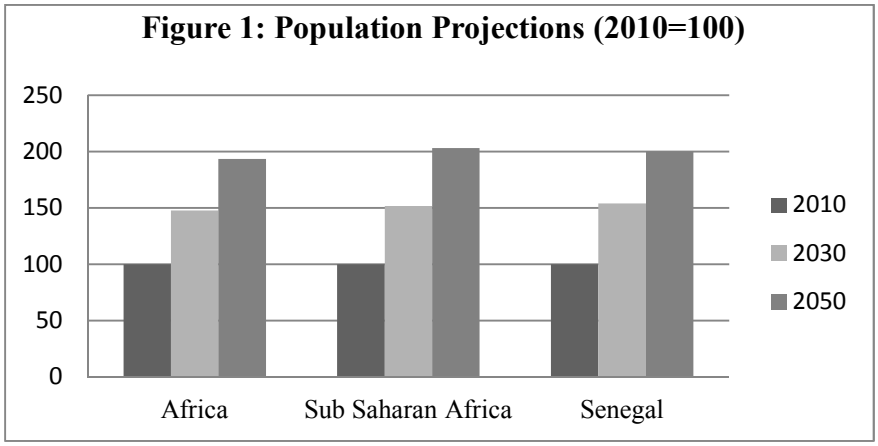
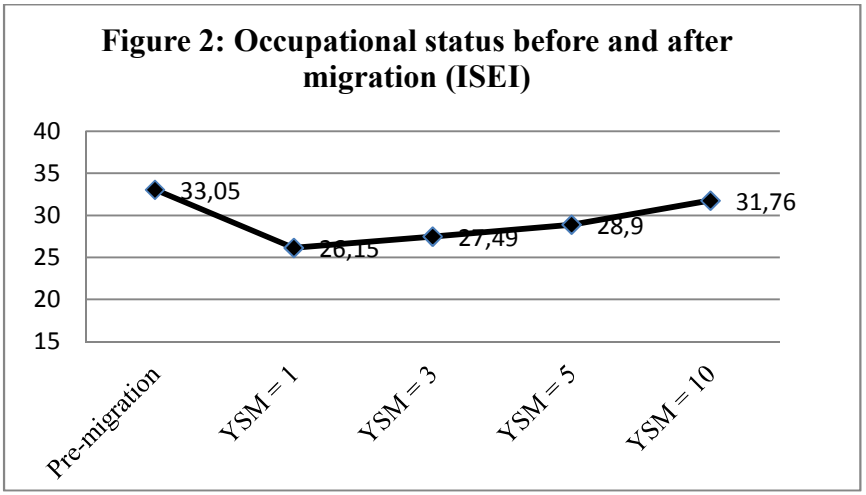
TABLES AND GRAPHS



Source: United Nations Population Division



Source: MAFE (weighted)

TABLE 1

CHANGE IN OCCUPATIONAL STATUS (IN %): COMPARISON OF OCCUPATIONS IN THE LAST YEAR BEFORE MIGRATION AND THE FIRST YEAR AFTER MIGRATION

	All	**Men**	**Women**
Downward	49.87	49.51	51.87
Upward	24.72	24.29	27.08
No change	25.41	26.20	21.05
N	**(298)**	**(208)**	**(90)**

Source: MAFE (weighted)

TABLE 2

CHANGE OF OCCUPATIONAL STATUS, COMPARED TO THE FIRST YEAR AFTER MIGRATION

	All	Men	Women
Between 1st and 3rd year			
Upward	14.77	16.28	8.17
Downward	8.04	8.19	7.41
No change	77.19	75.53	84.42
N	*(347)*	(222)	(125)
Between 1st and 5th year			
Upward	26.88	29.47	15.63
Downward	15.30	15.67	13.72
No change	57.81	54.86	70.64
N	(313)	(203)	(110)
Between 1st year and 2008			
Upward	38.13	39.48	31.48
Downward	18.08	17.83	19.29
No change	43.79	42.69	49.23
N	(338)	(223)	(115)

Note: Comparison between the first and third year, as well as that between the first and the fifth year also consider experiences of migrants who returned from Europe to Senegal before 2008. Excluding them does not affect general conclusions.

Source: MAFE (weighted)

TABLE 3

DISTRIBUTION OF OCCUPATIONAL CATEGORIES IN THE LAST PRE-MIGRATION AND THE FIRST POST-MIGRATION YEAR (ISCO CATEGORIES AND INACTIVE/UNEMPLOYED)

→ First post-migration year → ↓ Last pre-migration year ↓	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	**Total**
(1)	25.00	0	0	0	25.00	0	0	0	0	50.00	**4**
(2)	0	22.58	0	0	16.13	0	0	3.23	22.58	35.48	**31**
(3)	0	7.69	7.69	0	7.69	0	0	7.69	38.46	30.77	**13**
(4)	0	0	4.76	0	9.52	4.76	4.76	4.76	38.10	33.33	**21**
(5)	0	1.83	0	0	35.78	0	0.92	1.83	35.78	23.85	**109**
(6)	0	0	0	0	0	12.50	0	0	75.00	12.50	**8**
(7)	0	0	0	0	5.66	0	22.64	5.66	37.74	28.30	**53**
(8)	0	0	0	0	0	0	16.67	25.00	50.00	8.33	**12**
(9)	0	0	0.74	0	11.76	1.47	2.94	0.74	67.65	14.71	**136**
(10)	0	1.81	0.72	0.36	6.88	0.72	1.45	0.72	25.72	61.59	**276**
Total	**1**	**15**	**5**	**1**	**86**	**6**	**24**	**14**	**254**	**257**	**663**

Notes:

The totals represent absolute numbers, while the figures in the inner cells are expressed in percentage terms.Occupational categories are defined as follows: (1) Managers, (2) Professionals, (3) Technicians, (4) Clerical support workers, (5) Service and sales workers, (6) Skilled agricultural workers, (7) Craft workers, (8) Machine operators, (9) Elementary occupations, (10) Inactive and unemployed

Source: MAFE

TABLE 4
OCCUPATIONAL STATUS (ISEI) OF SENEGALESE IMMIGRANTS IN EUROPE

Occupation (ISEI)	**Model 1 First job in Europe**		**Model 2a Job in 2008**		**Model 2b Job in 2008**	
	Coeff.	**s.e.**	**Coeff.**	**s.e.**	**Coeff.**	**s.e.**
Male	2.027*	1.066	0.834	0.948	3.017***	1.019
Education level	0.299***	0.107	0.167*	0.095	0.124	0.092
Years of education in Europe	1.929***	0.331	0.988***	0.299	1.005***	0.281
Years of stay in Europe			0.153*	0.080	0.125	0.078
First job in Europe (ISEI)			0.567***	0.040	0.560***	0.039
Years inact. or unemp. in Europe	-0.072	0.244	-0.433**	0.217	-0.448**	0.205
Worked in Africa	1.678	1.269	0.622	1.127	0.581	1.051
Network	-0.442	1.255	-0.578	0.994	-0.302	0.974
Age	-0.306	0.584	0.270	0.416	0.778*	0.441
Age squared	0.004	0.009	-0.004	0.004	-0.009*	0.005
Language skills at landing:						
Good (ref.)						
Some	-4.667***	1.616	-2.318	1.577	-2.193	1.509
None	-6.832***	1.900	-3.356*	1.761	-3.635**	1.685
Country of residence in 2008:						
France (ref.)						
Italy			2.024	1.586	2.138	1.512
Spain			0.112	1.522	0.376	1.455
Undocumented	-0.776	1.040	-2.948**	1.152	-3.752***	1.213
Constant	24.604**	10.096	7.991	8.786	-6.326	9.244
Control for country*decade interact.	YES					
Selection equation						
Undocumented					-0.341**	0.142
Number of children					0.104*	0.061
Female					-0.386**	0.159
Female*children					-0.211***	0.081
Age					0.161***	0.055
Age squared					-0.002***	0.001
Constant					-2.212**	1.096
N	(558)		(462)		(462)	
R^2	0.252		0.561			
N censored					(123)	
Rho					0.822 (s.e. 0.049)	
Prob>chi2					0.0001	

*Note: *p<0.10; **p<0.05; ***p<0.01*
Source: MAFE

TABLE 5
OCCUPATIONAL MOBILITY AFTER ARRIVAL IN EUROPE, DISCRETE-TIME MULTINOMIAL LOGIT

Base outcome: no occupational change	**Upward mobility**		**Downward mobility**	
	Coeff.	**s.e.**	**Coeff.**	**s.e.**
Male	0.656***	0.184	0.482**	0.201
Education level	0.060***	0.016	0.001	0.021
Years of education in Europe	0.167***	0.054	-0.169*	0.097
Duration of stay in Europe (years)	-0.043**	0.019	-0.100***	0.024
$ISEI_t$	-0.092***	0.010	0.049***	0.008
Years inact. or unemp. in Europe	-0.045	0.064	0.092**	0.046
# of moves upward in Europe	0.017	0.182	0.182	0.177
# of moves downward in Europe	0.396***	0.154	-0.039	0.218
Worked in Africa	0.113	0.200	-0.179	0.261
Network	0.188	0.168	-0.009	0.237
Age	-0.052	0.066	-0.106	0.076
Age squared	-0.000	0.000	0.001	0.001
Language skills at landing:				
Good (ref.)				
Some	-0.182	0.233	0.482	0.333
None	-0.283	0.257	0.797**	0.366
Obtained work permit	1.169***	0.247	1.077***	0.331
Return migration	2.728***	0.620	2.358***	0.547
Constant	0.889	1.605	-2.679	1.689
Control for country*decade interact.	YES		YES	
Person-years	(5821)			
Persons	(555)			
Pseudo R^2	0.1313			
Log-pseudolikelihood	-1492.311			

*Notes: *p<0.10; **p<0.05; ***p<0.01. Standard errors are adjusted by clustering per person. Source: MAFE*

TABLE 6
OCCUPATIONAL COST OF MIGRATION FROM SENEGAL TO EUROPE

Occupational cost of migration Ref: Working in Senegal	**Fixed-effects**		**Random effects with Mundlak correction**	
	Coeff.	**s.e.**	**Coeff.**	**s.e.**
0 – 5 years in Europe	-5.809***	0.180	-5.906***	0.180
6 – 10 years in Europe	-4.462***	0.207	-4.557***	0.207
11 – 15 years in Europe	-3.311***	0.258	-3.419***	0.258
> 15 years in Europe	-2.547***	0.284	-2.658***	0.284
R^2 within	**0.0723**		**0.0719**	
R^2 between	**0.3474**		**0.3766**	
R^2 overall	**0.2771**		**0.3328**	
Person-years	**(25,021)**			
Persons	**(1,447)**			

*Notes: *p<0.10; **p<0.05; ***p<0.01. Other controls: age, age squared, education level, time period, years of labor market experience accumulated since the age of 16; in the second model also controlled for are gender and person-level means of variables included in the first model. Standard errors are adjusted by clustering per person. Source: MAFE*

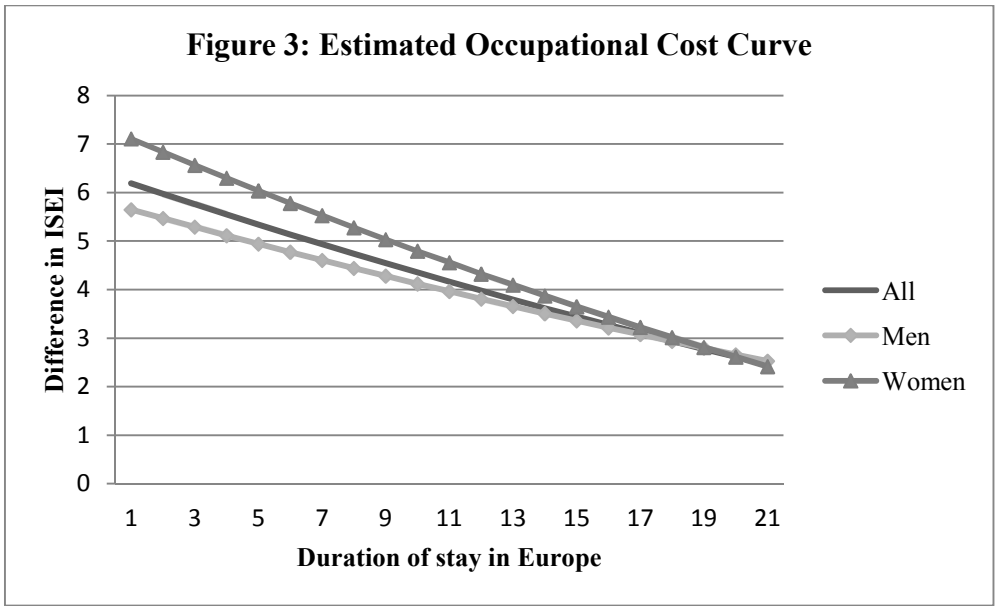


Figure 3: Estimated Occupational Cost Curve
Difference in ISEI
0
1
2
3
4
5
6
7
8
1
3
5
7
9
11
13
15
17
19
21
Duration of stay in Europe
All
Men
Women

APPENDIX

TABLE A1: EDUCATION ATTAINMENT SCALE USED IN THE MULTIVARIATE ANALYSIS

0	None
1	Pre-school(nursery school)
2	Pre-school
3	First year primary
4	2nd year primary
5	3rd year primary
6	4th year primary
7	5th year primary
8	1st year secondary
9	2nd year secondary
10	3rd year secondary
11	4th year secondary
12	1st year high school
13	2nd year high school
14	Final year high school
15	1st year(DEUG1 or equivalent)/BTS1
16	2nd year(DEUG2 or equivalent)/BTS2
17	3rd year(BA or equivalent)
18	4th year(MA or equivalent)
19	5th year(DESS,DEA or equivalent)
20	6th year(PhD studies)

Source: MAFE

TABLE A2: MEAN VALUES OF SELECTED VARIABLES, EMPLOYED SENEGALESE IN EUROPE, 2008 (N=462)

VARIABLE	MEAN VALUE
ISEI	30.70
Male	0.61
Age	40.36
No schooling	0.16
Some schooling, not finished primary	0.12
Primary	0.11
More than primary, up to higher secondary	0.43
More than higher secondary	0.18
Received some education in Europe	0.13
Duration of stay in Europe	13.19
Years inactive in Europe	0.83
ISEI – first job in Europe	28.32
Worked in Africa prior to migrating	0.73
Has an immigrant friend in the same country	0.24
Good language skills upon arrival	0.29
Some language skills upon arrival	0.30
No language skills upon arrival	0.41
Lives in France	0.34
Lives in Italy	0.33
Lives in Spain	0.33
Has no work permit	0.19
Number of children below 18 years of age	1.52

Source: MAFE (unweighted)