Dynamics of Well-Being Among Immigrants

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To
my parents Djoko and Danica,
my sister Ivana and my grandmother Vasilija.
They will know why.

Mojim roditeljima Đoki i Danici,
sestri Ivani i baki Vasiliji.
Oni znaju zašto.

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Summary

The broad objective of this thesis is to study the patterns of objective and subjective well-being among the immigrants in Europe. The main part of the thesis consists of three single-authored empirical chapters. The first chapter analyzes the longitudinal patterns of relative poverty among the foreign-born in Sweden. The second chapter examines the mechanisms of occupational attainment, occupational mobility and long-term occupational cost of migration among Senegalese immigrants in France, Spain and Italy. The third chapter analyzes life satisfaction and income satisfaction among immigrants in Germany. At the most general level, the results in the empirical chapters suggest that the objective well-being improves with duration of stay at destination, even if very gradually for some immigrant groups, while, on the other hand, there is a *ceteris paribus* negative relationship between the subjective well-being and duration of stay. A number of other findings contribute to a more nuanced understanding of the processes associated with the well-being among immigrants.

Resum

L'objectiu general d'aquesta tesi és estudiar les pautes del benestar objectiu i subjectiu dels immigrants a Europa. La part principal de la tesi consisteix en tres capítols empírics d'autoria única. El primer capítol analitza les pautes longitudinals de pobresa relativa entre els nascuts a l'estranger a Suècia. El segon capítol examina els mecanismes d'obtenció d'ocupació, la mobilitat i cost professional a llarg termini de la migració entre els immigrants d'origen senegalès a França, Espanya i Itàlia. El tercer capítol analitza la satisfacció general amb la vida i la satisfacció amb els ingressos entre els immigrants a Alemanya. Els resultats en els capítols empirics suggereixen, a nivell general, que el benestar objectiu millora a mida que creix la durada de l'estada en el lloc de destí, tot i que de manera molt gradual per alguns grups d'immigrants, mentre que, d'altra banda, hi ha una relació ceteris paribus negativa entre el benestar subjectiu i la durada de l'estada. Diversos resultats contribueixen a una comprensió més matisada dels processos associats amb el benestar entre els immigrants.

Introduction

The relevance of the research of socio-economic well-being among immigrants is primarily based on the evidence that, in most Western societies, the foreign-born are disadvantaged relative to natives in terms of the standard of living. The importance of this research becomes even more pronounced if we accept the view that the actual degree of immigrant disadvantage to some extent also reflects the openness of the host society. However, one can argue that the appeal of research in this field also lies in the nature of the research process itself. Namely, the immigrants constitute a particularly interesting social group to observe when studying various aspects of objective and subjective socio-economic well-being also because the analysis of most aspects of well-being among immigrants is in itself more complex than among natives, due to the fact that it requires the inclusion of a larger set of determinants than the corresponding analysis for natives. While almost all the factors that affect well-being among natives are also at work among immigrants, the opposite may not hold since the well-being of the latter group is also determined by a whole set of additional circumstances unique to immigrant experience. Let us think for a moment of earnings, as an undisputedly important indicator of objective well-being. In the Mincerian framework, the essential determining factors of earnings are education level and labor market experience. However, when looking at immigrants a large literature suggests that education and labor market experience acquired domestically are more valued in the labor market as compared to education and experience acquired elsewhere. Or, in other words, the skills acquired by immigrants in the country of origin are not perfectly transferable to the destination (Friedberg 2000; Green and Warswick, 2010; Duvander, 2001; Chiswick, 1978; Schaafsma and Sweetman, 2001;

Ferrer and Riddell, 2008; Chiswick and Miller, 2008; Sweetman, 2009; Grand and Szulkin, 2002). Therefore, when estimating the earnings for immigrants, it would be essential to distinguish between the number of years of labor market experience and education received in the origin and those acquired at destination. Furthermore, most studies that have looked at transferability of skills also found that the degree of transferability varies greatly among different immigrant groups, and this would also have to be appropriately controlled for in the model of immigrant earnings (e.g. through inclusion of an indicator of country of origin). But, apart from education and labor market experience in the destination, earnings are also determined by a whole range of other indicators of integration into the host society in general and labor market in particular. Good language skills increase earnings (Kossoudji, 1988; Chiswick and Miller, 2002; Dustmann, 1994; Chiswick, 1991), and so does the intermarriage, with the effect being persistent even after controlling for selection effects (Dribe and Lundh, 2008; Meng and Meurs, 2009). Just as the immigrant-specific characteristics are important in the research of objective well-being among the foreign-born, they also matter when analyzing the subjective well-being. As has been seen in the previous research and as will be seen in the last empirical chapter of this thesis, being married and in good health will be positively associated with life satisfaction among both natives and immigrants, while being unemployed will decrease life satisfaction among both groups. Nevertheless, some determinants of subjective well-being are only applicable when analyzing migrants and can therefore be considered immigrant-specific circumstances in this context. It results from the previous work that expectations regarding the future attainment in alternative locations are the principal determinant of the actual act of migration (DeJong, 2000). If so, it does not take too much of a stretch to assume that the outcome of these expectations associated with migration will affect the immigrant subjective well-being. Besides,

the way immigrants perceive the circumstances at origin and destination can also be important factors in determining subjective well-being. In particular, it has been documented that the subjective well-being of immigrants is also negatively affected by the feeling of homesickness as well as by actual or self-perceived discrimination in the destination (Jasinskaja-Lahti et al, 2006; Werkuyten and Nekuee, 1999; Safi, 2010). Clearly these concepts can also be applied to the experiences of native internal migrants, but even so the salience of these concepts is on average much less pronounced among natives when analyzing the subjective well-being. Reference groups, being one of the crucial concepts in the research of satisfaction, also contribute to the complexity of research of subjective well-being among immigrants. Both natives and immigrants generate subjective (dis)utility also by making comparisons to multiple reference groups, and in this sense the concept of reference group is by no means specific to immigrant experience. However, what does make immigrants distinct from natives in this context is that their reference groups are more geographically dispersed. Not only do they compare themselves with different social groups in the destination, but they also continue to make comparisons with non-migrants in the origin.[1]

While the previous paragraph explains the motivation for focusing on immigrants, the rest of this chapter will mainly explain how these analyses will be pursued and which criteria shaped the composition and contents of the thesis. First of all, the analyses in all chapters take a longitudinal approach to examining well-being, which allows me to address the research questions in a methodologically more rigorous way, thus offering a more complete insight into research questions. Cross-sectional studies

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[1] In fact, the famous model by Stark and Taylor (1989) describing the link between migration decision and relative deprivation is also partly based on this assumption. Akay et al. (2011) provide some supporting empirical evidence.

can be and often are very insightful, but only when using longitudinal data was it possible to find out that the longer one stays in poverty, the lower the chances of leaving poverty (Bane and Ellwood, 1983), and that the longer the person is unemployed the lower the likelihood of finding a job (Nickell, 1979; Jackman and Layard, 1991). Likewise, only by using longitudinal data was it possible for Borjas (1985) to show the distinct and separated effects of duration of stay (changes over time within individuals) and a cohort of arrival effects (differences between subjects at baseline) in the migration research. Moreover, all the previously mentioned processes (labor market integration, education and acquisition of other country-specific skills), as well as other processes associated with the integration of immigrants into the host society (accumulation of the social capital, strengthening of legal status, etc.) are characterized by a certain dynamics, which may greatly vary from one individual to another, or from one immigrant group to another. The longitudinal and dynamic framework is thus essential for a more nuanced understanding of immigrant integration and well-being among immigrants.

The considerations presented above, in combination with the desire to pursue a research using advanced and rigorous empirical techniques, shaped both the content and the very title of this thesis, *Dynamics of Well-Being among Immigrants*. The main part of the thesis consists of three empirical articles (henceforth referred to as chapters), each with its own set of research questions and each using a different dataset. The empirical part of the thesis intends to be what I believe is the optimal outcome of the interplay of four principles and criteria applied when choosing the research topics:

i) Relevance – each chapter is supposed to provide significant insights which will contribute to a better understanding of well-being among

immigrants, as well as of the factors at play in the process of immigrant integration into the host society.

ii) Originality – an attempt was made in each chapter to either address the issues that had not been dealt with previously, or to shed new light on the already familiar research questions.

iii) Feasibility – armed with competence, intuition and a profound interest and concern for social matters, good sociologists and other social scientists never cease to think of new and interesting research questions. Nonetheless, we are all well aware that, given the data constraints, only a limited number of them can be appropriately addressed in empirical studies. All datasets I worked with suffer from some drawbacks, but my intention was to make the maximum out of each of these datasets.

iv) Acknowledging the complexity of the concept of well-being – the body of research on subjective well-being is growing larger and it almost unanimously shows that there is only a moderate degree of correlation between subjective well-being and some important indicators of the objective well-being, such as income (the data used in this thesis being no exception)[2]. Hence, I believed that the insight into immigrant well-being would be incomplete without one chapter focusing on the subjective well-being.

The first chapter is titled *Paths into and out of Poverty among Immigrants in Sweden*. The main goal, as the title clearly suggests, is to offer an insight into the dynamics of relative poverty among foreign-born individuals in Sweden using high-quality register-based data. The

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[2] The simple correlation between life satisfaction and needs-adjusted income in the sample used in the third chapter is 0.165. The simple correlation between income satisfaction and needs-adjusted income in the same sample is 0.342.

dynamic approach to poverty analysis was pioneered by Bane and Ellwood (1983) and, thanks to its longitudinal nature, it has proved to be more successful than cross-sectional analyses in identifying the economically most vulnerable social groups. What makes Sweden an interesting country to observe is not only its generous, universalist, social democratic welfare state that has been found to have a positive role in reducing poverty (Kenworthy, 1998, Fouarge and Layte, 2005), but also the fact that it is perceived, both within and outside the academia, as one of the forerunners in immigrant integration policy. This chapter extends the poverty research by being, to the best of my knowledge, the first study that compares patterns of poverty dynamics among immigrants with those among natives, while at the same time taking into account the roles of trigger events associated with poverty transitions and immigrant-specific attributes. In order to obtain a more profound picture of the patterns of well-being among immigrants, appropriate comparisons with natives were made. More precisely, one of the main research questions is whether immigrants are less likely to leave poverty and more likely to fall back into poverty, all else equal? Or, in more colloquial terms, is poverty stickier among immigrants?

The second chapter focuses on occupational attainment and occupational mobility, two additional indicators of socio-economic well-being, and is titled *Occupational Trajectories and Occupational Cost among Senegalese Immigrants in Europe.* The data used in this chapter stem from the "Senegalese sample" of MAFE dataset (an acronym for "Migrations between Africa and Europe"). The dataset captures life-course trajectories of Senegalese immigrants to France, Italy and Spain, but also, very importantly, those of non-migrants and of migrants who had returned from Europe to Senegal prior to the time of the survey. The empirical analysis in this chapter is centered around three main research questions.

The first one deals with the determinants of the level of occupational attainment among immigrants in the destination country. The second goal is to disentangle the patterns of upward and downward occupational mobility by applying appropriate discrete-time techniques. Finally, the third aim in this chapter is to look at occupational trajectories of both non-migrants in Senegal and Senegalese immigrants in Europe and to analyze how much the immigrants renounce in terms of their occupational status, both in short term and long term perspective, by undertaking the act of migration, and the extent to which the occupational cost of migration (if identified) changes with duration of stay in the destination. Relative to the previous similar research, the most innovative approach was applied in answering this third research question, which is inspired by the views that also non-migrants in the home region constitute an important reference group for migrants, which in turn implies that socio-economic standing of non-migrants affects to at least some extent the subjective well-being of migrants.

The last empirical chapter is titled *Immigrant Satisfaction and Duration of Stay at Destination* and examines the subjective well-being among immigrants using the data from the German Socio-Economic Panel (GSOEP). This chapter is inspired by an ever larger body of research that shows an unexpectedly moderate correlation between subjective (self-reported) levels of satisfaction and income (Easterlin, 2001; D'Ambrosio and Frick, 2007). Several research questions are addressed in this chapter. First, are immigrants in general more or less satisfied with life and income as compared to natives with the same observable characteristics? Second, do the conclusions change - and if yes, how - once we take into account the heterogeneity of immigrant population in Germany? Third, if separate analyses of satisfaction are done for natives and immigrants, which determinants are more salient for the former and which ones matter more

for the latter group? The fourth research question deals with the effect of duration of stay in Germany on satisfaction levels among the foreign-born. The chapter contributes to the previous research due to the sheer fact that the body of research on self-reported satisfaction among immigrants has been very scarce, even thought not entirely absent. But, what is most likely the key contribution of the chapter is an attempt to undertake a detailed analysis of the effect of duration of stay on satisfaction, as well as to look at whether this effect can possibly be explained by different levels of expectations that the immigrants with different duration of stay may have.

Obviously, each chapter studies a different European destination country (or countries). However, although the characteristics of the destination countries in these studies are taken into account when interpreting the results, neither the research questions nor the hypotheses stated in these chapters are motivated by the contextual factors in the destination countries. Put another way, all the research questions and hypotheses presented in this thesis would be formulated in the same way in the context of any European destination country, regardless of its welfare system, immigration policy or immigration history.

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Content

1. Paths into and out of Poverty among Immigrants in Sweden [3]

1.1. Introduction

The undisputed importance of research on poverty among immigrants goes beyond the fact that immigrants are among the most economically vulnerable social groups in the contemporary Western societies and, as a consequence, are overrepresented among the poor. For instance, it can also be argued that the degree to which it is difficult for the foreign-born to escape economic hardship, especially when a comparison is made to the economically vulnerable natives, can be regarded as one of important indicators of openness of the host society towards the foreign-born. Also, group differences in poverty are important because they influence public attitude about poverty (Waldfogel, 2001), but also about the groups themselves: high poverty rates and high welfare recipiency among the foreign-born are frequently referred to in the contemporary anti-immigrant public discourse in the Western countries.

The goal of this chapter is to offer insight into the dynamics of relative poverty among foreign-born individuals in Sweden and improve the understanding of at least three issues. First, it is commonly known that in

most Western European societies immigrants are disadvantaged in terms of probability of living below the poverty line, even after controlling for other observable characteristics (see a multi-country evidence in Lelkes, 2007). What is, however, less clear from the previous research is whether, once poor, immigrants are less likely to leave poverty than poor natives. Correspondingly, are the immigrants more likely to fall back into poverty once out of it? Or simply, is poverty stickier among immigrants? The second research goal is to look at how probabilities of poverty transition are affected by immigrant-specific attributes, such as ethnicity or years since migration. Finally, the third research question is to assess how various events affect the likelihood of experiencing poverty exit or poverty entry. As mentioned, the setting of the underlying study is Sweden. What makes this country interesting to observe is not only its generous, universalist, social democratic welfare state, which has been found to have a positive role in reducing poverty (Kenworthy, 1998; Nelson, 2004; Fouarge and Layte, 2005), but also the fact that Sweden is perceived, both within and outside the academia, as one of the forerunners in immigrant integration policy. Moreover, Sweden has a comparably long tradition of immigration, at least for a country which had no overseas colonies in modern history. As immigration policies were changed, so did the prevailing types of migration. As a result of these diverse flows, Sweden's immigrant population today is characterized by a relatively heterogeneous ethnic composition, with four continents being represented among the most important sending countries.

The body of research on poverty among immigrants is sizeable, but still much smaller than research on labor market integration and earnings among immigrants. Most research on poverty among immigrants has focused on determinants of cross-sectional patterns of poverty (Kazemipur and Halli, 2001; Galloway, 2006; Blume et al, 2007). One of the few

exceptions is the study by Picot, Hou and Colombe (2008), which observed patterns among immigrant newcomers in Canada from a dynamic perspective. The dynamic approach was pioneered by Bane and Elwood (1983) and, thanks to its longitudinal nature, it has proved to be more successful than cross-sectional analyses in identifying the economically most vulnerable social groups. In subsequent years, a number of influential studies were done (e.g, Stevens, 1999; Jenkins, 2000; Jenkins and Rigg, 2001; Devicienti, 2002) that were inspired by the findings of Bane and Elwood. Some cross-national research on poverty dynamics also became available and most of these studies look at whether different welfare regimes affect duration of poverty (Layte, Whelan, 2003; Fouarge, Layte, 2005). A number of studies focused on poverty dynamics in Sweden (Fritzell and Henz, 2001; Hansen and Wahlberg, 2004; Jonsson, Mood and Bihagen, 2011; Lindquist and Sjögren Lindquist, forthcoming), and some of these studies, at least partly, on the issue of poverty patterns among immigrants. In addition to complementing previous studies on poverty dynamics from Sweden, this study is, to the best of my knowledge, one of the first studies of poverty dynamics in general which has a strong emphasis on immigrants and immigrant-specific variables, while at the same time looking at the impact of trigger events associated with poverty transitions.

This analysis may appear gender-blind. However, even though separate analyses by gender have been carried out, the main reason underlying the decision not to report them in this study is that, even though present, the resulting differences are of a small magnitude. Moreover, immigrants do not seem to be distinct from natives in terms of these gender-specific patterns of poverty dynamics. The differences between men and women would most likely be larger if only one adult households were looked at. This could be an interesting topic for future research.

The rest of the chapter is structured in the following way: Section 1.2 will present data and measurement techniques, while in Section 1.3 cross-sectional and longitudinal poverty trends will be discussed. Section 1.4 and Section 1.5 deal with descriptive and multivariate analysis of poverty exits and poverty entries, respectively. Section 1.6 examines to which extent the main findings of the study are robust to alternative methodological approaches. Section 1.7 concludes.

1.2. Data and Measurement

Data are drawn from the Longitudinal Dataset on Individuals (LINDA), which is currently administered by Statistics Sweden. Due to the regulations about the use of the Swedish register-based data, it was only possible for me to access the data from within the country. LINDA combines data from the Total Population Register, the Income Register and other smaller registers and consists of a large panel of individuals and their household members, whereas the sampling procedure ensures that each new wave is representative for the population of that year (Edin and Fredriksson, 2000). There are two subsamples within LINDA. The total population sample includes information on sample persons (around 3.3% of Sweden's total population) and their household members, regardless of the sample person's nativity. What makes LINDA especially appropriate for immigration research is its immigrant subsample, in which sample persons add up to as much as 20% of foreign-born persons in Sweden. Both subsamples will be used in this chapter for different purposes: when doing comparisons of natives and immigrants twelve waves (1996-2007) of the total population sample will be used. For a more detailed analysis of immigrant poverty patterns nine waves (1999-2007) of immigrant sample will be used. The time span in the latter sample is somewhat shorter due to the fact that immigrant sample for years prior to 1999 was based on the

so-called Tax Household definition, according to which, for example, once children turn 18 they are considered a different household even if they still live with their parents. Unless otherwise indicated, recent immigrants (defined here as those who arrived 1996 or after) are excluded from the analysis. Due to particularly high poverty rates within this group, poverty patterns among recent immigrants is a research question on its own and, for the sake of space, will not be dealt with in this study. While being a large longitudinal dataset with reliable information and hardly any attrition, the current version of LINDA is not entirely without drawbacks. The most frequently indicated problem with the dataset is the fact that non-married couples without common children are considered separate households. However, this is not expected to bias the general results substantially, especially not in the studies focusing on immigrants at the lower-tail of income distribution. The issue of accounting period for income is also present in the literature: the use of monthly incomes leads to more measured poverty transitions (Bradbury et al, 2001). However, only yearly disposable household income is observed in LINDA, so that poverty transitions over sub-annual periods cannot be observed. Hence, poverty line is also calculated on the basis of the yearly income.

Since poverty is one of the principal indicators of welfare, a relatively low level of accordance among researchers as to how to define poverty may appear somewhat surprising (see Townsend, 1979 or Foster, 1998). If we focus on income-based poverty measures, the basic division is the one between absolute poverty and relative poverty. Both concepts have advantages and drawbacks, but both are also undoubtedly highly relevant for the research of well-being and one cannot escape the impression that the still ongoing discussion between the proponents of each approach is at least partly stimulated by linguistic reasons, i.e. by the arguably unfortunate circumstance that these two closely related concepts are also

namesakes. This study focuses on relative poverty, with the poverty line set at 60% of median yearly disposable income. The OECD-1 equivalence scale is used to adjust for household size, i.e. weights of 1.0, 0.7 and 0.5 are assigned to the first adults, subsequent adults and children living in the family, respectively. As a wide range of poverty measures has been used in previous research, the choice made here will inevitably appear arbitrary to some readers. Therefore, the last empirical section will address the issue of robustness of main findings depending on a) how poverty is defined, b) how income is adjusted for household size and c) what actually should be considered a poverty transition.

It is important to note that, similar to most of the previous related work, left-censored spells are not included in the Kaplan-Meier and multivariate analysis. However, when describing the role of the events associated with poverty transitions, the emphasis is less on duration of poverty, so that two estimations are done for each poverty transition: once including the left-censored spells, another time without them.

1.3. General Poverty Trends in Sweden 1996 – 2007

Sweden between the years 1996 and 2007 can be considered a textbook example of conceptual differences between absolute poverty and relative poverty. In particular, while, as a result of post-crisis economic recovery, absolute poverty was steadily declining over this period, relative poverty was rising at the same time, primarily due to an increase in income inequality (for more detailed evidence see Jonsson, Mood and Bihagen, 2010). This is undoubtedly an interesting course of events, even though

not without precedents in recent European history (see evidence for Ireland by Layte, Nolan and Whelan, 2001).

Figure 1 illustrates the general poverty patterns in Sweden 1996-2007. When we compare the total of Swedish foreign-born population (recent and non-recent immigrants) with natives, it turns out that not only was the poverty rate much higher among the former, but also the percent increase in poverty rate between 1996 and 2007 was higher among the foreign-born. In contrast, when only non-recent immigrants are counted in, the poverty gap decreases substantially, but it also results that increase in poverty was actually somewhat more pronounced among natives.

Figure 1 about here

Yearly changes in Gini coefficients among natives and immigrants are a strong indicator that income inequality is the main reason why the increase in poverty was smaller among non-recent immigrants than among the natives. Between 1996 and 2007, inequality among natives increased by 23.3% (from 0.223 to 0.275), whereas the corresponding figure for immigrants was 11.5% (an increase from 0.252 to 0.281). In other words, while in 1996 inequality was clearly higher among immigrants, Gini coefficients for the two groups almost evened up by 2007. As for the longitudinal trends, the percentage of individuals who experienced poverty at least once over the observed period (1996-2007) - around 20% of working-age natives and more than 43% of working-age immigrants - is much higher than cross-sectional poverty rates in any observed year. That relatively many individuals experience poverty at least once over their life-course is sometimes referred to as "democratization of poverty" (Leisering and Walker, 1998). It is debatable, however, whether the experience of poverty alone is sufficient to consider poverty more

"democratic" than before, if at the same time there are still clearly pronounced inequalities in terms of opportunities of escaping poverty. The immigrants are more vulnerable in terms of chronic economic hardship too: if we define persistent poverty as a poverty spell that is at least three years long, then it turns out that 6.77% of natives experienced at least one episode of persistent poverty between 1996 and 2007, while the corresponding share among immigrants was as high as 22.8%.

As discussed previously, Sweden's immigrant population is relatively heterogeneous in terms of country of origin. It turns out, and comes as no surprise, that different immigrant groups differ significantly in terms of integration into the host society, which is also translated into unequal poverty rates within each of these groups, as Figure 2 illustrates.

Figure 2 about here

Figure 2 indicates that Nordic immigrants and immigrants stemming from non-Nordic EU-15 countries are only marginally disadvantaged relative to the Swedish-born. On the other hand, Turkish, African and Iraqi are much more frequently found to be living under poverty line. For instance, the average poverty rate for all Iraqi-born persons living in Sweden, regardless of time of arrival, exceeds 50 percent. Recent immigrants are particularly hit by high poverty incidence: poverty rates of all immigrant groups are lower if only those immigrants are counted who already lived in Sweden in the first year observed in this analysis. Clearly, these notable differences between the immigrant groups should be taken into account to some extent, in both descriptive and multivariate setting.

1.4. Escaping Poverty

It has been documented in previous research that immigrants are on average more likely to be poor than natives. But, the hypothesis is proposed here that the immigrant disadvantage can also be observed in terms of the likelihood of leaving poverty, once poor. In other words, the prediction is that poor immigrants are on average less likely to leave poverty as compared to poor natives. Why should this be the case? In order to further explain this hypothesis, it is necessary to remember that equivalent disposable income is, roughly speaking, determined by the situation and changes within three different contexts: 1) labor market – through its effect on employment and earned income, 2) state – through its effect on net transfers, and 3) family, as family size indicates the magnitude of household needs. Taking into account prominent findings of previous migration research, as well as the socio-demographic characteristics of the individuals at risk of leaving poverty, it is very possible that poor immigrants are disadvantaged relative to poor natives within each of these three contexts. On the labor market, the immigrants are penalized for having lower levels of country-specific skills (e.g. less than perfect language skills) than natives. Also, it has been demonstrated that employers in the destination country put less value on education credentials acquired abroad (Friedberg, 2000 and, for the case of Sweden, Duvander, 2001). Another source of immigrant disadvantage in the labor market may be discrimination, to which Sweden does not seem to be immune either (Rydgren, 2004; Carlsson and Rooth, 2007). The role of the state for poverty exits is mainly reflected through the provision of a set of social benefits. However, in their cross-country study, Morissens and Sainsbury (2005) show that, irrespective of welfare regime, immigrants in Western societies fare worse than natives in welfare states, primarily due to having limited access to major insurance benefits. The Swedish welfare

state is characterized by an universalistic approach and all legal residents, regardless of nationality and nativity, are entitled to these benefits. But, most of the higher-tier benefits, which are the main welfare state-based mechanism for escaping poverty, are contingent on previous labor market participation in Sweden (Mood, 2011). The immigrant disadvantage in this context arises due to lower labor market participation rates among poor immigrants as compared to poor natives. Finally, demographic disadvantage of poor immigrants arises because poor immigrant households are somewhat larger than poor native households. As a consequence, when experiencing the same income increase in absolute terms, the rise in adjusted disposable income will be, on average, of a smaller magnitude in the immigrant household.

Figure 3 shows the Kaplan Meier estimates of proportions of individuals remaining poor, by poverty spell length. The considerations of Bane and Ellwood (1983) on the duration of poverty spells are confirmed here too: the majority of poverty spells observed in this sample will be only of a limited duration. Well over a half of natives and immigrants in Sweden are out of poverty by the end of the second year since the start of poverty spell.[4] On the other hand, and not very surprising either, the analysis of hazard rates of leaving poverty shows that for both groups one can observe what is often referred to as "cumulative inertia" (McGinnis, 1968), by which is suggested that the probability of moving out of a certain state declines with duration already spent in that state. In the underlying context it means that the more time an individual spends in poverty the lower his or her probability of leaving poverty. More importantly for the goals of this study, just as predicted, the Kaplan-Meier

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[4] It must, however, be emphasized that these figures may give a too positive impression, as some of those who leave poverty will fall back into poverty in subsequent years.

analysis indicates that immigrants indeed stay longer in poverty than natives.[5]

1.4.1. Events Associated with Poverty Exits

All poverty exits between the years *t-1* and *t* can be associated with one or more trigger events that occur within the household at roughly the same time. The goal of this section is to shed light on the importance of these events for poverty exits and to answer the following two questions:

- What share of observed poverty exits can each of these events be associated with? This share is henceforth referred to as the *prevalence rate*.

- What share of natives and immigrants manage to escape poverty, conditional on the event taking place? This will be referred to as the *conditional transition rate*.

As the role of events is only one of the principal research questions, but also for the sake of space and clarity of presentation, the classification of the events adopted here is general (similar to Duncan et al, 1993) rather than extensive (as in McKernan and Ratcliffe, 2005). The four events are:

1) Employment gain, which takes place if at least one person in the household was non-employed in year *t-1* and becomes employed in year *t*.

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[5] Log-rank test and Wilcoxon test were done to test whether the difference in survival rates between the two groups is statistically significant. Both tests showed that it is the case.

2) Demographic transition, which in the context of poverty exits occurs if the sample person lives as the only adult in the household in year *t-1*, but is found to be living in a two plus adult household in year *t*.

3) Increase in labor income, which is defined as the increase in total household labor income between years *t-1* and *t*.[6]

4) Increase in positive transfers, defined as an increase in the sum of positive transfers to the household between years *t-1* and *t*.[7]

A common problem about descriptive analyses of trigger events is the possibility of several events taking place simultaneously within the same household, so that in some cases it is not clear which poverty transition is to be ascribed to which event. In order to tackle this problem, each of the first two events listed above is conditional on the other event not taking place. The third and fourth events are not mutually exclusive (which is why the sum of prevalence rates slightly exceeds 100%), but are conditional on the first two events not taking place. To illustrate, an increase in labor income will only be considered as such if it occurs in a household in which no employment transition or demographic transition happened at around the same time. Figure 4 indicates that labor market is the most important setting in which the events occur that are associated with poverty exits, a finding in accordance with previous literature. Increase in labor market income alone is associated with more than a half of poverty exits among natives and more than 40% of exits among

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[6] For the sake of comparison between two consecutive years, labor income and non-labor income amounts are both adjusted by the consumer price index estimated by Statistics Sweden.

[7] In theory, a decrease in negative transfers can also be associated with poverty exits. However, the prevalence rate of this event was found to be only marginal and is thus not considered here.

immigrants. The employment gain shows a substantially lower prevalence rate, but is also the only event that is more frequently associated with poverty exits among immigrants than among natives. A possible explanation is a lower labor market participation rate among poor immigrants in the sample, relative to that among poor natives. In other words, a higher share of immigrants is at risk of poverty transition. Increases in positive transfers are observed for around a third of natives and immigrants who leave poverty[8], while demographic transition is the least prevalent event, especially among immigrants.

Figure 4 about here

The importance of trigger events in the context of poverty exits can also be viewed from a different angle, by looking at what share of individuals leave poverty conditional on experiencing one of these events. As depicted in Figure 5, conditional transition rates for all the events analyzed here are higher for natives than for immigrants. However, the ranking of the events as measured by conditional transition rates is the same within both populations. It turns out that the event with the lowest prevalence rate, transition from one adult household to two plus adult household, is most frequently associated with poverty exits once it actually takes place: as many as 80% of natives and around 60% of immigrants leave poverty when experiencing this type of demographic change.

Figure 5 about here

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[8] If instead of the increase in the sum of positive transfers we limit our attention to increases in social benefits, the prevalence rate amounts to around 18% for both groups (only slightly higher for immigrants).

1.4.2. Poverty Exits, Multivariate Analysis

The goal of this section is to test whether, after controlling for socio-demographic characteristics, there is a residual immigrant disadvantage in terms of likelihood of leaving poverty. In other words, it is examined whether there is an evidence of immigrant-specific risk of chronic poverty. The multivariate model is based on discrete-time logistic hazard model. The dependent variable is poverty exit between the years *t-1* and *t*, i.e. the dependent variable assumes value 1 if a poverty exit is observed between years *t-1* and *t*, otherwise it is assigned a value of 0. Since poverty is a household-level concept, some independent variables refer to characteristics of the sample member; other variables capture characteristics of other household members, while some others reflect the characteristics of the households as a whole. Two versions of the multivariate model are employed here. The first is rather static and only includes independent variables that refer to year *t-1*. The second model incorporates dummies for the events previously identified to be associated with poverty exits and which took place between years *t-1* and t^9. An indicator for a *foreign-born* person tests for the immigrant-specific risk of chronic poverty. In order to test to what extent this risk differs among different immigrant ethnic groups an appropriate categorical variable is

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[9] The use of the event indicators in the multivariate analysis is among the most controversial issues in the poverty dynamics research. Some research are skeptical about this approach, primarily on the grounds that it could lead to problems associated with endogeneity (for an extended discussion, see Jenkins, 2000). Also, the interpretation of some results in the model with the event variables may be less than intuitive, primarily because the effect of each state variables is now split into direct effect (indicated by the coefficient of the state variable itself) and an indirect effect (as expressed in the coefficients of the event variables associated with the state variable). Nevertheless, in the light of the undeniable importance of the previously discussed event for poverty transitions, some researchers believed that the benefits of using the event variables as covariates exceed the potential threat of bias (Muffels et al, 2000; Van Leeuwen and Pannekoek, 2002; Finnie and Sweetman, 2003, McKernan and Ratcliffe, 2005, Cantó et al, 2007).

used in a separate model, with the Swedish-born as the reference category. The set of other independent variables in the first model consists of individual and household demographic characteristics, such as *number of adults living in the household*, *marital status, number of children below the age of 18* and *sample person's age at the beginning of the poverty spell* (and its squared term)[10]. In order to capture the employment situation within the household, the variable *share of employed adults* in the household is included in the model. *Education level* of the sample member is also controlled for, while the dummy for *another person with more than high school living in the household* controls for possible positive effects of education level on the household level. As in most similar studies done previously, the *duration of current poverty spell* is introduced as another independent variable. If we want the regression coefficients to reflect the association of each variable with poverty exits "all else equal", it has to be taken into account that not all the poor are equally poor. For this reason the model also controls for *poverty gap*[11].

The results are given in the first two columns of Table 1. Most coefficients turn to be as expected. The number of children is negatively correlated with the likelihood of leaving poverty and so are the duration of poverty spell and the poverty gap. Households with more than two adults are most likely to leave poverty[12]. The younger the person at the

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[10] Age and years since migration are not allowed to vary as the spell progresses, but are set equal to their values at the start of the spell. This is done to avoid collinearities between these variables and duration dependence explanatory variables (spell length, age and YSM all increase in step by one year as time progresses).

[11] Poverty gap is here defined as $\frac{|adjusted\ household\ income - poverty\ line|}{poverty\ line}$

[12] In the majority of cases, the households with more than two adults are the households with adult children.

beginning of the poverty spell, the higher the likelihood of leaving poverty. A higher education level (especially in combination with living with another person with more than high school) and a higher share of the employed in the household are both positively and significantly associated with chances of escaping poverty. Gender and marital status are not statistically significant. The analysis also reveals that there is indeed a statistically significant immigrant-specific risk of chronic poverty: net of other things, the odds of leaving poverty are around 17 percent lower for immigrants. In the second column, the immigrant dummy is replaced with a categorical variable representing natives and different immigrant groups. While other coefficients are almost identical to the estimation reported in the first column, the coefficients of the categorical variable confirm that, as expected, the risk of immigrant-specific chronic poverty varies substantially across immigrant groups. Non-Nordic EU-25 and Chilean immigrants are not disadvantaged relative to natives in terms of chances of leaving poverty, while the disadvantage among Nordic and Iranian-born immigrants is only of a modest extent. The degree of disadvantage for Polish and former Yugoslav immigrants is roughly equal to the average for the whole immigrant population in Sweden, whereas other immigrant groups are particularly affected by the risk of long-term poverty. The single most disadvantaged group are Iraqi-born immigrants.

Table 1 about here

The third model introduces event variables into the regression. The set of new variables is very similar to that presented in the descriptive analysis of events, but two important distinctions have to be emphasized. First, the model allows for a possible simultaneous occurrence of several events since this is less of a problem in a multivariate setting. Second, apart from the demographic change, only those events are considered that reflect the

emergence of a new source of income in the household. For example, increase in labor income as defined in the descriptive section is not considered here, as it indicates an increase in income from the already existing income source. In brief, the events included in the model are 1) *employment gain of sample member, 2) employment gain of other household member, 3) transition to two plus adult household and 4) beginning of social benefits*. Three main conclusions emerge after inspecting the results reported in the third column of Table 1. First, all four events are positively and significantly associated with higher chances of leaving poverty. Second, some coefficients, such as that for the number of adults and, even more so, share of employed adults, change substantially relative to the model without control for events. This is primarily because the coefficients in the first column also capture the likelihood of experiencing one of the events introduced in the third column. Third, the immigrant indicator is statistically significant, negative and of the roughly same magnitude as in Model 1, i.e. the size of immigrant disadvantage in terms of chances of leaving poverty remains practically the same as in the static model.

1.4.3. The Role of Immigrant-Specific Attributes

Apart from differencing by immigrant group, the analyses presented so far have not taken into account other immigrant-specific attributes. The aim of this section is therefore to shed light on these characteristics. As the comparison with natives is not of primary interest here, only the foreign-born are included in the regression. What immigrant-specific attributes will be looked at? A vast migration literature suggests that *years since migration* is one of the key characteristics by which the immigrants differ, primarily because duration of stay is positively correlated with the acquisition of country-specific skills. Nevertheless, migration literature

has also shown that different arrival cohorts differ by their skills levels even after controlling for duration of stay (Borjas, 1985), so that the model also contains appropriate *cohort indicators*. Place of residence in Sweden may also have some effect on the likelihood of poverty exit. Namely, around two thirds of the foreign-born in Sweden are concentrated in the three largest counties (with seats in Stockholm, Gothenburg and Malmö, respectively), which is substantially higher than the corresponding figure among natives. An indicator for immigrants living in these areas with a high immigrant concentration is thus also included as an explanatory variable. Finally, because of both direct and indirect advantages it may generate for the immigrants living under the poverty line, also included is an indicator for *living with a Swedish-born adult* in the same household[13].

Table 2 about here

Results reported in Table 2 refer only to foreign-born individuals in Sweden and are obtained using a shorter time-span than in the previous section. Yet, the findings are fairly similar to what can be concluded by observing the results in Table 1. This also refers to the coefficients for trigger variables, with the exception of transition to a two plus adult household as the effect of this event among immigrants appears to be somewhat weaker in comparison with the general population. As far as the effect of newly introduced variables is concerned, it can be summarized as follows. Immigrants with a longer duration of stay are more likely to leave poverty, all else equal, but, rather than a result of the length of stay itself, it appears to be the consequence of cohort differences. There is some positive and significant, yet weak effect of living in one of the three

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[13] This indicator does not refer to the immigrants living with their adult Swedish-born children.

counties with the largest immigrant concentration and this only after trigger events are controlled for. As expected, *ceteris paribus*, immigrants living with a Swedish-born adult are more likely to leave poverty. The model also controls for the immigrants groups. Conclusions with regard to differences between these groups are largely similar to what can be concluded by observing the second column of Table 1. To conserve the space, these coefficients are not reported.

1.5.   Falling into Poverty

Crossing the poverty line does not always imply a permanent escape from poverty. Quite the contrary, as will be seen in this section, the share of those who fall back into poverty is not negligible. On the other hand, that the chances of leaving poverty t years after the start of the poverty spell are higher than chances of falling back into poverty t years after escaping it is almost a universal finding and this study poses no exception with respect to that, as can be seen in Figure 6. Be that as it may, immigrants are also disadvantaged in terms of likelihood of poverty re-entry and this difference is not marginal: more than a half of immigrants will experience poverty again within six years after leaving poverty, whereas well above one half of natives do not re-enter even after ten years following the poverty exit.

Figure 6 about here

1.5.1. Events Associated with Poverty Entries

In terms of chances of falling below the poverty line, the trigger events analyzed here can be viewed as "unfavorable counterparts" of the events observed in Section 1.5.1. They are classified as follows:

1) Employment loss, which occurs if at least one person was employed in year *t-1* and spends the whole year *t* as non-employed.

2) Demographic change, which occurs *either* if sample person makes a transition to a one adult household *or* if a new child enters a household.

3) Decrease in labor income between *t-1* and *t*, i.e. decrease, in real terms, of the total household labor income;

4) Decrease in positive transfers between *t-1* and *t*, i.e. decrease, in real terms, of the sum of net transfers to the household.

The restrictions are set in the same manner as for poverty exits. The first two events are each conditional on other event not taking place and a decrease in income is only viewed as such if none of the first two events occurs. It is also worth mentioning that, in the Swedish context between 1996 and 2007, yearly increases in income inequality were yet another important factor throwing households under the line of relative poverty. In particular, it was even possible for a family to record a minor increase in income, but to enter poverty in spite of that because the effect of the growing inequality more than offset for the increase in income.

Figure 7 has some similarities with Figure 4. Just as the increase in work and non-earned income were most commonly associated with observed poverty exits, it is the decrease in work income and non-earned income that are the most prevalent in poverty entries. Also, just as in the previous section, employment transition (i.e. employment loss in this case) is the only event that is more prevalent among immigrants than among natives who make poverty transition (i.e. enter poverty). The most notable difference in comparison with poverty exits is a more important role of

demographic events for both native and immigrants as these can be linked to between 20% and 30% of all poverty entries observes. That demographic events are more important for poverty entries than poverty exits is another result consistent with previous research (see Jenkins and Rigg, 2001).

Figure 7 about here

Entry rates conditional on events taking place are substantially lower than exit rates conditional on similar type of event, as seen in Figure 8. This comes as no surprise, having in mind that poverty entries take place at a considerably lower rate than poverty exits. Another difference to poverty exits is that there is a more pronounced difference in entry rates depending on whether left-censored spells are also included in the analysis. For immigrants, demographic change has the highest conditional transition rate, closely followed by employment loss. In contrast, for natives, the employment loss is more important than the demographic change. Two events that can be linked with the highest share of poverty entries, decrease in labor income and decrease in positive transfers, are also the events with the lowest conditional transition rates and this holds for both natives and immigrants.

Figure 8 about here

1.5.2. Poverty Re-Entries, Multivariate Analysis

Both the survival analysis and the analysis of trigger events suggest that immigrants are clearly more likely to enter poverty than natives. To the extent to which these can be compared, it appears that immigrant disadvantage is actually somewhat more pronounced when looking at

poverty entries than when observing poverty exits. To determine whether this is really the case, the next step is to establish whether there is residual immigrant disadvantage in terms of chances of falling back into poverty if the analysis is done in a multivariate setting. The methodology is identical to that employed in Section 1.4, and so are all the variables that refer to time *t-1*. Apart from the dependent variable (now it is poverty re-entry), the only distinction between the two models is a different set of event variables incorporated into the model. The principle used in Section 1.4 is applied here too, and an event is only considered as such if a previously available income source becomes unavailable or if a demographic change takes place. There are now five event variables in the multivariate model: *1) employment loss of the sample member, 2) employment loss of other household member who lived in the same household in both years t-1 and t, 3) transition to one adult household, 4) new child enters household and 5) termination of social benefits*. Results are given in Table 3. There is an evidence of statistically significant immigrant-specific disadvantage in the context of poverty re-entries, the magnitude of which is not marginal: as can be seen in the first column of Table 3, there is a statistically significant residual immigrant disadvantage in terms of chances of falling back into poverty: the odds of falling back into poverty are 28.5 percent higher for immigrants. Nevertheless, when looking at the disadvantage by immigrant groups, the degree of heterogeneity within immigrant population is substantial. The three most disadvantaged groups are the immigrants originating from Iraq, Turkey and Africa. Nordic immigrants are somewhat disadvantaged, but at a level below average, while there is no statistically significant ethnic risk of chronic poverty for non-Nordic EU-25 immigrants. A somewhat surprising result is that the former Yugoslavs are in fact somewhat less likely to re-enter poverty as compared to the Swedish-born individuals. The signs of other coefficients largely turn out the expected way.

The results in the third column indicate that the occurrence of four out of five events greatly increase the likelihood of re-entering poverty, while the effect of termination of social benefits is comparably weaker, but still statistically significant. While the coefficients of most variables from Model 1 change only marginally after the inclusion of event variables, there is a more notable change in coefficient for the employment situation in the household and an even bigger change in the coefficients of demographic variables. For instance, the disadvantage of one adult households relative to two plus adult households rises substantially, relative to the model without the event variables. The immigrant-specific risk of re-entering poverty is still significant after the event variables are controlled for, although it is slightly lower than in Model 1.

1.5.3. The Role of Immigrant-Specific Attributes

Just as in Section 1.4, a separate model was estimated that includes only foreign-born individuals. Results are given in Table 4. As for the immigrant-specific characteristics, several things change with respect to the results obtained for poverty exits. First of all, the model suggests that it is the duration of stay in Sweden rather than cohort effects that are significantly associated with the likelihood of re-entering poverty, and this only after event indicators are introduced. However, even though the effect is non-linear, the implication is still the same as for poverty exits, because the immigrants with longer duration of stay in Sweden are less likely to fall back into poverty. The advantage of living with a Swedish-born adult is also significant, but the size of coefficient indicates that the effect is small. The immigrants living in one of the three most populated

counties are somewhat more likely to re-enter poverty, but this effect is also rather small in magnitude.

Table 4 about here

Similar to the result for the general population, all five event variables are statistically significant and four of them exercise quite a strong effect on the likelihood of falling back into poverty (again, the effect of termination of social benefits is somewhat weaker). While the magnitudes of coefficients are roughly similar to those obtained when observing the general population, it is also noteworthy that the event that is most strongly associated with re-entering poverty among immigrants is the entrance of new child into household, whereas for the general population it is transition to one adult household[14].

1.6. Robustness Analysis

The results presented in this study do not take into account the possibility of unobserved heterogeneity. The simulation-based procedures are computationally very demanding and would be even more so given the sample size and the number of estimations presented in this chapter. However, Meyer (1990) states that the bias that may arise by omitting unobserved heterogeneity is negligible if a sufficiently flexible specification is adopted for the baseline hazard (which is the case with the discrete-time model used in this study). On the other hand, some researchers (Stevens, 1999, Jenkins and Rigg, 2001) have noted that looking at exits and entries separately may be a source of bias, as we fail to take into account the possibility that, for instance, people who are more

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[14] This being two different samples, there is some uncertainty as to the extent to which a comparison of the two coefficients can be made (Mood, 2010).

at risk of having longer poverty spells are also more likely to re-enter poverty relatively quickly, while the model only controls for duration of the current non-poverty spell. In order to address this issue, an additional sample was constructed for each type of poverty transition. In the first one, poverty exits are observed, but apart from the duration of the current poverty spell also available is the information about the duration of the non-poverty spell preceding the current poverty spell. In the second sample, the aim is exactly the opposite: to estimate the likelihood of re-entering poverty by controlling for both the duration of the current non-poverty spell and the duration of the previous poverty spell. It is then compared whether the coefficients of other covariates change depending on whether the information about previous spells is included in the analysis. Results in Table A1 in Appendix indicate that the length of previous spells is a statistically significant predictor of likelihood of poverty transition and that it works in the expected direction: the longer the previous non-poverty spell, the higher the chances of poverty exit; the longer the previous poverty spell, the higher the probability of re-entering poverty. But, very importantly, the coefficients of other covariates change only marginally relative to the model without the previous spells, which suggests that possible bias due to neglecting information of previous spells is not a threat to the general conclusions of this study.

Another issue when looking at the robustness of the main findings is to test whether these change when alternative measures of poverty or household size are used. Several different scenarios were considered:

1) Different age range (only spells starting between age 24 and 64 are considered);

2) Different poverty line (50% of the median disposable household income);

3) Stricter definition of poverty transition (only considered as such if the individual at risk of transition moves to an income at least 5% above or below the poverty line);

4) Different equivalence scale (OECD-2: 1 + 0.5 + 0.3)

All the changes that emerged when using one of the alternative approaches were of a modest magnitude and of expected nature. To illustrate, transition to one adult becomes more important and a new child entering the household becomes less important predictor of poverty entry when using the OECD-2 scale (both in the descriptive and the multivariate setting), but this appears as a logical consequence having in mind how the two equivalence scales are constructed. More importantly, none of the main conclusions of the study is affected by introducing any of these alternative approaches.

1.7. Conclusion

Using the register-based LINDA dataset, this study seeks to analyze longitudinal patterns of relative poverty among the foreign-born in Sweden. The descriptive analysis shows that immigrants stay longer in poverty than natives, but also that, once out, they fall more quickly back into poverty. Moreover, the conditional transition rates of all the events associated with poverty exits and poverty entries are less favorable for immigrants than for natives. When looking at the actual poverty transitions, employment gain and employment loss are the only events

that are more prevalent among immigrants who cross the poverty line than among their native counterparts. The results of the multivariate analysis indicate that there is an immigrant-specific risk of chronic poverty, that is, net of other things, the immigrants are less likely to leave poverty and, once out, more likely to fall back into poverty. The immigrant –specific risk of chronic poverty decreases only slightly after the trigger events are introduced into the model. However, it turns out that the degree of immigrant disadvantage differs dramatically when the analysis is done by immigrant group. All else equal, years since migration are positively correlated with the likelihood of leaving poverty, as well as with the likelihood of avoiding it. The results for poverty exits though suggest that some cohort differences may be responsible for this. Living with a Swedish-born adult is beneficial in the context of poverty dynamics. Living in one of the three largest counties slightly increases the chances of leaving poverty, but it also makes a poverty re-entry a little more likely. The main conclusions of the chapter remain unaffected by the introduction of alternative measures of poverty and poverty line.

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Tables and Figures (source: LINDA)

Figure 1: Poverty rates - natives and immigrants

Figure 2: Poverty rates 1996 - 2007, by immigrant group
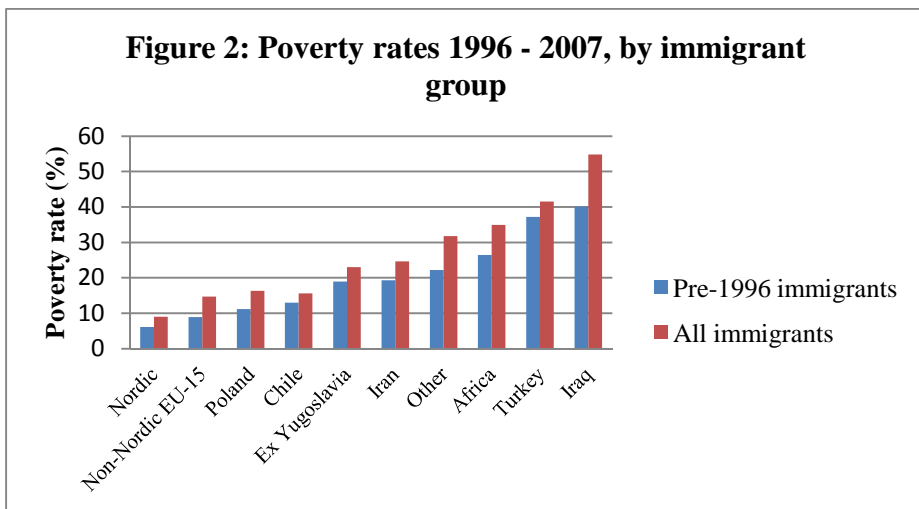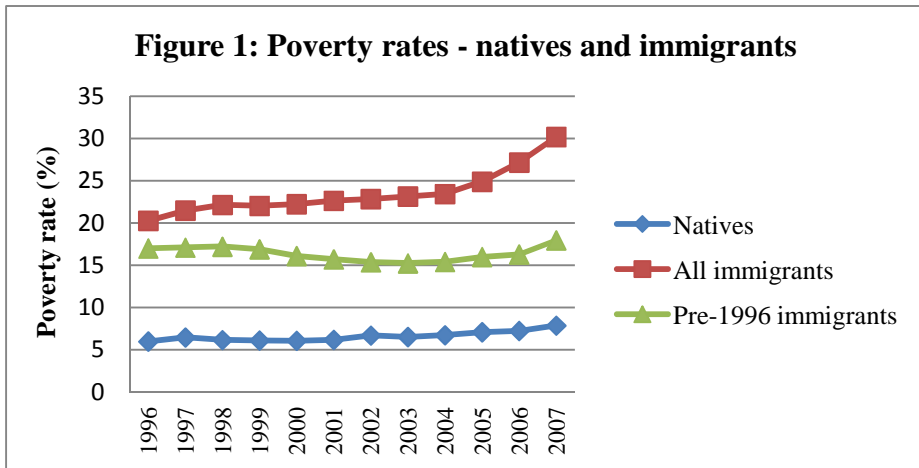
Figure 3: Kaplan-Meier survivor functions, poverty exits
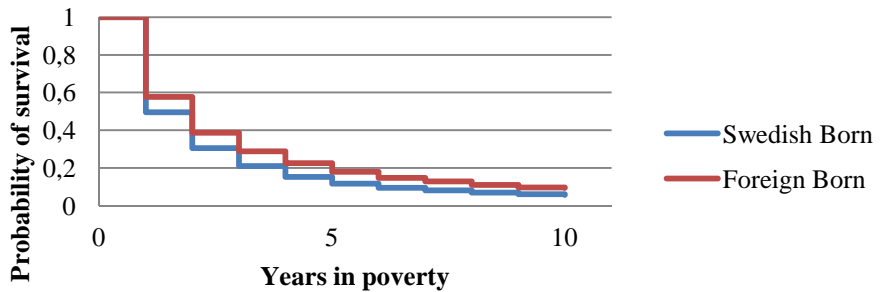
Figure 4: Events associated with poverty exits (prevalence rates)
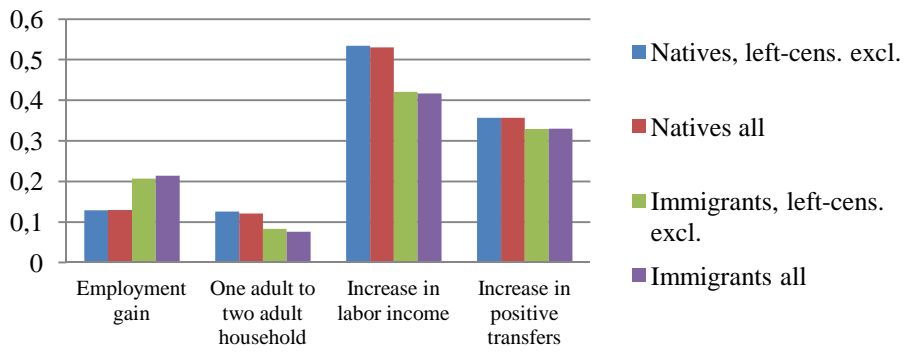
Figure 5: Poverty exit rates conditional on event
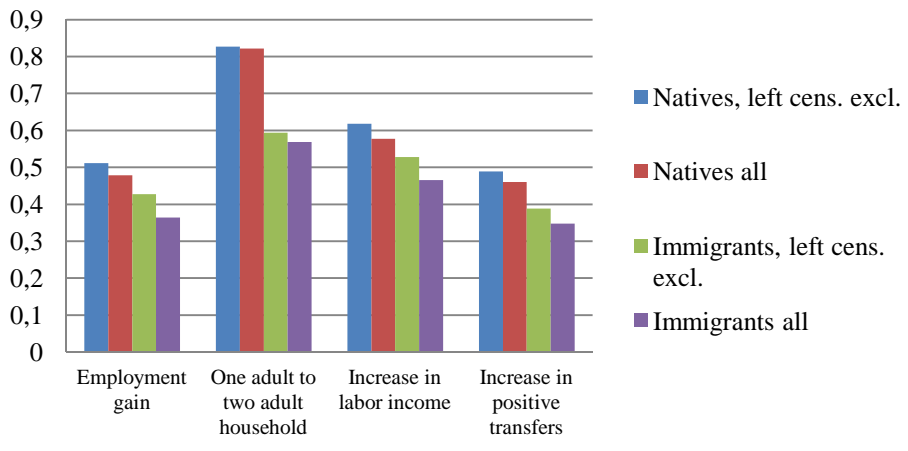
Figure 6: Kaplan-Meier survivor functions, poverty re-entries
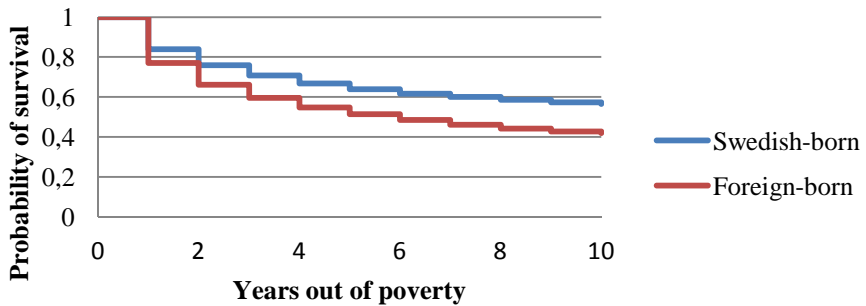
Figure 7: Events associated with poverty entries (prevalence rates)
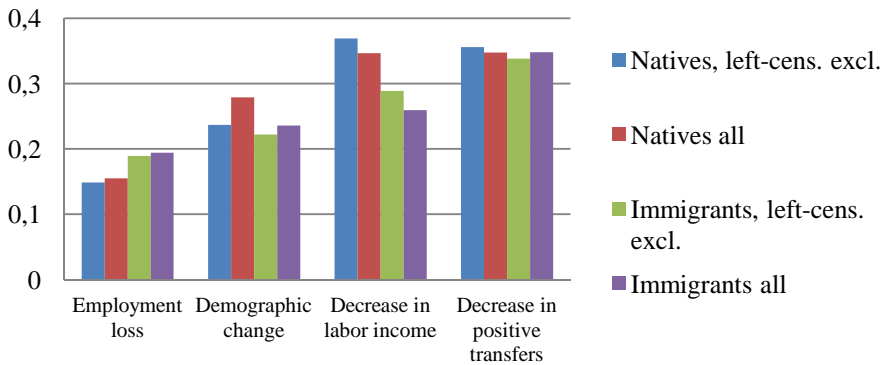
Figure 8: Poverty entry rates conditional on event
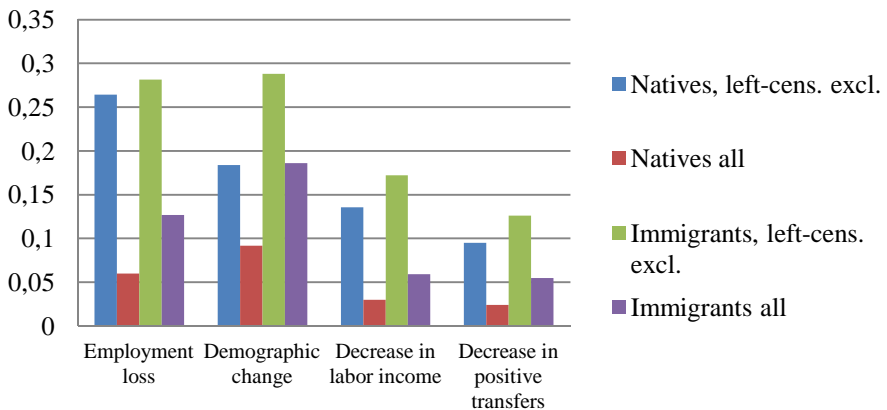
Dependent variable: poverty exit	Model 1		Model 2		Model 3	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Number of children	0.825***	0.007	0.828***	0.007	0.807***	0.006
Number of adults (ref: one)						
Two	0.951**	0.020	0.947**	0.020	1.094***	0.024
Three or more	1.251***	0.035	1.250***	0.035	1.385***	0.040
Age at start of the spell	0.989***	0.004	0.989***	0.004	0.988***	0.004
Age squared at start of the spell/100	1.005	0.005	1.004	0.005	1.016**	0.005
Education level (ref: less than HS)						
High school	1.270***	0.023	1.265***	0.023	1.265***	0.023
More than HS	1.409***	0.028	1.408***	0.028	1.388***	0.029
Missing	0.908	0.061	0.924	0.063	1.068	0.768
Other hshld member with more than HS	1.070***	0.028	1.074***	0.029	1.070**	0.029
Share of employed adults	2.356***	0.061	2.344***	0.061	4.783***	0.148
Male	1.017	0.014	1.019	0.014	1.025*	0.014
Marital status	1.011	0.020	1.025	0.022	0.949**	0.020
Poverty gap	0.221***	0.008	0.221***	0.008	0.168***	0.006
Spell duration (ref: one year)						
Two years	0.699***	0.013	0.699***	0.013	0.711***	0.013
Three years	0.543***	0.013	0.544***	0.013	0.566***	0.014
Four years	0.497***	0.015	0.498***	0.015	0.526***	0.017
Five years	0.459***	0.019	0.461***	0.019	0.487***	0.021
Six or more years	0.364***	0.014	0.366***	0.014	0.401***	0.016

TABLE 1 (CONTINUED):

Foreign-born	0.830***	0.014			0.826***	0.015
Immigrant group (ref: Swedish-born)						
Nordic			0.913**	0.039		
EU25 non-Nordic			1.022	0.073		
Chilean			1.093	0.087		
Iraqi			0.607***	0.035		
Iranian			0.900*	0.050		
Polish			0.851*	0.071		
Turkish			0.776***	0.045		
Former Yugoslav			0.868***	0.032		
African			0.746***	0.037		
Other			0.799***	0.023		
Employment gain, sample person					3.597***	0.115
Employment gain, other person					2.790***	0.126
Transition to two plus adult household					6.050***	0.224
Beginning of social benefits					1.481***	0.046
Control for year	YES		YES		YES	
Person-years			107,617			
Persons			42,704			

Note: *p<0.10; **p<0.05; ***p<0.01; The coefficients are reported as odds ratios.

Dependent variable: poverty exit	Model 1		Model 2	
	Coeff.	s.e.	Coeff.	s.e.
Number of children	0.812***	0.006	0.802***	0.006
Number of adults (ref: one)				
Two	0.962*	0.021	1.071***	0.025
Three or more	1.339***	0.035	1.412***	0.038
Age at start of the spell	1.013***	0.004	1.008*	0.004
Age squared at start of the spell/100	0.975***	0.005	0.991*	0.005
Education level (ref: less than HS)				
High school	1.120***	0.020	1.100 ***	0.020
More than HS	1.293***	0.027	1.244***	0.026
Missing	0.879***	0.040	0.946	0.044
Other household member with more than HS	1.051**	0.024	1.039	0.024
Share of employed adults	2.264***	0.061	3.995***	0.124
Male	0.977	0.015	0.973*	0.015
Marital status	0.908***	0.017	0.866***	0.017
Poverty gap	0.167***	0.007	0.134***	
Spell duration (ref: one year)				
Two years	0.770***	0.015	0.784***	0.015
Three years	0.637***	0.016	0.661***	0.017
Four years	0.555***	0.019	0.583***	0.020
Five years	0.532***	0.024	0.569***	0.026
Six or more years	0.409***	0.023	0.445***	0.025

TABLE 2 (CONTINUED)

YSM at the start of the spell	0.999	0.004	1.003	0.004
YSM squared at the start of the spell/100	0.998	0.007	0.991	0.007
Pre-1980 cohort (ref.)				
1980-1990 cohort	0.907***	0.030	0.917**	0.031
Post-1990 cohort	0.799***	0.039	0.820***	0.041
Lives with Swedish-born partner	1.174***	0.034	1.172***	0.035
Stockholm/Gothenburg/Malmo	1.023	0.016	1.033**	0.017
Employment gain, sample person			3.327***	0.103
Employment loss, other person			2.782***	0.100
Transition to two plus adult household			3.083***	0.117
Beginning of social benefits			1.397***	0.049
Control for immigrant group	YES		YES	
Control for year	YES		YES	
Person-years	101,676			
Persons	37,785			

Note: *p<0.10; **p<0.05; ***p<0.01; The coefficients are reported as odds ratios. Coefficients for immigrant groups are not reported for the sake of space. The general pattern is similar to that in Table 1.

TABLE 3:
POVERTY RE-ENTRIES, DISCRETE-TIME LOGISTIC HAZARD MODEL

Dependent variable: poverty entry	Model 1		Model 2		Model 3	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Number of children	1.062***	0.010	1.059***	0.010	1.138***	0.010
Number of adults (ref: one)						
Two	0.960*	0.021	0.969	0.022	0.637***	0.016
Three or more	0.940**	0.024	0.944**	0.025	0.589***	0.017
Age at start of the spell	0.999	0.004	0.998	0.005	1.009*	0.005
Age squared at start of the spell/100	0.997	0.005	0.998	0.005	1.009*	0.005
Education level (ref: less than HS)						
High school	0.778***	0.015	0.788***	0.016	0.816***	0.016
More than HS	0.757***	0.017	0.762***	0.018	0.827***	0.019
Missing	0.999	0.025	0.988	0.072	0.960	0.073
Other hshld member with more than HS	0.999	0.025	0.991	0.025	0.959	0.025
Share of employed adults	0.401***	0.014	0.403***	0.015	0.315***	0.012
Male	1.075***	0.017	1.073***	0.016	1.089***	0.017
Married	0.882***	0.019	0.881***	0.019	1.042*	0.024
Poverty gap	0.305***	0.012	0.305***	0.012	0.283***	0.012
Spell duration (ref: one year)						
Two years	0.645***	0.014	0.647***	0.014	0.642***	0.013
Three years	0.466***	0.012	0.467***	0.012	0.467***	0.012
Four years	0.407***	0.012	0.409***	0.012	0.411***	0.013
Five years	0.326***	0.012	0.328***	0.012	0.333***	0.012
Six or more years	0.234***	0.007	0.236***	0.007	0.245***	0.008

TABLE 3 (CONTINUED)

Foreign-born	1.285***	0.023			1.220***	0.023
Immigrant group (ref: Swedish-born)						
Nordic			1.154***	0.053		
EU25 non-Nordic			1.105	0.082		
Chilean			1.301***	0.100		
Iraqi			1.610***	0.095		
Iranian			1.353***	0.076		
Polish			1.324***	0.106		
Turkish			1.603***	0.090		
Former Yugoslav			0.924**	0.036		
African			1.626***	0.080		
Other			1.401***	0.042		
Employment loss, sample person					5.430***	0.179
Employment loss, other person					3.582***	0.197
Transition to one adult household					6.821***	0.225
New child enters household					3.747***	0.105
Termination of social benefits					1.309***	0.042
Control for year	YES		YES		YES	
Person-years			242,837			
Persons			43,250			

Note: *p<0.10; **p<0.05; ***p<0.01; The coefficients are reported as odds ratios.

Dependent variable: poverty entry	Model 1		Model 2	
	Coeff.	s.e.	Coeff.	s.e.
Number of children	1.060***	0.008	1.123***	0.009
Number of adults (ref: one)				
Two	0.856***	0.020	0.654***	0.016
Three or more	0.708***	0.018	0.567***	0.015
Age at start of the spell	0.963***	0.005	0.966***	0.005
Age squared at start of the spell/100	1.039***	0.005	1.042***	0.006
Education level (ref: less than HS)				
High school	0.831***	0.015	0.849***	0.016
More than HS	0.803***	0.017	0.851***	0.019
Missing	1.139***	0.050	1.155***	0.053
Other hshld member with more than HS	0.902***	0.020	0.892***	0.021
Share of employed adults	0.407***	0.013	0.309***	0.010
Male	1.105***	0.017	1.074***	0.017
Marital status	1.114***	0.023	1.169***	0.025
Poverty gap	0.170***	0.008	0.159***	0.008
Spell duration (ref: one year)				
Two years	0.641***	0.013	0.643***	0.013
Three years	0.485***	0.013	0.492***	0.013
Four years	0.413***	0.013	0.431***	0.014
Five years	0.325***	0.013	0.340***	0.014
Six or more years	0.281***	0.012	0.304***	0.013

TABLE 4 (CONTINUED)

YSM at the start of the spell	1.001	0.004	1.011***	0.004
YSM squared at the start of the spell/100	0.981**	0.008	0.965***	0.009
Pre-1980 cohort (ref.)				
1980-1990 cohort	0.963	0.035	0.989	0.004
Post-1990 cohort	0.967	0.049	1.022	0.054
Lives with Swedish-born partner	0.938**	0.026	0.943**	0.027
Stockholm/Gothenburg/Malmo	1.042***	0.017	1.039**	0.017
Employment loss, sample person			4.609***	0.143
Employment loss, other household member			2.694***	0.102
Transition to one adult household			4.362***	0.157
New child enters household			5.452***	0.153
Termination of social benefits			1.271***	0.044
Control for immigrant group	YES		YES	
Control for year	YES		YES	
Person-years	170,724			
Persons	41,465			

Note: *p<0.10; **p<0.05; ***p<0.01; The coefficients are reported as odds ratios. Coefficients for immigrant groups are not report for the sake of space. The general pattern is very similar to that in Table 3.

Appendix

POVERTY TRANSITIONS, DISCRETE-TIME LOGISTIC HAZARD MODEL, WITH AND WITHOUT CONTROLLING FOR THE PREVIOUS (NON-) POVERTY SPELL

	Poverty exits		Poverty re-entries	
	Model 1	Model 2	Model 1	Model 2
Number of children	0.819***	0.816***	1.053***	1.052***
Number of adults (ref: one)				
Two	0.956	0.950	0.932***	0.933***
Three or more	1.339***	1.323***	0.943*	0.944*
Age at start of the spell	0.997	1.003	1.002	0.999
Age squared at start of the spell/100	0.994	0.987	0.992	0.995
Education level (ref: less than HS)				
High school	1.190***	1.197***	0.785***	0.791***
More than HS	1.455***	1.468***	0.763***	0.771***
Missing	0.858	0.858	1.034	1.043
Other hshld member with more than HS	0.994	0.998	1.040	1.043
Share of employed adults	2.340***	2.356***	0.393***	0.396***
Male	1.002	1.001	1.067***	1.067***
Married	1.003	1.002	0.866***	0.859***
Poverty gap	0.212***	0.210***	0.308***	0.309***
Spell duration (ref: one year)				
Two years	0.773***	0.761***	0.647***	0.653***
Three years	0.626***	0.610***	0.472***	0.480***
Four years	0.569***	0.549***	0.412***	0.423***
Five years	0.504***	0.480***	0.337***	0.349***
Six or more years	0.463***	0.433***	0.242***	0.255***

Foreign-born	0.861***	0.862***	1.271***	1.260***
Previous poverty spell (ref: one year)				
Two years				1.092***
Three years				1.156***
Four years				1.254***
Five or more years				1.405***
Previous non-poverty spell (ref: one year)				
Two years		1.111***		
Three years		1.235***		
Four years		1.237***		
Five or more years		1.249***		
Control for year	YES	YES	YES	YES
Person-years	41,723	41,723	171,401	171,401
Persons	16,757	16,757	35,464	35,464

Note: *p<0.10; **p<0.05; ***p<0.01; The coefficients are reported as odds ratios. Standard errors not reported.

2. Occupational Trajectories and Occupational Cost among Senegalese Immigrants in Europe [15]

2.1. 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 chapter 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 chapter

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 study 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 chapter.

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, Redstone 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 chapter is organized as follows. Main research goals and hypotheses are presented in Section 2.2. The aim of Section 2.3 is to make the reader more familiar with the social context of Senegalese migration

to Europe. Section 2.4 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 2.5. Section 2.6 features a multivariate analysis of occupational attainment, while the results of discrete-time analysis of occupational mobility are presented in Section 2.7. The analysis then moves on to the estimation of occupational cost of migration from Senegal to Europe in Section 2.8. Concluding remarks are presented in Section 2.9.

2.2. Research Goals and Hypotheses

The trajectory around which the empirical analysis will unfold in this chapter 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 study 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 chapter. 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 study looks at occupational mobility of immigrants from a somewhat reversed angle. While most other studies analyze several immigrant groups in a single destination country, quite the opposite is done in this chapter, 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 study 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 study. Instead, the theoretical coordinates of the analysis 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.

2.3. 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 chapter: 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)[16]. 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

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

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 chapter 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 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.

2.4. 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 chapter 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 study 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 study.[17] 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 analysis: 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.

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[17] The use of new scale in this study 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

All analyses reported in the chapter refer to the Senegalese-born immigrants between 25 and 65 years of age at the time of the survey.

2.5. 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.

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 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.

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[18]. 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

2.6. 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

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

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 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*[19] and *ISEI score at the first job in Europe* are also included in the analysis of the current job score[20]. All observations in the

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[19] 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.

[20] 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

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

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education years spent in Europe and years spent inactive in the labor market in Europe.

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 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.

2.6.1. 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

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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.

2.6.2. 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

2.7. 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-1* and *t* 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. If there is no change in job score between *t-1* and *t,* 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-1*, 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-1* and *t*. 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-1* and *t* do not refer to two consecutive calendar

years in these cases. Instead, period *t-1* stands for the last pre-return year in Europe, while *t* is the first post-return year in Europe.

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 Section 2.5. suggest 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

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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[21]. 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.

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

2.8. 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 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

2.9. Conclusion

Based both on prominent theories from migration research and on contextual characteristics of contemporary African migration to Europe, the study 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 Section 2.2. 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

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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 Figures

Figure 1: Population Projections (2010=100)

Source: United Nations Population Division

Figure 2: Occupational status before and after migration (ISEI)
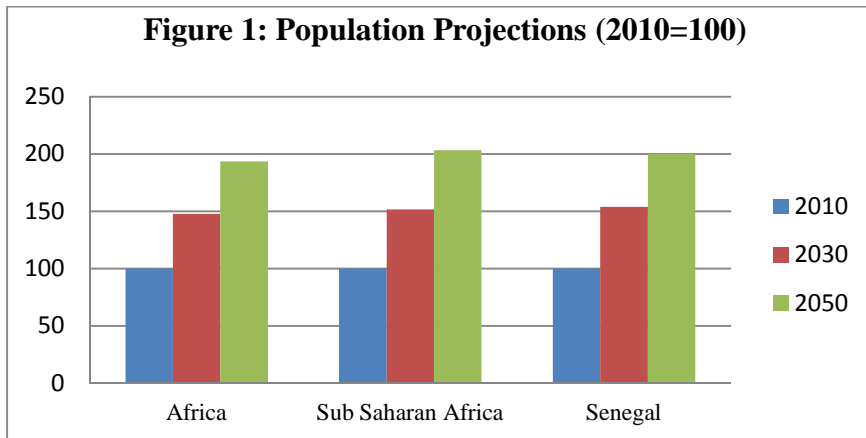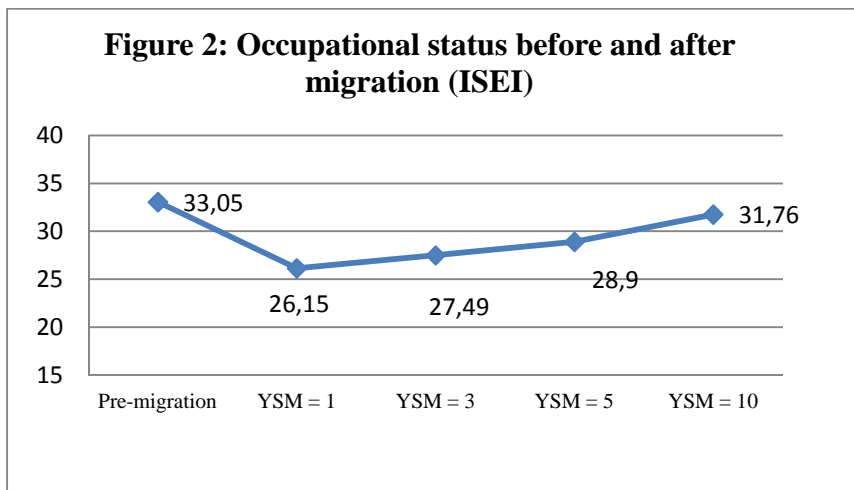
Source: MAFE (weighted)

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)

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

→ First post-migration year →	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Total
↓ Last pre-migration year ↓											
(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**

TABLE 3 (CONTINUED, 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 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./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 resid. 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
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

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

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
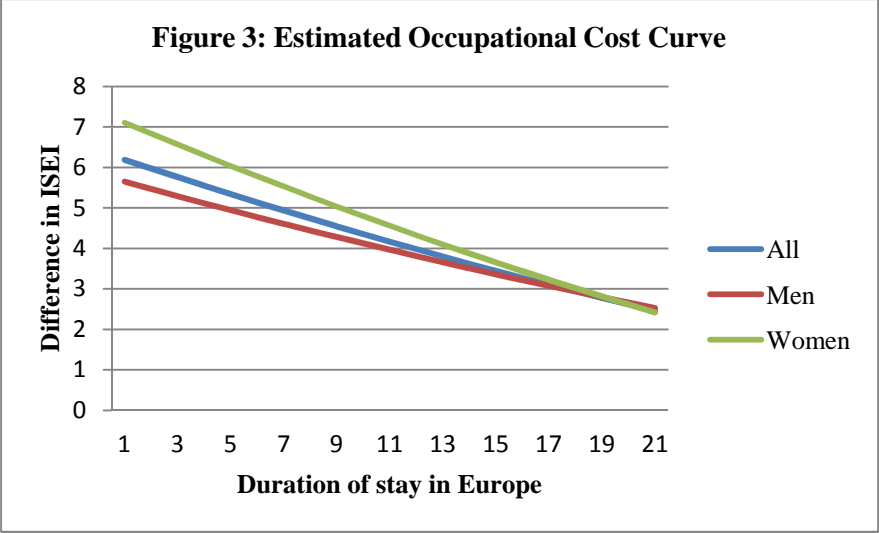
Source: MAFE

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

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

3. Immigrant Satisfaction and Duration of Stay at Destination [22]

3.1. Introduction

Over the course of the last two decades, economists, psychologists and sociologists have all been increasingly interested in the analysis of self-reported measures of individual well-being (see the evidence in Kahneman and Krueger, 2006). Another interdisciplinary research field that gained a lot of popularity during practically the same period is migration research. However, somewhat surprisingly, not much research has been done that brings together these two fields of study. We know quite a lot about how immigrants compare to natives along the objective parameters of socio-economic well-being or health. In contrast, not even remotely as much has been done to explain how subjective well-being among immigrants is determined and whether the immigrants differ from natives with respect to the mechanisms which generate subjective utility. Reducing this imbalance in migration research is the main motivation of this study. But, first of all, why would one believe that immigrants might be distinct from natives in terms of self-reported satisfaction? Two circumstances can be considered the principal sources of potential differences in satisfaction between natives and immigrants: first, most immigrants belong to an ethnicity other than the dominant ethnicity in the destination country; second, immigrants are migrants, while the natives are not (or, at least not international migrants). The differences in satisfaction between different ethnicities inhabiting the same area have been found in some previous studies (Van Praag et al, 2010), but how

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should these differences be interpreted? Under some conditions, the very awareness of belonging to a specific ethnicity may increase or decrease the subjective utility. For instance, life satisfaction of a Turkish-born resident of Frankfurt may increase due to increased feeling of pride for recent economic and political upswing of his native country. It may also increase temporarily in the days or weeks following an important victory of the Turkish national football team. On the other hand, a feeling of being discriminated against on the basis of ethnicity will very likely decrease life satisfaction. Interestingly, the perceived discrimination has also been found to be associated with higher ethnic group identification which, in turn, has a positive impact on life satisfaction (Verkuyten, 2008). However, the ethnic-specific satisfaction patterns are most likely the outcome of an interplay of a more complex set of mechanisms than the sense of belonging to an ethnicity alone. Two additional mechanisms appear to be particularly important. The first mechanism is the existence of different reference groups with which individuals from different ethnic groups (or, in this context, natives and immigrants) compare themselves, and which are characterized by different levels of average income. A related, yet separate mechanism that may be responsible for cross-ethnic differences in satisfaction are cultural traits, since some research shows that their impact on the patterns of subjective well-being is not to be underestimated either (see Diener and Diener, 2009; Schimmack et al., 2002; Cummins, 1998). But, some prominent concepts originating from the classical migration literature may suggest that the satisfaction-generating mechanisms among immigrants would be different even if they were of the same ethnicity as natives (which, in fact, is the case with a substantial share of immigrants in this analysis). The mechanism underlying this argument would be the selection into migration, an issue that has been broadly dealt with in the migration research (see Chiswick, 1978, Carliner, 1980, Borjas, 1991). More precisely, it is assumed that

economic migrants are more ambitious, entrepreneurial and, in general more economically oriented than non-migrants. If this is true, then it does not take much to imagine that the utility of an average migrant might be more affected by income, not only when compared to his or her non-migrant countrymen, but also when compared to a typical native person. Bartram (2011) provides some evidence that corroborates this view.

The setting for the underlying study is Germany. Since the 1950s and the start of economic recovery, famously referred to as *Wirtschaftswunder*, Germany was able to attract millions of immigrants, mostly from Turkey, but also from other countries of the Mediterranean Basin, such as Italy, former Yugoslavia, Spain and Greece. In subsequent decades, however, and similar to trends in other European destinations, an increasing number of non-European immigrants settled in Germany making the country's immigrant stock more heterogeneous than before. What makes the German case somewhat special in the European context is the fact that one of the largest immigrant groups are the so-called *Aussiedler*, ethnic Germans who migrated to Germany from the former Soviet Union and other Eastern European countries, such as Poland and Romania (for which reason they will also be referred to as Eastern European immigrants in this chapter). What distinguishes this group from almost all other immigrant groups in contemporary Western Europe is their cultural proximity to the host country: for instance, a substantial share of these immigrants practically migrates "into their own mother tongue". Also, the context of reception (Portes and Böröcz, 1989) they face is more favorable than that of other immigrant groups in the country: for instance, unlike other immigrants, most *Aussiedler* are awarded German citizenship shortly after the arrival to Germany.

Not all aspects of satisfaction have been studied to an equal extent. Life satisfaction (LS) has been given considerable attention by researchers over the course of previous decades[23]. It has been shown that it is influenced by a wide range of social, economic and demographic factors, as this has been shown in detailed literature surveys by Frey and Stutzer (2002), Senik (2005) and Dolan, Peasgood and White (2007). Not very surprisingly, that income is an important predictor of happiness is almost a universal finding. To put it simply, richer individuals report higher satisfaction levels than poorer individuals. However, it is not only the absolute, but also the relative income that matters, as a large literature finds that people also base their satisfaction on how their income compares with the income of others. Put another way, people's subjective well-being is highly influenced by what they see around. The effect of relative income is expected to be the opposite of that of absolute income: income of reference group is negatively correlated with subjective well-being (Easterlin, 1995; Clark and Oswald, 1996; McBride, 2001). Apart from the income-related variables, a number of other socio-demographic attributes have also been found to affect various aspects of satisfaction and these will be briefly discussed later on, when explaining the choice of explanatory variables in the model. As compared to studies of happiness, a body of research on income satisfaction emerged more recently but is steadily growing (see D'Ambrosio and Frick, 2007; Burchhardt, 2005; Vera-Toscano et al, 2006; Labeaga et al, 2007). In the previous research, the set of variables used to explain variation in income satisfaction has been highly similar, or the same, to the variables most frequently utilized to explain life satisfaction. This study will pose no exception to the practice, and the same set of variables will be used to explain both aspects of satisfaction.

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[23] Life satisfaction and happiness are considered synonymous terms in this paper and are used interchangeably.

For a long time, the well-being research with some more focus on immigrant population belonged primarily to the realm of social psychology (see Berry, 1997, Berry, 2001, Phinney, Horenczyk, Liebkind and Vedder, 2001). On the other hand, as already mentioned, the research on immigrant well-being using self-reported satisfaction scales is scarce, but not completely absent. Apart from the studies already mentioned in this chapter (Verkuyten, 2008; Bartram, 2011), another recent attempt to shed light on life satisfaction among immigrants was made by Safi (2010), who focuses on first and second generation immigrants in thirteen European countries and demonstrates that immigrants' dissatisfaction relative to natives does not diminish over time and across generations. Gokdemir and Dumludag (forthcoming) compare life satisfaction of two largest non-EU immigrant communities in the Netherlands. It turns out that Morrocan immigrants, although faced with higher unemployment and lower average income, report higher life satisfaction than Turkish immigrants. To the best of my knowledge, there have been no studies on income satisfaction that focus primarily on immigrants. On the other hand, some authors included immigrant dummies in the studies of satisfaction patterns of total population. For instance, D'Ambrosio and Frick (2007) find that the individuals living in the households whose head holds foreign citizenship do not significantly differ from other individuals in terms of income satisfaction, all else equal. However, as the focus of the paper is not on immigrant population, the authors do not look at possible differences among various ethnicities, and it cannot be ruled out that their finding is due to masked heterogeneity in satisfaction between immigrant groups in Germany.

The rest of the chapter is organized as follows. Section 3.2 will present main research questions as well as predictions regarding the outcome of the analysis. Data and some descriptive statistics will be presented in

Section 3.3, while Section 3.4 describes the methodological approach to the multivariate analysis. The findings of the multivariate analysis are presented in Section 3.5, while in Section 3.6 it is examined whether the impact of some factors (in particular, that of years since migration) on satisfaction changes depending on how reference groups are defined. Section 3.7 provides a conclusion.

3.2. Research Goals

Given the degree of richness of the data as well as the sample size, four research questions have been identified as both relevant and feasible in order to obtain a better insight into patterns of subjective well-being among immigrants. First, are immigrants in general more or less satisfied with life and income as compared to natives with the same observable characteristics? Second, do the conclusions change and, if yes, how once we take into account the heterogeneity of immigrant population in Germany? Third, which determinants are more salient for satisfaction levels among natives and which ones matter more for immigrants? The fourth research question focuses on immigrants only and asks how the duration of stay in Germany affects satisfaction levels among the foreign-born.

In line with previous similar research, it is reasonable to expect that the multivariate analysis will suggest that, for both natives and immigrants, income-related variables (i.e. actual income or employment) will be more salient for income satisfaction, while other variables (health, marital status, etc.) will have a stronger effect on life satisfaction. On the other hand, an attempt to make predictions about possible differences between the German-born and immigrants in terms of how their satisfaction levels are shaped would hardly be anything more than a speculation at this stage.

However, when it comes to immigrant-specific attributes, more precisely to the relationship between satisfaction and duration of stay, it is possible that some sound predictions can be made ex ante. Let us assume that individual utility can be described in the following manner:

$$U = \Phi\,(Y, R, O, \varepsilon)$$

In plain words, one should expect satisfaction to be affected by 1) *the actual income* (Y); 2) *relative standing in the society* as expressed through relative income (R); 3) *expectations* regarding the income, or rather the *outcome of the expectations,* which in simple terms can be assumed to be a difference between the actual income and income expectations (O=Y–E) and is positively associated with satisfaction; 4) a *set of potentially relevant observable socio-economic characteristics* (ε), which will be briefly discussed in Section 3.4.1. Since expectations and aspirations are closely related concepts (and in some contexts even synonymous terms), it is clear that the model is partly based on aspiration level theory (Michalos, 1991).

Two (arguably not too strong) assumptions are made at this point. First, it is assumed that other migrants at least to some extent act as a reference group for a typical migrant, regardless of his or her duration of stay in the destination. Akay et al. (2011) provide some evidence that strengthens this assumption, even though the focus of their analysis is on the internal migrants. The second assumption is based on a well-documented evidence of positive relationship between immigrant income and the duration of stay in the destination[24], which to a great degree can be explained by the process of labor market assimilation. Namely, it is assumed that the

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[24] The terms "duration of stay", "years since migration" and "YSM" are used interchangeably in this paper.

immigrants themselves perceive this positive relationship, whether by observing their own or the previous arrival cohorts, and expect their income too to rise with years since migration. Consequently, a non-recent immigrant (ysm+) will, all else equal, have higher expectations about income than a recent immigrant (ysm-). So, in spite of having the same income, the outcome of expectations for the recent immigrant will be more favorable than that for a non-recent immigrant ($O_{ysm-} > O_{ysm+}$). Figure 1 is an attempt at describing this reasoning graphically. For the sake of a simpler presentation, O_{ysm-} is positive, while O_{ysm+} is negative, but, net of income and other factors, the relationship $O_{ysm-} > O_{ysm+}$ also holds if the two have the same sign.

Figure 1 about here

To what extent a reference group captures hypothesized differences in levels of expectation (and, consequently, the outcome of these expectations) will depend on whether the duration of stay in the destination is integrated into the definition of the reference group. Two hypotheses can be derived from the discussion above. First, one should expect that satisfaction, all else equal, will be negatively associated with the duration of stay in the models in which the latter is not considered when defining reference groups. Second, in a model in which immigrant reference groups are defined taking into account the duration of stay, one should expect the negative effect of YSM to weaken or to disappear altogether in the multivariate analysis.

3.3. Data and Descriptive Statistics

The data are drawn from the German Socio-Economic Panel (GSOEP). Time span is from 1994, the first year in which a substantial number of the *Aussiedler* were added into the sample, until 2009, which is the last wave currently available to me. In each wave of this panel respondents are asked to estimate their own life satisfaction, income satisfaction, as well as the other aspects of satisfaction. An undoubtedly good feature of the GSOEP is that satisfaction is measured on the scale from 0 to 10, which is a wider range than in most similar panels. Another fortunate characteristic of this panel is that foreign-born population is oversampled, which allows for a reliable analysis of immigrant population, both descriptive and multivariate. The dataset is by no means big enough for all population breakdowns which may be considered relevant in this context, but the number of foreign-born persons in the dataset in combination with a variety of satisfaction indicators and the width of satisfaction scale makes this panel one of the most appropriate European datasets for this type of analysis. All estimations presented in this chapter include the adults aged between 18 and 65 and the reference groups are also constructed using income information from this age range.

Let us now have a look at the general patterns of satisfaction levels measured by two indicators used in this analysis. Table 1 shows distribution of both satisfaction indicators for the pooled 1994-2009 sample.

Table 1 about here

It turns out that distributions of income satisfaction and life satisfaction are fairly similar. It has been noted in the earlier research (e.g., Landua, 1992) that respondents tend to move away from extreme values so that very few of them report satisfaction levels of 0, 1 or 10, and this is also the case here, for both aspects of well-being. Also worth mentioning is that almost two thirds of respondents report income satisfaction level of 5, 6, 7, or 8, while as many as three quarters of the respondents report these values when referring to life satisfaction. The mean value of self-reported life satisfaction is higher than that of income satisfaction (6.88 and 6.06, respectively). When the analysis of satisfaction trends is done for natives and immigrants separately, several interesting findings emerge. As can be seen in Figure 2, natives are more satisfied than immigrants with both income and life in general and this is the case in every observed year. Nonetheless, the difference is smaller for life satisfaction than income satisfaction: the difference between two groups in terms of the former is 2.4% as compared to 8.3% in terms of the latter. It is also noteworthy that yearly averages of two groups move together: two groups may have somewhat different satisfaction levels, but they seem to respond very similarly to changes in their socio-economic environment.

Figure 2 about here

Separate descriptive analysis by gender (results not reported to conserve space) reveals that within both social groups and as measured by both subjective indicators, women are somewhat more satisfied than men. If we break down the sample by nativity and by gender and compare these four groups, the pattern is the same for both income satisfaction and life satisfaction: the most satisfied are German-born women, followed by German-born men, who are somewhat more satisfied than foreign-born women. Immigrant men are the least satisfied group. However,

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differences between immigrants and natives in terms of both satisfaction indicators should come as no surprise if we carry in mind that immigrants have lower income, just like it is possible that these differences can also be explained by socio-demographic characteristics other than income. Therefore, it will be necessary in one of the following sections of the chapter to explore what native-immigrant differences will look like once we control for other factors that are believed to affect satisfaction levels.

3.4. Methodology

Dependent variables in the multivariate analysis are *satisfaction with household income* and *satisfaction with life*, both measured on the scale from 0 to 10. After inspecting the literature, there is a strong impression that the level of agreement on how this scale should be treated is somewhat low. While some researchers think of this scale as ordinal, others treat is as linear. Most importantly however, the way we think of this scale directly affects the methodological approach: assuming ordinality implies the use of ordinal response models, while thinking of the scores as cardinal calls for the use of OLS. Ferrer-i-Carbonell and Frijters (2004) note that methodological differences in research of satisfaction coincide to a significant extent with cross-disciplinary borders because sociologists and psychologists assume cardinality on the satisfaction scale, while the economists have usually interpreted happiness scores as ordinal. Nevertheless, in the same paper Ferrer-i-Carbonell and Frijters show that choosing between ordinality or cardinality does not affect general findings. What does matter, however, is whether time-invariant unobserved individual characteristics (e.g. optimism) are appropriately taken into account. Fixed effects estimation seems to be a suitable procedure in this context, but it is known that its use implies dropping all time-invariant characteristics out of regression, while at the

same time some of these characteristics (e.g. immigrant dummy) are crucial for answering some research questions in this chapter. The approach taken here to resolve this issue is the use of Mundlak correction. In a nutshell, Mundlak (1978) showed that the random effects estimation approximates the results of the fixed effects estimation if means of time-varying variables are included as covariates into the statistical model. The satisfaction scale is treated as cardinal in this study, so that the principal analyses are based on OLS random effects with Mundlak correction. This is primarily due to computational reasons. Namely, random effects ordered probit with clustering option is a very time-consuming procedure, given the sample size, the number of regressions reported in this analysis and the technical capacities available at the time of writing this chapter. However, in order to check for the robustness of the results, some estimations with smaller sample size (i.e. Table 5) are replicated using ordered probit techniques with Mundlak correction and these results are reported in the Appendix.

3.4.1. Explanatory Variables

The main explanatory variable in the first empirical section is a dummy for an *immigrant* person. Any person born outside Germany is considered an immigrant in this study. In order to account for heterogeneity of immigrant population, this variable will be broken down by immigrant group or the time of arrival, so that appropriate categorical variables are created. Immigrant groups, as defined by the country (countries) of birth are: 1 – Turkish born, 2 – Eastern European immigrants (a majority of which are ethnic Germans), 3 – Southern European immigrants (immigrants originating from Italy, former Yugoslavia, Spain and

Greece)[25], 4 – a residual heterogeneous group comprising all other foreign-born in the sample. There have certainly been very few relevant analyses on satisfaction which did not take into account the *actual household income* and no exception will be made in this study. The main choice that had to be made here was whether to control for the total household income, Y, (as in Burchardt, 2005) or for the household income adjusted for the size of household, Y^e, (as in D'Ambrosio and Frick, 2007). However, the latter approach involves an almost arbitrary *a priori* choice of a single equivalence scale and, additionally, it implicitly assumes that the needs of native and immigrant households can be approximated by the same equivalence scale, something we cannot be certain of. The model hence controls for the total household income, Y, which is also adjusted by consumer price index in order to take care of inflation rate. To downplay the effect of extreme values, the household income is trimmed at the lowest and highest percentile.

Another potentially powerful determinant of income satisfaction is the individual's *relative standing in the society*. Two questions arise immediately: 1) What is the most appropriate way to quantify the relative standing in the society? and 2) Which reference groups should the analysis of the relative standing be based on? Clearly, there are many ways to express an individual's relative income position. For instance, one can think of it as the distance from the mean or median income within the

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[25] These immigrants are grouped into same category due to the same type of migration (namely, labor migration initiated through formal bilateral recruitment programs, so-called *Anwerbeabkommen*), as well as due to similar average performance on the German labor market. Also included in this group are post-1990 former Yugoslav immigrants, some of whom may be political refugees (they cannot be identified as such in the dataset). However, they certainly constitute only a minor share within the group of Southern European immigrants in this sample.

reference group. It can also be quantifying in terms of percentile ranks. However, in line with the findings that the individuals tend to make comparisons "upwards" (Duesenberry, 1949; Ferrer-i-Carbonell, 2005; Clark and Senik, 2010), the approach adopted in this analysis consists in the use of *relative deprivation* as an indicator of relative income. The concept of relative deprivation was originally conceptualized by Stouffer (1949) and further elaborated by researchers such as Davis (1959) or Runciman (1966), whose explanation of relative deprivation is nowadays frequently quoted in the relevant literature: "We can roughly say that a person is relatively deprived of X when i) he does not have X; ii) he sees some other person or persons, which may include himself at some previous or expected time, as having X; iii) he wants X; and iv) he sees it feasible that he should have X". In migration research, the concept of relative deprivation was made famous by Stark and Yitzhaki (1988) and Stark and Taylor (1989), who showed that it can play a significant role in international migration decisions. Chakravarty (1997) proposes the following way of calculating the total relative deprivation of each individual:

$$D_i^r(x) = \frac{\sum_{j=i+1}^{n}(\overline{X_j} - \overline{X_i})}{n\lambda(x)}$$

In plain words, relative deprivation of the individual *i* is calculated as the sum of income gaps between individual *i* and all individuals *j* with an income higher than that of *i*, divided by the total population size *n* and normalized by mean income of the reference group *λ(x)*. The question of which social group should actually be considered reference group is somewhat less clear and it is especially so in the context of comparison of natives and immigrants. The actual peer groups cannot be directly

observed and any choice of reference group may appear too arbitrary. On the other hand, due to very high collinearity, including multiple relative deprivation indices (based on different definitions of reference group) in the same regression does not produce consistent results, at least when working with a sample size that is available here. This is why in the first part of the empirical section, when analyzing the differences between the natives and the foreign-born, I will use the total population as a reference group for all natives and immigrants as this choice appears to be the most neutral at the moment. On the other hand, no matter how we define reference groups, the relative deprivation indices will be highly correlated (between 0.85 and 0.95 in my analyses). One of the implications is that, with the possible exception of the hypothesized changes in the effect of years since migration, the coefficients of all other explanatory variables change only marginally depending on how the reference group is defined.

Also included in the analysis is a set of other control variables that are usually considered in similar research, whose operationalization is straightforward and will not be discussed at much length. These variables include demographic characteristics, such as *age, gender, number of children, marital status* and *years of education*. Also, a common result in the previous studies is that, net of income, unemployment has a negative effect for life satisfaction (Clark and Oswald, 1994; Winkelmann and Winkelmann, 1998), and the same result has been obtained in some studies of income satisfaction (D'Ambrosio and Frick, 2007; Vera-Toscano, 2006). This is why *employment status* is included in the model as another explanatory variable. Whether households accumulated any *savings* during the year prior to the survey may also affect the level of respondents' income satisfaction and life satisfaction, above all because savings are thought to generate a feeling of security. *Year dummies* control for the yearly trends in income inequality, unemployment rate, inflation rate and other indicators of the wider social, political and

economic environment that may affect well-being. An indicator for what used to be *West Germany* is also included in the model. *Saving ability* controls for adequacy of income with respect to the needs, as well as for the overall financial stability of the household. This variable is assigned value 1 if the household reports to be able to save a certain amount of income for large purchases and/or emergencies. The model also controls for housing tenure. The effect of tenure on satisfaction may be twofold. First, housing monthly costs most likely differ in function of whether the individual is an owner or a tenant. Second, a less direct effect may arise due to housing ownership having a positive impact on the feeling of the overall security, which in turn may prompt respondents to report higher satisfaction levels. *Health status* is also controlled for. Since the approach taken in this study is to look at the effect of objective variables rather than that of internal factors (Diener and Lucas, 1999), health status is controlled for through the number of visits to doctor during the previous year, rather than through self-reported health status.

3.5. Multivariate Analysis of Self-Reported Satisfaction

The analysis of native-immigrant satisfaction gap is presented in Table 2. The first two columns report the results of the analysis of income satisfaction, while the estimates of life satisfaction are reported in columns 3 and 4. Models 2a and 2b take into account the heterogeneity of immigrant population, so that in these columns separate coefficients are reported for each of the four immigrant groups. For the sake of clarity, the coefficients of means of time-varying variables are not reported here, but can be obtained by request. Both models 1a (income satisfaction) and 1b (life satisfaction) suggest that immigrants in Germany are, on average,

more satisfied with income and life in general, as compared to the natives with the same observable characteristics. However, the difference of around 0.08 points for both aspects of satisfaction is of a rather modest magnitude. But, the results of Model 2a and Model 2b indicate that immigrant dummy masks heterogeneity among immigrant population: Eastern European and Southern European immigrants are, all else equal, more satisfied with income than natives by around 0.21 and 0.11 points, respectively, while there is no statistically significant difference when comparison is made between natives on one hand and Turkish-born and the residual group of "other" immigrants on the other. Turkish-born immigrants are, however, satisfied with life by 0.10 points less than natives, while Eastern European immigrants turn out to be happier than natives by 0.23 points on the satisfaction scale. The coefficients of other covariates are largely in accordance with previous studies. In general, all explanatory variables have the same sign in both analyses, but income-related variables matter more for income satisfaction, while other variables have a stronger effect on life satisfaction. Disposable household income is positively correlated with satisfaction levels, while the opposite is the case for relative deprivation. The number of adults is negatively associated with satisfaction, another less than surprising results given that household income is not adjusted for household size in the multivariate analysis. The number of children is also negatively associated with income satisfaction, but, somewhat unexpectedly, there is no statistically significant association between the number of children and life satisfaction. This is most likely the result of two simultaneous effects working in opposite directions: more children imply more needs in the household, but studies that control for equivalized rather than total household income show that respondents with children report higher levels of satisfaction (Lelkes 2006; Schwarze and Harpfer 2003). One of the common findings in the satisfaction literature (see Dolan, Peasgood

and White, 2008), the U-shaped relationship between age and satisfaction, has also been found here, with the respondents aged between 50 and 59 being the least satisfied. Similar to the research done previously, men appear to be less satisfied than women, whereas married respondents are more satisfied than the unmarried ones. The number of years of education is *ceteris paribus* negatively associated with satisfaction. Income source matters substantially as the non-employed respondents report clearly lower levels of satisfaction than others. Savings increase satisfaction, while bad health has a negative impact on it. Housing ownership is only statistically significant in the estimation of life satisfaction, but the effect seems to be small. The respondents in the Western federal states report higher satisfaction levels, which corresponds to the previous findings by D'Ambrosio and Frick (2007).

Table 2 about here

The heterogeneity of immigrant population is not only reflected in the presence of different ethnic groups in the receiving society. Immigrants' socio-economic standing, and possibly subjective well-being too, are also affected by the length of stay in the destination. A separate model is therefore introduced in which the categorical variable no longer distinguishes between natives and different immigrant groups, but rather between natives and immigrants classified by duration of stay in Germany. Clearly, the coefficients obtained in this way may still be a consequence of different ethnic composition in different arrival cohorts, which is not controlled for this time. For this reason, apart from a regression in which all foreign-born in the dataset are compared to natives, three additional models are estimated which compare natives and three largest immigrant groups, while within each of these groups the immigrants are classified by duration of stay in Germany. Results reported

in the first column of Table 3 suggest that, all other factors being equal, recent immigrants are more satisfied with both income and life when compared to natives. This still holds for immigrants whose duration of stay is between 10 and 20 years, but the difference to natives is smaller in magnitude. Duration of stay between 20 and 30 years is associated with satisfaction levels most similar to those of natives, as the coefficient for both satisfaction indicators is small and not significant. However, the immigrants whose duration of stay in Germany exceeds 30 years report satisfaction levels lower those indicated by natives, with the difference being statistically significant for both satisfaction indicators. Therefore, when looking at immigrant population as a whole, the results point to the conclusion that immigrants' satisfaction levels relative to those of natives are negatively associated with duration of stay in Germany. Separate comparisons of natives and three immigrant groups are reported in the remaining three columns of Table 3 and indicate that the finding about negative relationship between satisfaction and duration of stay in the destination is not merely a consequence of different ethnic composition of arrival cohorts. Whether one looks at satisfaction with income or satisfaction with life, recent immigrants in all three groups are, *ceteris paribus*, more satisfied than non-recent immigrants.

Table 3 about here

These results can also be viewed through the lenses of "adaptation hypothesis" or "assimilation hypothesis". This theoretical framework acts on the assumption that immigrants undergo processes of psychological, socio-cultural and economic adaptation in the destination country (Berry, 1997), the consequence of which is that they become more similar to natives as years go by (see, for example, Alba and Nee, 1997). Assimilation framework comprises a wide range of settings and

parameters, starting from a vast literature on immigrant labor market assimilation to immigrant assimilation in health (Antecol and Bedard, 2006). It thus comes as no surprise that in some papers (Burchardt, 2006; Safi, 2010) the question was asked whether the immigrants become more similar to natives in terms of self-reported satisfaction (henceforth this will be referred to as the "assimilation in satisfaction levels"). Indeed, Table 3 suggests that some immigrant groups, such as Southern Europeans and Eastern Europeans, do become more similar to natives as years go by. However, the first two columns of Table 3 (the total immigrant population in Germany and the Turkish-born immigrants) show that there is no statistically significant difference between natives and those immigrants who arrived between 21 and 30 years ago, while the immigrants who arrived more than 30 years ago are actually less satisfied with life and income than natives. On the other hand, the only pattern that can be identified in all four columns is that of a negative relationship between satisfaction levels and duration of stay in Germany. This suggests that apparent assimilation of the other two immigrant groups may be incidental, while actually being the result of the negative relationship between satisfaction levels and duration of stay in the destination.

3.5.1. Immigrants and Natives Compared

A related but still a research question on its own is whether any remarkable differences between natives and immigrants arise if satisfaction regressions are done separately for the two groups. The same set of independent variables is used in both regressions, with the only difference being the introduction of control for immigrant group and duration of stay in Germany when estimating the regression for immigrants. By and large, Table 4 illustrates that the patterns of income satisfaction and life satisfaction among natives and immigrants are

similar, but, still, some differences exist. An interesting finding is that both income-related variables, i.e. actual income and relative deprivation, have a greater impact on income satisfaction for natives than for immigrants. One may argue that this result challenges the standard narrative about the migrants being more economically motivated than non-migrants. Some dissimilar patterns are also observed when looking at the effect of some demographic variables on income satisfaction. For instance, among natives, the number of children is negatively and significantly associated with income satisfaction, whereas there is a positive association between being married and income satisfaction. Among the immigrants, however, neither of the two variables is a statistically significant predictor of income satisfaction. Net of other things, more educated natives are less satisfied with life and income, while this is not the case among the immigrants, where no statistically significant association is found between education level and the two indicators of satisfaction. On the other hand, home ownership increases both life satisfaction and income satisfaction of immigrants, while no statistically significant effect of home ownership on satisfaction was identified among the natives.

Table 4 about here

In the lower part of the second column of Table 4 the coefficients of immigrant-specific variables are reported. The differences among immigrant groups correspond to what was reported in Table 2 and will therefore not be commented into more detail here. As far as the effect of duration of stay[26] on satisfaction is concerned, there is a negative and

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[26] Another regression has been done in which YSM and YSM squared are included instead of the YSM intervals. The general conclusions remain

statistically significant relationship between the two, which is in line with the prediction stated in Section 3.2. The negative effect of duration of stay holds for both life satisfaction and income satisfaction and, moreover, the coefficients are fairly similar in these two estimations. Net of other things, as compared to an immigrant who arrived 10 or less years ago, an immigrant who has lived in Germany for more than 30 years will report income satisfaction lower by 0.29 and life satisfaction lower by 0.27 points.

3.6. Alternative Definitions of Reference Group

All the estimations reported above are based on the assumption that the total adult population of Germany acts as the principal reference group which affects the levels of satisfaction with life and income among both natives and immigrants. In reality, however, we do not know with which social groups and with how many of them the respondents compare themselves. But, it is hypothesized in this study that immigrants, at least to some extent, compare themselves with other immigrants who arrived in Germany at the approximately same time (also referred to as "fellow arrivals" in this analysis). This would imply that the immigrants base their expectations about income also by looking at the income of fellow arrivals, whereas the outcome of these expectations affects immigrants' satisfaction with life and income. As a consequence of this hypothesis, a prediction was made in Section 3.2 that there will be a negative relationship between satisfaction and duration of stay in Germany if timing of arrival is not considered when creating reference groups. On the other hand, it was also predicted that once timing of arrival is built into the structure of the reference group, the negative relationship between

unaffected. YSM intervals are, however, more suitable for comparison with the results from the next section.

satisfaction and duration of stay should weaken or disappear altogether. It is also expected that the change in the YSM coefficients will be of a larger magnitude for income satisfaction than for life satisfaction, as the former is more strongly affected by relative deprivation, an income-related variable. In order to test these predictions, five estimations were carried out, each with a different definition of the reference group for immigrants living in Germany. The five reference groups are defined as follows:

1) The *total population of Germany*, both natives and immigrants, is viewed as reference group (the same reference group definition as in all estimations presented in previous sections);

2) Reference group consists of all adults in Germany, regardless of nativity, who have roughly *the same education level* (less than secondary education, secondary education, more than secondary education);

3) Reference group comprises *all immigrants living in Germany*, regardless of timing of arrival;

4) Reference group consists of *all immigrants who belong to the same immigrant group* (using the classification of immigrant groups from Section 3.4.1);

5) Reference group includes *fellow arrivals*, i.e. the immigrants who are classified into the same "YSM range": 0-10, 11-20, 21-30 and more than 30[27].

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[27] Due to simple size limitations, all immigrants, regardless of country of birth, are included in the reference group. An alternative estimation has been done with reference group defined by fellow arrivals <u>and</u> immigrant group. The results are practically the same as when including all fellow arrivals, but the reference groups constructed in this way are very small and it is questionable to what extent

Obviously, only the definition of the last reference group takes into account the timing of arrival. As a consequence, one should expect that the negative relationship between duration of stay in Germany and satisfaction will be more pronounced in the first three regressions than in the fourth one. Table 5 suggests that the coefficients for various YSM ranges hardly vary depending on which of the first four relative deprivation indicators is used, and the negative association between satisfaction and duration of stay is obvious. However, when employing the fifth indicator of relative deprivation, the negative relationship between income satisfaction and duration of stay weakens substantially and the only statistically significant difference is the one between the most recent immigrants and the immigrants who arrived more than 30 years prior to time of survey, with the coefficient being almost twice smaller than in other four models. As far as life satisfaction is concerned, even though the coefficients do decrease slightly when fellow arrivals are considered the reference group, the negative and significant relationship between YSM and life satisfaction persists so that it appears that only a tiny fraction of it can be explained by possibly higher income-related expectations of non-recent immigrants.

Table 5 about here

In order to check for robustness of these results, the same estimations were carried out, but this time using random effect ordered probit model with Mundlak correction. The results are reported in Table A1 and, even though the meaning of the coefficients obtained in this way is somewhat different from OLS coefficients, the general pattern is the same: there is a

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they are representative of all immigrants with these characteristics. Using tighter YSM intervals was not feasible due to sample size.

negative relationship between YSM and both satisfaction indicators when the first four relative deprivation indicators are incorporated into the analysis, but the negative effect of YSM on income satisfaction is reduced considerably once timing of arrival is considered when constructing the relative deprivation indicator: only the difference between the recent immigrants and those with the longest immigrant experience remains statistically significant, and this only at the 10% level. Similar to the OLS analysis, there is also some decrease in the coefficients for life satisfaction, but this change is of a considerably smaller magnitude.

3.7. Conclusion

The aim of the study has been to contribute to a somewhat scarce body of research on life satisfaction and income satisfaction among immigrants. Using the data from the GSOEP, an attempt was made to 1) examine whether immigrants are on average more satisfied or less satisfied than natives, 2) analyze to what extent the heterogeneity of the immigrant population in Germany should be taken into account in the research of subjective well-being; 3) observe whether some important differences in satisfaction patterns arise when separate estimations are done for natives and immigrants; 4) analyze how self-reported satisfaction levels among immigrants are affected by duration of stay in the destination. According to the results obtained, it cannot be argued that Germany's immigrants are, ceteris paribus, more or less satisfied than natives, as some immigrant groups appear to be more satisfied, while others show lower satisfaction levels relative to natives. Also, some, but not all immigrant groups become more similar to natives with duration of stay. But, this apparent "satisfaction assimilation" may only be an incidental result of the negative relationship between satisfaction and duration of stay, which was

identified for the total of immigrant population residing in Germany, as well as for each immigrant group. When estimations of determinants of satisfaction are done separately for natives and immigrants, several noteworthy differences emerge. For instance, it appears that the total household income and relative deprivation have a greater impact on income satisfaction among natives. The final goal was to take a closer look at the negative relationship between satisfaction and duration of stay in Germany. It was hypothesized that satisfaction of immigrants is at least partly determined by the level of household income relative to income of the fellow arrivals and that the negative relationship between satisfaction and YSM will weaken or disappear completely once the timing of arrival is considered when defining reference groups. The results show that, after constructing reference groups by timing of arrival, the negative relationship between satisfaction and YSM indeed weakens substantially when income satisfaction is looked at. On the other hand, the negative association between duration of stay and life satisfaction is persistent, regardless of the way the reference groups are defined.

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Tables and Figures

FIGURE 1: INCOME, EXPECTATIONS AND YEARS SINCE MIGRATION
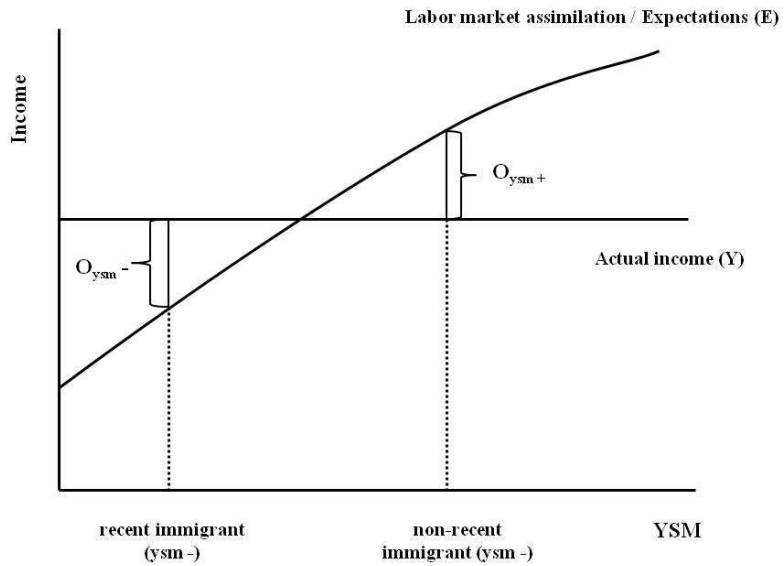
FIGURE 2: AVERAGE LEVELS OF SATISFACTION, NATIVES AND IMMIGRANTS
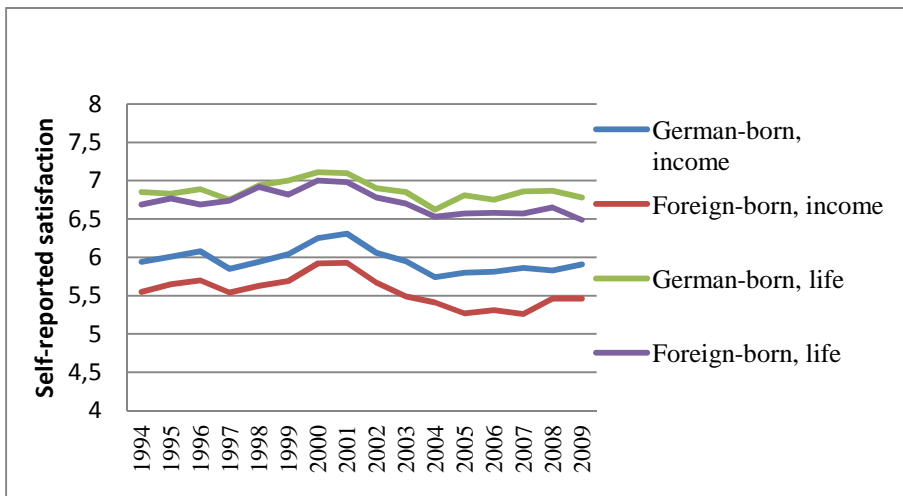
Source: GSOEP

DISTRIBUTION OF INCOME SATISFACTION AND LIFE SATISFACTION
1994-2009 (WEIGHTED)

INCOME			LIFE		
Satisfaction	%	Cum. %	Satisfaction	%	Cum. %
0	2.41	2.41	0	0.53	0.53
1	1.95	4.35	1	0.47	1.01
2	4.25	8.60	2	1.45	2.46
3	6.88	15.49	3	2.91	5.37
4	7.37	22.86	4	4.01	9.38
5	15.98	38.83	5	12.74	22.12
6	12.20	51.03	6	11.57	33.69
7	17.37	68.41	7	22.55	56.23
8	18.97	87.38	8	29.12	85.36
9	7.56	94.94	9	10.51	95.87
10	5.06	100	10	4.13	100

IMMIGRANT-NATIVE SATISFACTION GAP, RANDOM EFFECTS MODEL WITH MUNDLAK CORRECTION

	Income satisfaction				Life satisfaction			
	Model 1a		Model 2a		Model 1b		Model 2b	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Household income/1000	0.067***	0.009	0.067***	0.009	0.003	0.007	0.004**	0.007
Relative deprivation	-3.197***	0.075	-3.197***	0.073	-0.905***	0.058	-0.905***	0.058
# adults	-0.224***	0.010	-0.224***	0.010	-0.077***	0.008	-0.078***	0.008
# children	-0.065***	0.011	-0.065***	0.011	0.010	0.009	0.010	0.009
Married	0.089***	0.023	0.088***	0.023	0.092***	0.018	0.092***	0.018
Age 18-29 (ref.)								
Age 30-39	-0.046**	0.021	-0.045**	0.021	-0.204***	0.016	-0.202***	0.016
Age 40-49	-0.114***	0.023	-0.113***	0.023	-0.348***	0.019	-0.346***	0.019
Age 50-59	-0.142***	0.025	-0.140***	0.025	-0.376***	0.021	-0.372***	0.021
Age 60-65	0.164***	0.030	0.166***	0.030	-0.126***	0.025	-0.121***	0.025
Male	-0.198***	0.019	-0.197***	0.019	-0.151***	0.017	-0.149***	0.017
Years of education	-0.028***	0.008	-0.028***	0.008	-0.020***	0.006	-0.020***	0.006
Foreign-born	0.080***	0.026			0.073***	0.023		
German-born (ref.)								
Turkish			-0.017	0.049			-0.099**	0.042
Eastern European			0.205***	0.042			0.234***	0.035
Southern European			0.105**	0.044			0.057	0.039
Other imm. groups			-0.054	0.054			0.016	0.048

TABLE 2 (CONTINUED):

Full-time empl. (ref.)								
Regular part-time empl.	-0.311***	0.022	-0.311***	0.022	-0.151***	0.018	-0.151***	0.018
Vocational training	-0.292***	0.037	-0.292***	0.037	0.003	0.028	0.003	0.028
Irregular part-time empl.	-0.552***	0.029	-0.552***	0.029	-0.281***	0.023	-0.281***	0.023
Not employed	-0.611***	0.019	-0.611***	0.019	-0.341***	0.016	-0.341***	0.016
Housing ownership	0.027	0.020	0.027	0.020	0.042**	0.016	0.042**	0.016
West	0.253***	0.075	0.253***	0.075	0.188***	0.056	0.188***	0.056
Savings	0.609***	0.012	0.609***	0.012	0.230***	0.009	0.230***	0.009
# doctor visits per year	-0.003***	0.000	-0.003***	0.000	-0.007***	0.000	-0.007***	0.000
Control for year	YES		YES		YES		YES	
Person-years	207,544		207,544		209,989		209,989	
R^2 within	0.115		0.115		0.041		0.041	
R^2 between	0.393		0.393		0.196		0.197	
R^2 overall	0.324		0.324		0.157		0.158	
sigma_u	1.270		1.269		1.090		1.090	
sigma_e	1.470		1.470		1.228		1.228	
rho	0.427		0.427		0.441		0.441	

Notes: *p<0.10, **p<0.05, ***p<0.01; Other controls include means of time-varying variables (coefficients not reported). Standard errors are adjusted by clustering per person.

SATISFACTION GAP (IMMIGRANTS CLASSIFIED BY DURATION OF STAY)
RANDOM EFFECTS MODEL WITH MUNDLAK CORRECTION

| | Income satisfaction | | | | | | | |
| | All immigrants | | Turkey | | Eastern Europe | | South Europe | |
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
German-born (ref.)								
YSM 0-10	0.227***	0.042	0.158	0.102	0.278***	0.054	0.361***	0.109
YSM 11-20	0.073*	0.037	0.067	0.069	0.147**	0.053	0.194**	0.085
YSM 21-30	-0.014	0.037	-0.085	0.062	-0.091	0.103	0.142**	0.055
YSM > 30	-0.114***	0.046	-0.166**	0.078	n/a	n/a	-0.001	0.065
	Life satisfaction							
	All immigrants		Turkey		Eastern Europe		South Europe	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
German-born (ref.)								
YSM 0-10	0.189***	0.035	-0.105	0.094	0.326***	0.044	0.187**	0.092
YSM 11-20	0.058*	0.032	0.001	0.061	0.172***	0.046	0.041	0.065
YSM 21-30	-0.003	0.034	-0.090*	0.056	-0.037	0.103	0.134***	0.047
YSM > 30	-0.150***	0.044	-0.159**	0.081	n/a	n/a	-0.075	0.060

Notes: *$p<0.10$, **$p<0.05$, ***$p<0.01$; other controls include year dummies, means of time-varying variables, as well as the variables reported in Table 1 (coefficients not reported); Eastern European immigrants with duration of stay longer than 30 years were not considered due to too small number of observations. Standard errors are adjusted by clustering per person.

SEPARATE ESTIMATIONS FOR NATIVES AND IMMIGRANTS, RANDOM EFFECTS MODEL WITH MUNDLAK CORRECTION

	Income satisfaction				Life satisfaction			
	Natives		Immigrants		Natives		Immigrants	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Household income/1000	0.069***	0.010	0.036	0.033	0.011	0.007	-0.042	0.027
Relative deprivation	-3.233***	0.082	-3.111***	0.212	-0.811***	0.062	-1.358***	0.174
# adults	-0.233***	0.011	-0.194***	0.023	-0.075***	0.009	-0.093***	0.020
# children	-0.080***	0.012	-0.036	0.023	0.012	0.010	-0.027	0.020
Married	0.139***	0.027	-0.006	0.052	0.130***	0.022	0.132***	0.045
Age 18-29 (ref.)								
Age 30-39	-0.017	0.022	-0.113**	0.055	-0.199***	0.018	-0.149***	0.043
Age 40-49	-0.086***	0.025	-0.166***	0.062	-0.351***	0.020	-0.236***	0.052
Age 50-59	-0.119***	0.028	-0.161**	0.072	-0.370***	0.023	-0.281***	0.060
Age 60-65	0.166***	0.033	0.243***	0.085	-0.126***	0.027	0.021	0.074
Male	-0.199***	0.020	-0.165***	0.056	-0.158***	0.018	-0.106**	0.050
Years of education	-0.043***	0.008	0.027	0.017	-0.026***	0.006	0.001	0.016
Full-time empl. (ref.)								
Regular part-time empl.	-0.307***	0.023	-0.339***	0.064	-0.156***	0.020	-0.117**	0.055
Vocational training	-0.284***	0.040	-0.390***	0.106	0.020	0.030	-0.126	0.088
Irregular part-time empl.	-0.539***	0.031	-0.636***	0.085	-0.280***	0.025	-0.278***	0.069
Not employed	-0.599***	0.021	-0.705***	0.050	-0.328***	0.017	-0.409***	0.046

TABLE 4 (CONTINUED)

Housing ownership	0.009	0.022	0.165***	0.058	0.018	0.018	0.206***	0.049
West	0.238***	0.076	0.690***	0.394	0.190***	0.057	0.097	0.314
Savings	0.615***	0.014	0.576***	0.031	0.229***	0.010	0.239***	0.023
# doctor visits per year	-0.002***	0.000	-0.004***	0.001	-0.007***	0.000	-0.007***	0.001
Turkish-born (ref.)								
East European			0.289***	0.073			0.347***	0.064
South European			0.187***	0.066			0.141**	0.058
Other			0.081	0.085			0.110	0.076
YSM less than 10 (ref.)								
YSM 11-20			-0.147***	0.045			-0.129***	0.038
YSM 21-30			-0.223***	0.060			-0.176***	0.053
YSM more than 30			-0.290***	0.075			-0.265***	0.066
Control for year	YES		YES		YES		YES	
Person-years	177,417		27,199		179,639		27,390	
R^2 within	0.1147		0.1268		0.0390		0.0583	
R^2 between	0.3995		0.3574		0.2009		0.1988	
R^2 overall	0.3307		0.2745		0.1595		0.1593	
sigma_u	1.260		1.268		1.077		1.126	
sigma_e	1.464		1.499		1.218		1.283	
rho	0.426		0.417		0.439		0.435	

Notes: *p<0.10, **p<0.05, ***p<0.01; other controls include year dummies and means of time-varying variables (coefficients not reported). Standard errors are adjusted by clustering per person.

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TABLE 5:
THE EFFECT OF DURATION OF STAY ON SATISFACTION WHEN CONSIDERING DIFFERENT REFERENCE GROUPS
RANDOM EFFECTS MODEL WITH MUNDLAK CORRECTION

	INCOME SATISFACTION									
	Total population		Same educ. level		All immigrants		Same imm. group		Fellow arrivals	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
YSM 0-10 (ref.)										
YSM 11-20	-0.147***	0.045	-0.132***	0.045	-0.146***	0.045	-0.148***	0.045	-0.042	0.045
YSM 21-30	-0.223***	0.060	-0.214***	0.060	-0.221***	0.060	-0.220***	0.060	-0.095	0.060
YSM > 30	-0.290***	0.075	-0.292***	0.075	-0.287***	0.075	-0.293***	0.075	-0.157**	0.076
Person-years	27,199									
	LIFE SATISFACTION									
	Total population		Same educ. level		All immigrants		Same imm. group		Fellow arrivals	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
YSM 0-10 (ref.)										
YSM 11-20	-0.129***	0.038	-0.124***	0.038	-0.128***	0.038	-0.129***	0.038	-0.082**	0.038
YSM 21-30	-0.176***	0.053	-0.175***	0.053	-0.175***	0.053	-0.175***	0.053	-0.120**	0.053
YSM > 30	-0.265***	0.066	-0.270***	0.066	-0.262***	0.066	-0.266***	0.066	-0.206***	0.066
Person-years	27,390									

Notes: *p<0.10, **p<0.05, ***p<0.01; other controls include year dummies and means of time-varying variables, as well the variables reported in Table 3 (coefficients not reported). Standard errors are adjusted by clustering per person.
Source: GSOEP

Appendix

TABLE A1:
THE EFFECT OF DURATION OF STAY ON SATISFACTION WHEN CONSIDERING DIFFERENT REFERENCE GROUPS
RANDOM EFFECTS ORDERED PROBIT WITH MUNDLAK CORRECTION

	INCOME SATISFACTION									
	Total population		Same educ. level		All immigrants		Same imm. group		Fellow arrivals	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
YSM 0-10 (ref.)										
YSM 11-20	-0.098***	0.031	-0.093***	0.032	-0.098***	0.031	-0.099***	0.031	-0.037	0.032
YSM 21-30	-0.132***	0.042	-0.131***	0.045	-0.130***	0.042	-0.130***	0.041	-0.057	0.042
YSM > 30	-0.189***	0.055	-0.193***	0.058	-0.186***	0.054	-0.191***	0.053	-0.112*	0.055
Variance of RE	0.646 (0.024)		0.641 (0.024)		0.646 (0.024)		0.645 (0.024)		0.645 (0.024)	
Person-years	27,199									

	LIFE SATISFACTION									
	Total population		Same educ. level		All immigrants		Same imm. group		Fellow arrivals	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
YSM 0-10 (ref.)										
YSM 11-20	-0.110***	0.035	-0.110***	0.035	-0.109***	0.034	-0.111***	0.034	-0.079**	0.035
YSM 21-30	-0.146***	0.054	-0.154***	0.056	-0.144***	0.053	-0.146***	0.053	-0.109**	0.053
YSM > 30	-0.208***	0.069	-0.222***	0.071	-0.205***	0.068	-0.210***	0.068	-0.170**	0.068
Variance of RE	0.677 (0.029)		0.678 (0.029)		0.678 (0.028)		0.676 (0.029)		0.677 (0.029)	
Person-years	27,390									

Notes: *p<0.10, **p<0.05, ***p<0.01; other controls include year dummies and means of time-varying variables, as well the variables reported in Table 3 (coefficients not reported). Standard errors are adjusted by clustering per person. Source: GSOEP

4. Concluding Remarks

The interest for the plight of immigrants among sociologists can be traced back to 1920s. Especially famous concept from that period is that of immigrant as the "marginal man", first introduced by Park (1928) and further elaborated by Stonequist (1935), who, referring to the American experience, described the idiosyncrasies of living circumstances of immigrants in the following manner: "*Migration has transplanted individuals and cultures to such an extent that nearly every land and every city is something of a melting-pot of races and nationalities. The individual who grows up in such a situation is likely to find himself faced, perhaps unexpectedly, with problems, conflicts, and decisions peculiar to the melting-pot. This is true particularly of those who are expected to do most of the melting, that is, those who belong to a minority group, or to a group who has an inferior status in the land*". In the subsequent decades, the interest in migration research in general and research of economic and life outcome of immigrants in particular were both subjects of a varying degree of interest among social scientists. However, it is apparent that this field of research gained momentum in the last three decades. This should come as no surprise though because, along with technological progress and the increased participation of women in labor market, mass immigration is one of the factors that most changed the face of the modern Europe and the USA.

For a long time, different social sciences studied migration and migrants from their discipline-specific perspectives and using different methods. Claiming that the collaboration between migration researchers coming from different disciplines leaves a lot to be desired, Silvia Pedraza-Bailey noted back in 1989 that "*sometimes one arrives at a party and is much surprised to find out who else is there*". However, this has changed in the

last decades and it would not be exaggerated to state that interdisciplinarity has become a recognizable feature of the contemporary migration research within the realm of social sciences. This circumstance, together with an increased interest in the subject matter, resulted in a sizeable body of research. But even so, we still have not answered all questions, nor are we likely to do so any time in the near future. This is not only due to imperfect data we work with, but also because the nature of migration movements has been changing over time, just like the receiving societies themselves undergo substantial transformations. In other words, the social context in which the research is set changes unceasingly and new research questions emerge.

At the most general level, the results in the empirical chapters of this thesis suggest that the immigrants' objective well-being improves with duration of stay at destination (even if very gradually for some immigrant groups), while, on the other hand, there is a *ceteris paribus* negative relationship between the subjective well-being and duration of stay. To illustrate, it was demonstrated in the first chapter that, within each immigrant group (defined by sending region), the individuals with longer duration of stay in Sweden are less frequently found to be living under the poverty line, but also that longer duration of stay is associated with more favorable outcomes in the context of poverty transitions (although there is some evidence that the positive association for poverty exits is in fact the consequence of the cohort effects). On a similar note, in the second chapter we saw that after the initial drop in the first year after migration, the average occupational attainment of the Senegalese immigrants in Europe gradually improves with longer stay, even though the actual process of the upward occupational mobility can be viewed as somewhat slow. However, the other side of the coin is that, net of other things, there is a statistically significant negative relationship between satisfaction (i.e.

both life satisfaction and income satisfaction) and duration of stay at destination. Moreover, this relationship holds for all major immigrant groups under study. Nevertheless, apart from these general patterns, a number of other findings contribute to a more nuanced understanding of the processes associated with the well-being among immigrants. According to the way they contribute to the previous literature, the main findings can be classified into two main groups: some results in the empirical chapters are the answers to the research questions whose aim was to replicate previously addressed questions in new contexts, while the contribution of other results consists in answering the questions that were previously not dealt with, or at least not in the manner employed in this thesis.

4.1. Reinvestigating Previously Addressed Questions in Novel Contexts

The first chapter also showed that, once poor, the immigrants in Sweden are less likely to leave poverty and that, once out of poverty, they are more likely to re-enter poverty than natives. This result is similar to that in Hansen and Wahlberg (2004), who study the trajectories of poverty in Sweden from 1991 to 2001. In spite of the apparent similarities between the two studies, several notable differences should be pointed out. First, the time period covered in their study was substantially more marked by the economic recession in Sweden in the first half of the 1990s. Second, rather than looking at the relative poverty, Hansen and Wahlberg study the absolute poverty. Third, they do not estimate the immigrant-specific risk of chronic poverty, i.e. the residual immigrant disadvantage with respect to poverty transitions, after controlling for other observables. Finally, in the first chapter, the heterogeneity of the immigrant population in Sweden was taken into account by classifying the immigrants by sending countries

or regions, while Hansen and Wahlberg distinguish between refugee and non-refugee immigrants. Nevertheless, both papers show that the size of immigrant disadvantage in the context of poverty dynamics varies greatly by immigrant group, regardless of the criteria used when defining these groups.

The second chapter focused on well-being among Senegalese immigrants in Europe, as measured by occupational attainment and occupational mobility. With some exceptions, the pattern of the previous results concerning this issue was also largely confirmed in the new context of Sub-Saharan migrants in Southern Europe. Drawing on the large literature about limited transferability of skills to destination countries, it was hypothesized that the occupational trajectories of the Senegalese immigrants follow a U-shaped pattern and that the education received at destination is a particularly important tool leading to better jobs for the immigrants. Both predictions were confirmed in the subsequent analysis. Language skills, as an important element of country-specific skills and the legal status in labor market also exercise a statistically significant effect on the occupational attainment. The statistically significant negative relationship between duration of stay in Europe and the likelihood of experiencing upward or downward occupational mobility can be viewed as an evidence of cumulative inertia (McGinnis, 1968). However, this result differs from the findings for the USA by Redstone Akresh (2006), who found no significant relationship between the two variables.

The third chapter looks at the satisfaction-generating mechanisms among immigrants in Germany and makes appropriate comparisons with natives. Somewhat contrary to the findings of Safi (2010), who used a cross-national dataset and found that the immigrants are on general less satisfied with life than natives, this country-specific study suggests that, all else

equal, some immigrant groups are more satisfied, while others appear to be less satisfied than natives. Also discussed is the issue of "assimilation in satisfaction levels" among immigrants (previously discussed in Burchardt, 2006; Safi, 2010). More precisely, it was tested whether immigrants become more similar to natives with respect to the self-reported satisfaction as the time at destination passes. It turns out that, judging by the coefficients of the multivariate analyses, some immigrant groups indeed become more similar to natives with respect to the self-reported satisfaction. However, this apparent assimilation in satisfaction (which does not hold for all immigrant groups) may actually be an accidental outcome of the negative relationship between satisfaction and duration of stay (which does hold for all immigrant groups).

4.2. Novel Questions

As previously mentioned, in each chapter an attempt was made to also extend the scope of previous related research. The first chapter is, to the best of my knowledge, the first study that compares immigrants and natives in terms of the prevalence rates and conditional transition rates of the events associated with poverty transitions. Labor market is the most important setting for poverty transitions for both natives and immigrants. Employment transitions (i.e. transition to employment and transition to non-employment) are the only events more frequently observed among immigrants who experience poverty transitions (i.e. poverty exits and poverty entries) than among their native counterparts. All other events are more prevalent among natives. However, the conditional transition rates of all the trigger events are more favorable for natives.

In terms of the originality of research, the main contribution of the second chapter consists in the estimation of the occupational cost as a function of

years since migration, while previously the occupational cost has only been measured as the difference in occupational status in the first post-migration year and the last pre-migration year (Raijman and Semyonov, 1995). Fixed effects estimation and random effects with Mundlak correction yield almost identical results: 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. Just after the migration, the occupational cost of migration is slightly higher for women, but this difference is also falling with duration of stay.

Finally, in the third chapter, a *ceteris paribus* negative relationship between satisfaction and duration of stay at destination was established and the question was asked how we can explain this relationship. In other words, the objective was to further scrutinize the link between satisfaction and years since migration. It was hypothesized that income-related expectations (unobserved factor) increase with duration of stay, and that satisfaction of immigrants is at least partly determined by the level of their household income relative to the income of fellow arrivals. Therefore it was predicted that the negative relationship between satisfaction and YSM will weaken or disappear completely once the timing of arrival is considered when defining reference groups. The results show that, after constructing reference groups by timing of arrival, the negative relationship between satisfaction and YSM indeed weakens substantially when examining income satisfaction. On the other hand, the negative association between duration of stay and life satisfaction is persistent, regardless of the way the reference groups are defined. Further work needs to be done to explore this issue and it would be especially compelling to look at the possible role of homesickness and discrimination.

4.3. Generalizability of Results

The datasets used in the empirical chapters stem from different countries and cover specific time periods, so that the question arises as to what extent the results obtained can be considered generalizable . It is important to note that when suggesting that findings are generalizable, I mean that it should be *expected* to obtain *similar* results in other socio-economic contexts too. In any case, given the context-specific circumstances of the studies in the previous chapters, some findings cannot be generalized nor was it possible to predict them based on the theoretical concepts and findings in previous studies of migration research and other social disciplines. To illustrate, the impact of income-related variables on income satisfaction in Germany is more pronounced among natives than among immigrants, but it is difficult to predict what the outcome of a similar research in Spain would be like. However, as mentioned in the introductory chapter, all the hypotheses proposed in the previous chapters are independent of the circumstances specific to destination countries, and I believe that the outcomes of these hypotheses can be considered generalizable, at least as far as the observed immigrant groups are concerned. For instance, it can be considered safe to assume that the U-shaped pattern of occupational trajectories among Senegalese immigrants would also be identified in other Western countries as it is also there that the skills of Senegalese immigrants are not perfectly transferrable (even though the degree of transferability of skills may well vary from one destination to another). Likewise, I would expect to find a *ceteris paribus* negative relationship between income satisfaction and duration of stay not only in Germany, but also in any other destination country in which a positive relationship between earnings and duration of stay can be identified. And, finally, the prediction that the immigrants will be less likely to leave poverty (both before and after controlling for the

observable characteristics) was based on the argument that, on average, they are disadvantaged in all the three principal contexts (namely, labor market, state and family) that determine the socio-economic well-being. However, the empirical evidence in Section 1.4. on immigrant disadvantage in both labor market and welfare state arrangements refers not only to Sweden, but also to other Western destination countries. Therefore, I would expect to find the immigrant disadvantage in the context of poverty exits in other major destination countries as well.

4.4. Future Research

In each chapter there are results that suggest the directions of future research. The finding in the first chapter, that conditional transition rates of all events are more favorable (i.e. higher for poverty exits and lower for poverty entries) for natives, calls for more research into the conditions under which the trigger events take place in poor native and poor immigrant households. It would be especially compelling to shed light on the simultaneity of the trigger events and answer questions such as the following: conditional on experiencing an unfavorable event (e.g. divorce), are natives more likely to simultaneously experience a favorable event (e.g. transition to employment) and thus prevent the fall into poverty? On a similar note, are conditional rates of poverty exits lower for immigrants also because they are more likely to experience an unfavorable event in the same period? However, it is not only the simultaneity, but also the "quality" of transitions that should be examined in more detail. To illustrate, do poor unemployed natives get better jobs when leaving unemployment? A part of immigrant disadvantage in terms of poverty transitions may also be explained by the household formation patterns. Whom do actually poor immigrants marry, as compared to poor

natives? This research can be an extension of previous research on marriage patterns among immigrants (Qian and Lichter, 2001; González-Ferrer, 2006; Dribe and Lundh, 2008) and predominantly American literature on marriage as an anti-poverty strategy (McLaughlin and Lichter, 1997; Sigle-Rushton and McLanahan, 2002).

Another promising research field may be the study of migration outcomes as measured by a variety of socio-economic indicators. In other words, we should more frequently compare the life-courses of migrants and non-migrants and look at how much the immigrants gain or lose, in terms of a variety of socio-economic indicators, by undertaking the act of migration. Apart from contributing to a more nuanced understanding of migration processes, this research is important because we have good reasons to believe that comparisons with non-migrants directly affect the utility function of immigrants. Moreover, we have good reasons to believe that, due to the increasingly transnational nature of contemporary migrations (Portes et al, 1999; Levitt 2001), these comparisons with the non-migrants now matter more than before. An attempt was made in the second chapter to contribute to the scarce body of research by estimating the long-term occupational cost of migration. Given the considerations about different degrees of transferability of skills by education level, I would be very curious to see in the near future a study of occupational cost for different education groups. Also, as mentioned, migration outcomes can and should be measured in terms of other socio-economic indicators (e.g. in terms of poverty, as done by Sabates-Wheeler et al, 2007), but also in terms of subjective indicators. Fixed effects and closely related methods seem to be appropriate tools in these analyses, but it would also be compelling to use different matching estimations, provided the research design allows us to control for a possible bias due to selection into migration.

Future research should also concentrate on the impact of different reference groups on the well-being of immigrants. More precisely, further work needs to be done to identify the reference groups, as well as to assess and, to the extent possible, quantify the importance of each of these groups for the immigrant well-being. Especially interesting would be to establish whether the identification with reference groups is a dynamic process, i.e. whether the degree of comparison with each reference group among immigrants changes with duration of stay at destination. Nonetheless, the procedure of identifying reference groups in the empirical research is very challenging and this also concerns the analyses of general population, not only immigrants. A number of approaches have been used so far by the social scientists in order to address this problem, none of them being flawless. Knight and Song (2009) and Clark and Senik (2010) examine the intensity of income comparisons by reference group using the surveys in which the respondents were asked to explicitly state to whom they compare. Akay et al. (2011) use mean incomes of several potential reference groups. In my view, the least imperfect methodology in assessing the relative importance of the reference groups has been recently proposed by Wolbring et al. (forthcoming). In their study of life satisfaction of the population of Munich, the intensity of the comparison with potential reference groups was not measured by asking the participants to explicitly state whom they compare to, but rather to estimate their relative income with respect to the four potentially relevant reference groups: average citizens, colleagues, friends and relatives. A slightly modified approach (e.g. with non-migrants in the origin being an additional reference group) could relatively simply be implemented in studies of immigrant subjective well-being.

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