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THE LABOUR-MARKET PARTICIPATION OF HIGHLY SKILLED IMMIGRANTS IN SWEDEN: AN OVERVIEW

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THE LABOUR-MARKET PARTICIPATION OF HIGHLY SKILLED IMMIGRANTS IN SWEDEN: AN OVERVIEW

Abstract

This paper provides an overview of the socio-demographic characteristics, labour-market participation and occupational mobility of highly educated immigrants¹ in Sweden. Based on a statistical analysis of register data, we compare their employment rates, salaries and occupational skill level and mobility to those of immigrants with lower education and with natives. Among the questions addressed in this paper are: What is the socio-demographic profile of highly skilled immigrants to Sweden? Where do they come from and how do they enter the country? Are there differences in highly educated immigrants' employment rates by citizenship status, migration entry route and place of birth? How do the salaries of highly educated men and women compare between immigrants and natives? What is the education-to-job match for them? How do occupational mobility patterns compare for highly educated immigrants versus those with lower education? Finally, are there differences in occupational skill level for highly educated migrants by entry route? Our results show that, while highly skilled immigrants perform better than those with a lower educational level, they never catch up with their native counterparts.

Key Words

Highly skilled, immigrants, labour market, integration, overview, Sweden

Bio Notes

Nahikari Irastorza is the current Willy Brandt research fellow at the Malmö Institute for Studies of Migration, Diversity, and Welfare (MIM). Previously, she was a Marie Curie international outgoing fellow at MIM and Simon Fraser University in Canada. Her research interests include international migration and integration, immigrants' participation in the labor market and mixed marriages. Dr. Irastorza earned her PhD in Humanities at the University of

¹ This paper focuses on the employment of the foreign-born living in Sweden, that is, the employment of "immigrants" to Sweden. Furthermore, it does not address any other cross-border geographical movements of the population of study once they enter Sweden. Therefore, the term "immigrants" and not "migrants" will be used to describe people who, being born out of Sweden, are registered with the Swedish tax authorities as residents of Sweden, regardless

Deusto in Spain, where her thesis examined the labor market performance and self-employment of immigrants to Spain.

Pieter Bevelander is Professor in IMER at MIM, Malmö Institute of Migration, Diversity and Welfare and a senior lecturer at the School of IMER, Malmö University, Sweden. His main research field is international migration and different aspects of immigrant integration such as their participation in the labour market, effects of labour market policy measures directed towards them, immigrants' ascension to citizenship, and the effect of citizenship and social capital on immigrants' participation in the labour market in Sweden and Canada. He has a doctorate in economic history and wrote his thesis (2000) on the employment integration of immigrants in Sweden in the period 1970–1995.

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Introduction

In a globalised world with an increasing division of labour, the competition for highly skilled individuals – regardless of their origin – is growing, as is the value of such individuals for national economies. Yet the majority of studies analysing the economic integration of immigrants shows that those who are highly skilled also have substantial hurdles to overcome: their employment rates and salaries are lower and they face a higher education-to-occupation mismatch compared to highly skilled natives.

While the literature on immigrants' labour-market integration in Sweden has focused on explanations of the differences in employment and income by country of origin or entry route to the country, there is a paucity of studies on the employment patterns of highly skilled immigrants to Sweden. The majority of those that exist are policy papers that analyse the effect of changes in Swedish legislation concerning highly skilled immigration (see, for example, Cerna 2009; Emilsson 2014a; Ostling 2013). As an exception, Osanami Törngren and Holbrow (2016) complement their comparative policy analysis of Sweden and Japan with a qualitative study that analyses the employment experiences of highly skilled labour migrants in the two countries. They conclude that there is a gap in each country's intention to attract highly skilled migrants which they explain by self-reported difficulties experienced by the interviewees in both Sweden and Japan, such as the slow or stagnant career mobility, language barriers, prejudice and difficulties in social integration.

This paper fills this gap in the literature by providing an overview of highly skilled immigrants' labour-market integration in Sweden. We use register data to describe the labour-market participation – by entry route, place of birth and citizenship – of highly educated men and women. We also look at the quality of their employment, as measured by income and occupational skill level. Immigrants with lower education and natives classified by educational level are included in the analysis as comparison groups.

Highly skilled immigrants can be defined in different ways. Based on Iredale's (2001) work, we describe them as those with university education. While Iredale's definition also includes immigrants with extensive professional experience, due to data limitation this paper focuses on highly educated immigrants whose professional experience before migration is unknown. Therefore, in this paper, the concepts of 'highly skilled' and 'highly educated' are used interchangeably.

The rest of this paper is organised as follows: next we review the literature on immigrants' participation in host labour markets. In the third section we present the main socio-demographic characteristics of highly educated immigrants to Sweden. This is followed by an overview of the employment rates of the highly educated by citizenship, entry route, major origin country and year of migration. In the fourth section we show the quality of employment, as explained by relative income and occupational skill level, for highly educated immigrants in combination with other key variables such as entry route and year of migration. The last section concludes.

Previous studies

Barry Chiswick's (1978) seminal paper has been both the starting signal and the trigger for numerous studies on the labour-market integration of immigrants in host countries. Over the following decades research on this topic has grown massively. Increased migration worldwide, public and political discourse, and better and more-available statistical information are key to this increase in research. The majority of the studies on immigrant economic integration are still conducted in line with the human capital model (Becker 1972) but over the most recent decades, social capital propositions, as well as institutional factors like admission status and discrimination, are included in explanatory models of immigrant labour-market integration (see, among others, Behtoui 2007; Bevelander 2000, 2011; Carlsson and Rooth 2007).

In standard labour-market supply studies it is hypothesised that the probability of employment, higher earnings and job-match is determined by the level of human capital (Becker 1975). This includes formal education, labour-market experience and skills acquired at work. However, when it comes to migration, education and skills may not be perfectly transferable between countries. These skills could be labour-market information, destination-language proficiency and occupational licences, certifications or credentials, as well as more narrowly defined task-specific skills (Bevelander 2000; Chiswick *et al.* 2005). Also those with the least transferable skills among potential migrants are not likely to become economic migrants.

Non-economic migrants like humanitarian² and family-reunion migrants base their migration decision, in part, on a different set of intentions and are therefore less-positively selected for labour-market inclusion (Borjas 1993;

² Note that the terms "humanitarian migrants", "asylum migrants" and refugees will be used interchangeably.

Chiswick 2000). Moreover, Aydemir (2011) argues that there are many unobservable factors not measured in the data that make up the quality and relevance of immigrants' human capital and may result in skill transferability problems or a mismatch between demand and supply. This should entail a higher labour-market integration of highly skilled immigrants, as well as differences in integration between admission categories. Besides, Bevelander (2011) argues that family migrants often have access to kinship networks in the host country which can facilitate their access to crucial information regarding the labour market and may initiate investments in human capital prior to arrival that are valued in the host-country labour market. These types of networks may also help them to overcome barriers in the labour market through job contacts or a better knowledge of processes leading to the recognition of credentials. Finally, in Sweden, humanitarian and family migrants have access to different services. While all humanitarian migrants have the right to a 24-month introduction programme, among family reunion migrants only the families of humanitarian migrants have the same right. This programme includes language training, civic orientation and labour-market services and is administered by the Public Employment Service (Emilsson 2014b). However, most services are also available to family and labour migrants – for example, free language training.

While the effect of formal education on immigrants' employment, earnings and job-match has been positive, especially if some of this education is obtained in Sweden (Bevelander 2000; Dahlstedt and Bevelander 2010), differences in formal education do not completely explain the employment, earnings and job-match differential between native and foreign-born workers (Eriksson 2010). Bevelander (2011, 2016) suggests that the migration route of the immigrant population is an important factor that can explain the native-immigrant employment gap in Sweden.

Other studies indicate that both discriminatory behaviour in the labour market and social networks are other important factors explaining the labour-market integration of immigrants in Sweden (see Arai and Skogman Thoursie 2009; Lemaître 2007; Rooth 2002). According to Lemaître (2007), two-thirds of jobs in the Swedish labour market are filled through informal recruitment methods. He concludes that, even in the absence of discrimination, this kind of recruitment channel favours individuals with a network of local connections, which immigrants could develop over time but perhaps not to the same extent as the native-born. Behtoui (2008) confirms that immigrants are less likely than natives to be able to find jobs through informal methods; furthermore, he found that jobs obtained through informal methods do not pay as well for immigrants

as they do for natives. His results are applicable to immigrants with different educational levels, including the highly skilled.

Highly skilled immigrants to Sweden: who are they?

Register data (STATIV) from 2011 provided by Statistics Sweden were used to provide an overview of highly skilled immigrants to Sweden. STATIV is a longitudinal database for integration studies that contains information on all individuals registered in Sweden and is updated every year. Our sample includes 4,259,707 natives and foreign-born individuals who have been living in Sweden for more than five years³ and are between 25 and 60 years old. In order to make the sample of immigrants as comparable as possible to that of natives in terms of language skills, other country-specific human capital and social networks, we decided to exclude immigrants who, in 2011, had been living in Sweden for less than five years (see Bratsberg *et al.* 2014). The foreign-born represent 19 per cent of the sample and the presence of highly educated individuals is the same among the foreign-born and among natives: 40 per cent.⁴

The main characteristics of the highly educated immigrants included in our sample are as follows: 55 per cent of them are women and the mean age is 42. These numbers are similar to those of highly educated natives but not to immigrants with lower education: the presence of women among the later is not as high as among highly skilled immigrants. About 74 per cent of them are Swedish citizens.

Immigrants have only been classified by entry route or type of migration since 1997. Therefore, our data have a large number of missing values for this variable. Refugees represent 52 per cent of classified immigrants included in our sample, family reunion migrants are the second-largest group with a representation of 41 per cent and labour migrants are a minority group with about 7 per cent of working-age classified immigrants who have been in Sweden for at least five years. Compared to immigrants with lower education,

³ An exception to this rule was made in Tables 3 and 5 and Figures 3 and 5, where we included all immigrants in order to follow their employment rates and upward occupational mobility over time.

⁴ A report from Statistics Sweden shows that missclassifications of education are much more frequent among foreign-born individuals than among those born in Sweden (SCB 2006). Unfortunately, we do not have the means to assess the veracity of foreign credentials. However, we trust in the honesty of the majority of the people and therefore, we do not expect the real numbers to be significantly different.

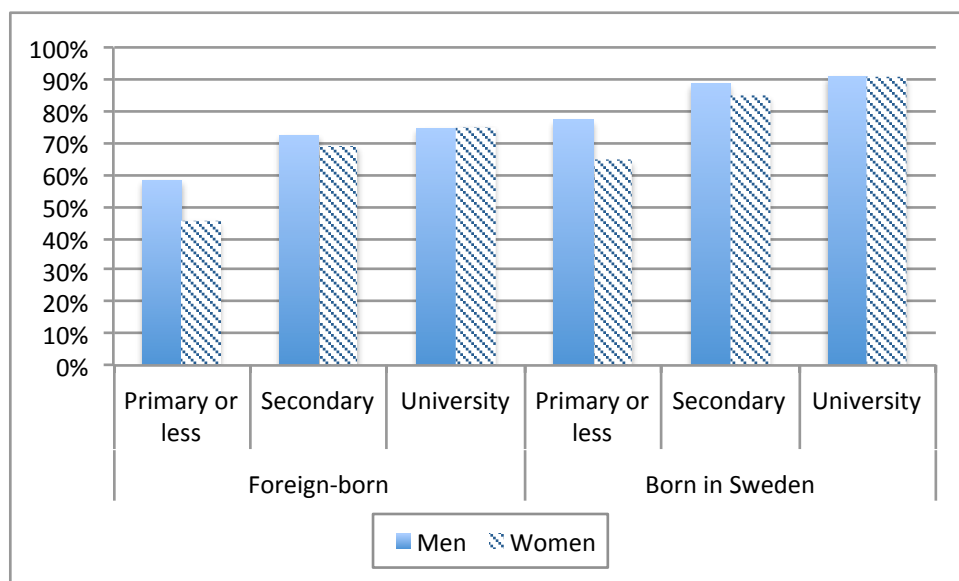
labour migrants are over-represented, whereas refugees are slightly under-represented among highly skilled immigrants.

By place of birth, highly educated immigrants from five world regions – the Middle East, EU countries (excluding Denmark and Finland), Nordic countries, the rest of Europe and Asia – represent over 80 per cent of all highly skilled immigrants living in Sweden. Immigrants from EU countries have a higher representation among this group than among immigrants with lower education, while the opposite is true for those coming from the rest of Europe.

Highly educated immigrants' access to employment: who gets in?

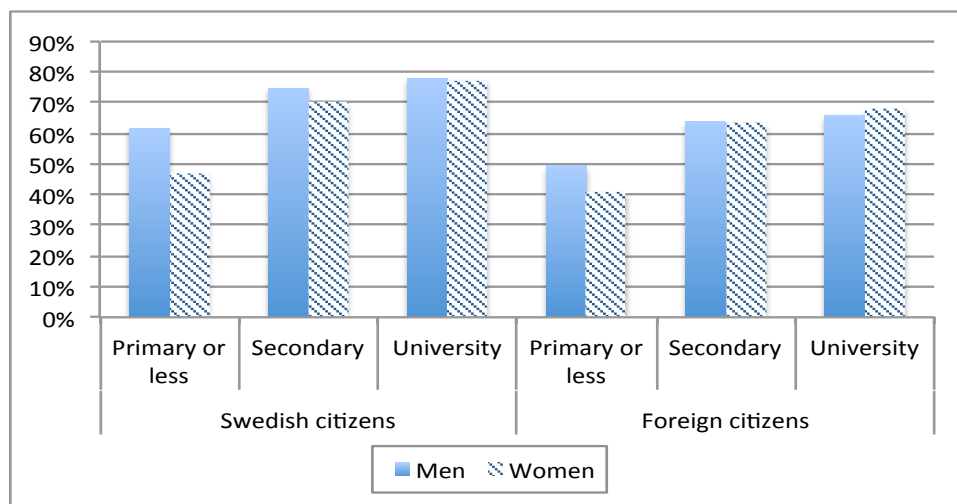
Figure 1 shows the employment rates of immigrants and natives by level of education and in line with the theoretical proposition of human-capital theory: the higher the educational level, the greater the likelihood of employment for both immigrants and natives. However, this proposition only applies if we look at these two groups separately: not only is the relative number of highly educated employed natives higher than that of their immigrant counterparts but the employment rate is also slightly higher among native men with the lowest level of education than among highly educated immigrants. A similar gender gap is visible in Figure 1 for immigrants and natives, where the gap decreases (and almost disappears) with higher education.

Figure 1. Employment rates of immigrants and natives by educational level



According to the literature (see, for example, Helgertz *et al.* 2014), naturalised immigrants have better labour-market outcomes than those with foreign citizenship. Our descriptive statistics on the employment rates of immigrants by education and citizenship, as reported in Figure 2, confirm these findings for immigrants with all three educational levels.⁵ The gap is slightly wider among men, while the gender gap is the greatest for both citizen and non-citizen immigrants with primary education.

Figure 2. Employment rates of immigrants by educational level and citizenship



Studies on immigrants' labour-market integration also show that labour migrants have better employment opportunities and outcomes than refugees and family migrants (Bevelander 2011). Table 1 shows and confirms this pattern. Whereas employment rates are the highest among the highly educated for the three immigrant categories, the employment gap among them is similar for immigrants with secondary and university studies, and higher for immigrants with lower education. The gender gap decreases with higher education for the three groups analyzed.

⁵ Since our data only include individuals who, in 2011, had been registered as residents of Sweden for at least five years, they would all have had the opportunity to become Swedish citizens if they had wanted to do so.

Table 1. Employment rates of immigrants by educational level and entry route

	Labour migrants (%)	Family migrants (%)	Refugees (%)
Primary or less	65.3	51.6	48.1
Secondary	76.6	69.7	69.8
University	82.1	74.7	73.9
Men			
Primary or less	69.0	60.2	53.2
Secondary	78.7	72.4	70.7
University	83.1	75.5	73.1
Women			
Primary or less	55.7	45.9	41.8
Secondary	71.7	67.7	68.5
University	80.4	74.1	75.0

Next we present the employment rates of highly educated immigrants classified by world region of origin. Table 2 shows that immigrants from Nordic countries have the highest employment for immigrants with any level of education, which is not surprising considering that they have been in Sweden for longer, they speak similar languages (with the exception of non-Swedish-speaking Finns) and they are phenotypically and culturally more similar to Swedes than immigrants from other regions. The most disadvantaged groups are also the same, regardless of their level of education – namely immigrants from Africa and the Middle East, most of whom enter Sweden as asylum-seekers.

Note that the challenges associated with physical appearance and perceived cultural distance - like, for example, discrimination - are on the demand side of the labour market, not on the supply side. Previous studies found that international adoptees with dissimilar looks to natives are less likely to be

employed in Sweden and that the employment gap is smaller for international adoptees with similar appearance to natives (Rooth 2002). According to this study, these differences can not be attributed to a difference in characteristics observed by the researcher based on register data. While making robust conclusions on the existence of discriminatory practices based on these factors is, indeed, difficult when using administrative colour-blind data, the results presented in Table 2 also point in that direction for immigrants – including highly educated immigrants - living and working in Sweden.

Time of residency in the host country constitutes another key factor in the labour-market integration of immigrants. Most immigrants not only need to learn the language of the host country but also lack the other host country-specific human and social capital that would facilitate their access to employment.

Table 3 reports the employment rates of immigrants by educational level and year of migration – starting from 1997 – in 2011. We decided to include those who had arrived five years prior to the year of analysis because we were able to classify them by year of arrival and hence they will not blur the overall picture. This period (2007–2011) is highlighted in Table 3. As shown in the table, nearly half of the immigrants with secondary and university studies who arrived in 2007 were employed five years later, whereas this number was even lower (about 30 per cent) for those with primary education.

Table 2. Employment rates of immigrants by educational level and place of birth

	University (%)	Secondary (%)	Primary (%)
Nordic (except Sweden)	82.0	75.6	60.7
EU (except Nordic countries)	79.4	72.8	54.2
Europe (except Nordic and EU)	77.0	73.1	52.1
Africa	67.9	66.0	43.7
North America	75.6	71.6	56.6
South America	77.2	74.9	58.5
Asia	71.0	72.2	58.6
Middle East	67.8	61.4	42.9
Men			
Nordic (except Sweden)	77.2	74.7	63.9
EU (except Nordic countries)	80.4	75.7	61.3
Europe (except Nordic and EU)	78.1	75.7	61.0
Africa	67.4	66.0	48.4
North America	77.7	73.0	60.0
South America	77.9	76.6	64.6
Asia	69.7	74.9	62.7
Middle East	69.8	64.8	52.4
Women			
Nordic (except Sweden)	84.8	76.4	57.0
EU (except Nordic countries)	78.6	70.1	45.8
Europe (except Nordic and EU)	76.1	70.1	44.5
Africa	68.6	66.1	39.7

North America	73.4	69.8	51.9
South America	76.7	73.1	52.1
Asia	71.7	70.5	56.7
Middle East	65.6	57.0	30.8

We also highlighted the period 2010–2011 as the time when most asylum immigrants and their reunited spouses would still be participating in introduction programmes in order to learn the language and prepare themselves for entering the Swedish job market. The employment rate of immigrants who arrived in 2010 was below 34 per cent for the three groups compared in the table and, again, especially low – at 17 per cent – for those with primary education. The relative number of employed women among newly arrived immigrants is lower than that of men, and the gap is higher than 10 percentage points for all three levels of education. Newly arrived men with secondary schooling show higher employment rates than do the university graduates. One possible explanation for this trend could be that the highly educated immigrants have higher expectations than those with secondary education and, therefore, spend more time investing in further training instead of accepting the first job opportunity they could get. Since highly skilled jobs often require a higher proficiency in the local language, and additional training in country-specific human capital in order to get professional qualifications and affiliations, it is also reasonable to expect that highly skilled immigrants will invest more time in preparing themselves in order to get employment that matches their education. The employment rates of highly educated newly arrived women, on the contrary, are higher than those with secondary schooling. However, the employment gap is lower than 3 percentage points.

However, if we focus our attention on immigrants with more than five years of residency in Sweden, the overall picture looks different. The employment rates of immigrants with secondary and university education become almost equal after eight years of residency and only become higher among the highly educated after nine years of stay in the country. Immigrants who arrived in Sweden in 1997 present employment rates lower than 76 per cent (52 per cent for those with primary education). Whereas the initial gap between men and women almost disappears over time for the highly educated foreign-born and for those with secondary studies, it remains higher than ten percentage points for immigrants with lower education and 14 years of residency in Sweden (i.e. 57.60% and 45.90% for men and women, respectively

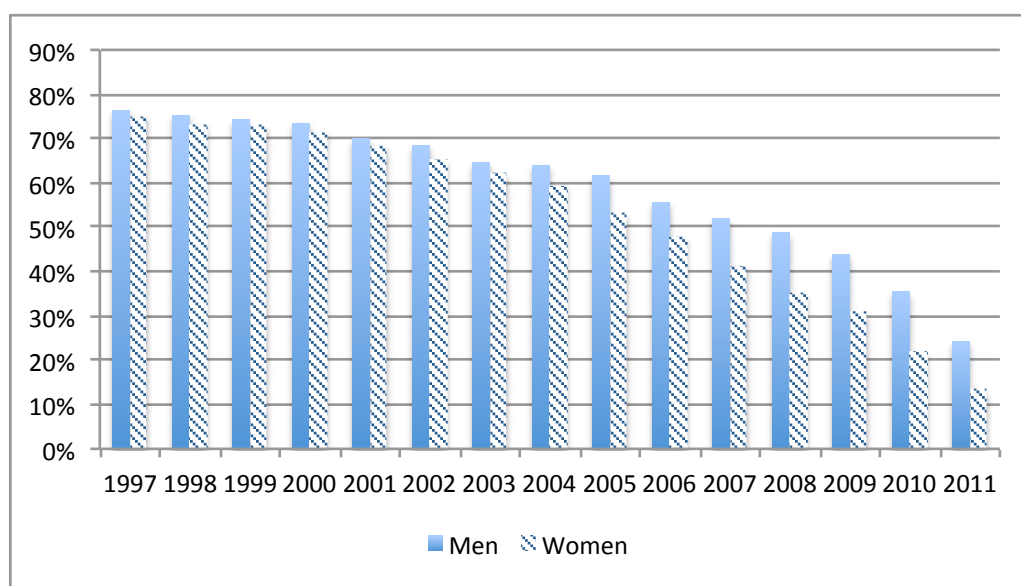
Table 3. Employment rates in 2011 of immigrants by educational level and year of migration (%)

	1997	1998	1999	2000	2001	2002	2003	2004
University education								
All	75.7	74.1	73.5	72.3	69.1	66.7	63.3	61.5
Men	76.4	75.3	74.3	73.4	70.0	68.4	64.6	64.0
Women	75.1	73.2	73.0	71.5	68.4	65.3	62.2	59.6
Secondary education								
All	71.2	68.1	68.3	66.7	63.5	63.0	60.4	61.6
Men	72.9	70.9	70.7	67.8	68.3	68.0	66.9	69.4
Women	69.6	65.7	66.4	65.7	59.1	58.3	54.7	54.1
Primary education								
All	51.5	52.0	50.5	48.1	47.5	46.2	44.4	45.1
Men	57.6	58.9	57.1	57.4	55.9	55.8	54.5	56.0
Women	45.9	45.8	44.6	39.8	40.0	38.3	38.0	37.7

	2005	2006	2007	2008	2009	2010	2011
University education							
All	57.2	51.8	46.7	41.7	37.4	29.0	18.7
Men	61.6	55.5	51.9	48.7	43.9	35.4	24.2
Women	53.0	47.9	41.4	35.0	30.8	22.2	13.5
Secondary education							
All	58.0	54.1	49.4	45.4	42.2	33.8	12.7
Men	65.9	62.2	58.9	55.5	51.5	44.2	17.7
Women	49.2	43.9	37.7	33.6	29.7	19.9	5.9
Primary education							
All	41.1	35.9	30.8	27.4	25.3	17.2	5.0
Men	50.6	44.4	39.4	38.8	34.9	26.2	8.6

In Figure 3 we show employment rates by year of migration and gender only for highly educated immigrants. The positive curvilinear correlation between number of years in Sweden and employment, as well as the equalising effect of time in the initial employment gap between men over women mentioned above, become clearer in the graph which, furthermore, shows that getting into the Swedish labour market as a newly arrived immigrant is also challenging for the highly educated.

Figure 3. Employment rates in 2011 of highly educated immigrants by year of migration



In sum, the employment rates of highly educated immigrants to Sweden are higher than those of immigrants with lower education but lower than those for natives. This is still the case for highly educated immigrants who, in 2011, had been living in Sweden for over ten years. The number of employed individuals is greater among highly educated Swedish citizens and labour migrants than among non-citizens and other immigrant categories. The gender gap in employment decreases with higher education and even reverses for university graduates coming from other Nordic countries, among whom more women than men are employed in relative terms. Female immigrants from Nordic countries and male immigrants from non-Nordic EU and other European countries show the highest employment rates, whereas African and Middle Eastern immigrants, regardless of gender, have the lowest.

Highly skilled immigrants in the labour market: how do they do?

In this section we present data on the quality of employment of highly educated immigrants as measured by income, occupational skill level and education-to-job match.⁶ We also provided the same data for immigrants with lower education and for natives.

Figure 4 gives the annual job income of employed immigrants with at least five years of residency in Sweden by educational level and gender.⁷

As expected, the earnings of the foreign-born, regardless of education or gender, were lower than those of natives. The income gap between highly educated immigrants and natives is similar to the gap observed among individuals with primary education but higher than those with secondary education.

Interestingly, the income gap between highly educated men and women is lower among the foreign-born than among the native population. Despite the fact that our data do not register the number of hours worked, we explain this difference – based on our own observation and understanding of the Swedish labour market – by the fact that many native women only work part-time while they have children of young age. This is probably not that common among the foreign-born, who may have a greater need for women to contribute to a lower household income as compared to highly educated natives. The same pattern is observable among individuals with lower education. Perhaps, also, for the same reason as that given above, the difference in yearly income between the foreign-born versus natives is higher among men than among women.

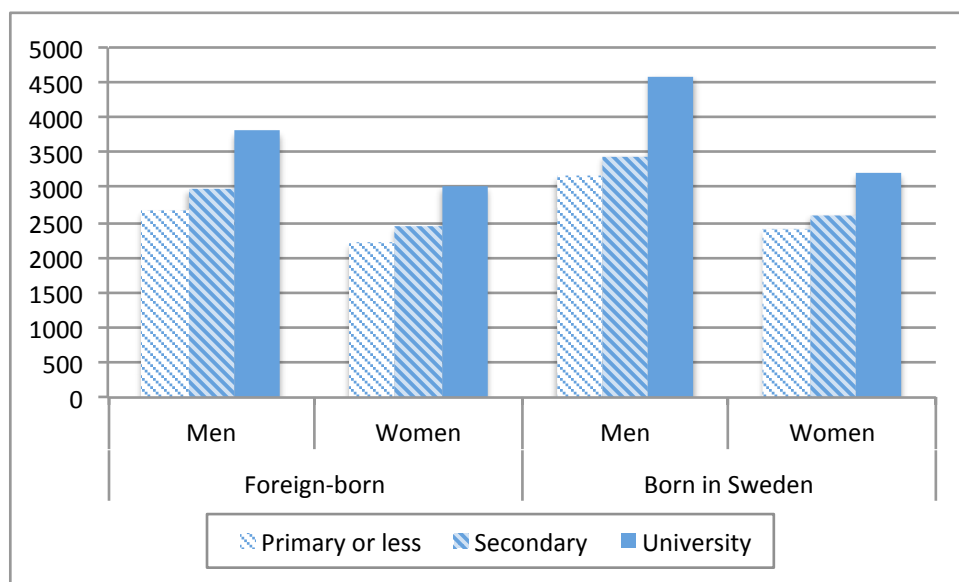
We expect that most foreign-born and native employed men work full-time in Sweden and therefore, in the absence of data describing the annual number of hours worked, the comparison between these two groups is more reliable. If we focus our attention on these two groups, Figure 4 suggests that the returns to education – that is, the labour market outcomes obtained from investing in education – are higher for natives than for immigrants. In order to draw further conclusions about the possible reasons behind this gap, we need to look at

⁶ Based on the International Standard Classification of Occupations (ISCO) we grouped professions in three groups: those for which Skill Level 1 is required were recoded as low-skilled occupations; professions requiring Skill Levels 2 and 3 were classified as middle-skilled, whereas jobs associated with Skill Level 4 – including the first group of managers, etc. as defined by ISCO – were defined as highly skilled. For more information on ISCO, see: <http://www.ilo.org/public/english/bureau/stat/isco/press1.htm>

⁷ Note that, in order to make the samples more comparable and exclude individuals who did not have steady employment, we only selected individuals whose yearly income before taxes was equal to or higher than the so called (*'prisbasbelopp'*) for 2011, which was set at 42,800 SEK (see Bratsberg et al. 2006). This figure is a yearly approximation amount calculated by Statistics Sweden for calculating both social benefits and admissions.

internal differences in income among the foreign-born by year of migration (Figure 5) and the occupational level of highly educated immigrants versus that of natives (Figure 6).

Figure 4. Job income in 2011 of immigrants by educational level (in hundreds of SEK)



An overview of immigrants' earnings by educational level and year of migration is presented in Table 4 and Figure 5. The data presented in Table 4 concerning highly educated immigrants who arrived before 1997 confirm that there is an income gap between natives and the foreign-born who are long-term residents of Sweden. The same pattern is observed for immigrants with lower education. Although the gap is minor in the case of women, the potential difference in the number of hours worked may be the reason behind the similar income levels between foreign-born and native women.

Furthermore, the data also show that the income gap between male immigrants with primary education versus those with university education who moved to Sweden before 1997 is lower than it is for native men. In fact, the income gap by level of education is not higher for long-term foreign-born residents of Sweden, which could be interpreted as a sign that the foreign-born have lower returns on education.

For the same reasons as in Table 3, where we reported employment rates for the foreign-born by year of migration to Sweden, in Table 4 we have highlighted two periods (2010–2011 and 2007–2011) representing the job income of immigrants arrived in Sweden up to five years prior of the year of

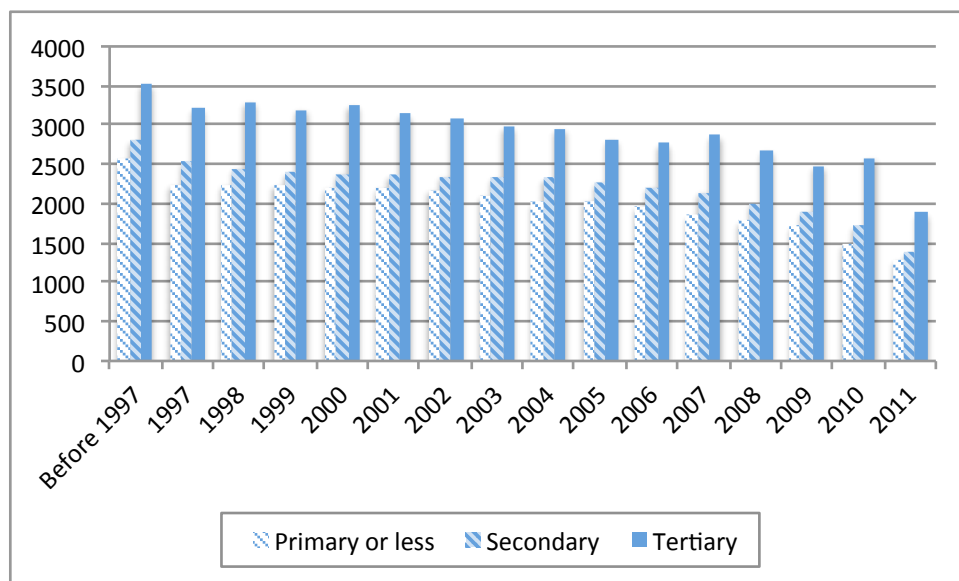
study and those who may be participating in introduction programmes in the first two years after arrival. Interestingly, the income gap between newly arrived highly educated immigrants who moved to Sweden in 2007 and those who arrived in 2011 is higher than the income gap between highly educated immigrants who moved in 2006 and those who did so before 1997, both for men and women. This is also the case for immigrants with lower education, with the exception of women with secondary schooling.

Table 4. Job income in 2011 of immigrants by educational level and year of migration (in hundreds of SEK)

	Before 1997	1997	1998	1999	2000	2001	2002
Primary or less	2574	2247	2244	2239	2204	2206	2181
Secondary	2799	2525	2454	2392	2387	2357	2352
University	3518	3216	3295	3202	3255	3135	3080
Men							
Primary or less	2790	2462	2418	2410	2384	2399	2401
Secondary	3056	2816	2729	2728	2675	2641	2623
University	3933	3691	3957	3778	3801	3634	3656
Women							
Primary or less	2314	2003	2041	2036	1967	1957	1909
Secondary	2521	2234	2199	2101	2106	2044	2045
University	3197	2818	2802	2768	2808	2718	2608

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Primary or less	2109	2017	2047	1975	1848	1779	1716	1492	1290
Secondary	2338	2326	2272	2213	2148	2013	1902	1716	1375
University	2983	2957	2818	2764	2867	2681	2486	2587	1885
Men									
Primary or less	2325	2269	2193	2128	2006	1931	1822	1574	1336
Secondary	2657	2618	2525	2431	2361	2190	2033	1800	1392
University	3539	3471	3206	3100	3179	3012	2687	2840	2153
Women									
Primary or less	1907	1750	1764	1716	1607	1547	1485	1260	1004
Secondary	1979	1954	1877	1806	1718	1655	1583	1458	1300
University	2539	2506	2374	2343	2442	2230	2182	2156	1428

Figure 5. Job income in 2011 of working immigrants by year of migration (in hundreds of SEK)



The quality of employment can also be described by looking at how a person’s education matches the skill requirements of his or her job (see Dahlstedt 2011). We do this for immigrant and native men and women in Table 5. The overall results for immigrants and natives are also represented in Figure 6.

The most visible graphical differences between the two groups are found at the two extremes of Figure 6 and can be summarised as follows: the proportion of highly educated individuals working in highly skilled jobs is greater among natives, whereas the number of individuals with primary education working in low skilled occupations is higher among immigrants. In general, immigrants’ representation in lower-skilled jobs is higher for all three educational groups, with the opposite being true for natives – i.e. the latter are over-represented in highly skilled jobs in comparison to immigrants.

Furthermore, the relative number of natives with primary education working in highly skilled jobs is higher than the number of immigrants with secondary education working at the same occupational level. Likewise, in relative terms, there are more immigrants with secondary education than there are natives with basic education working in elementary occupations.

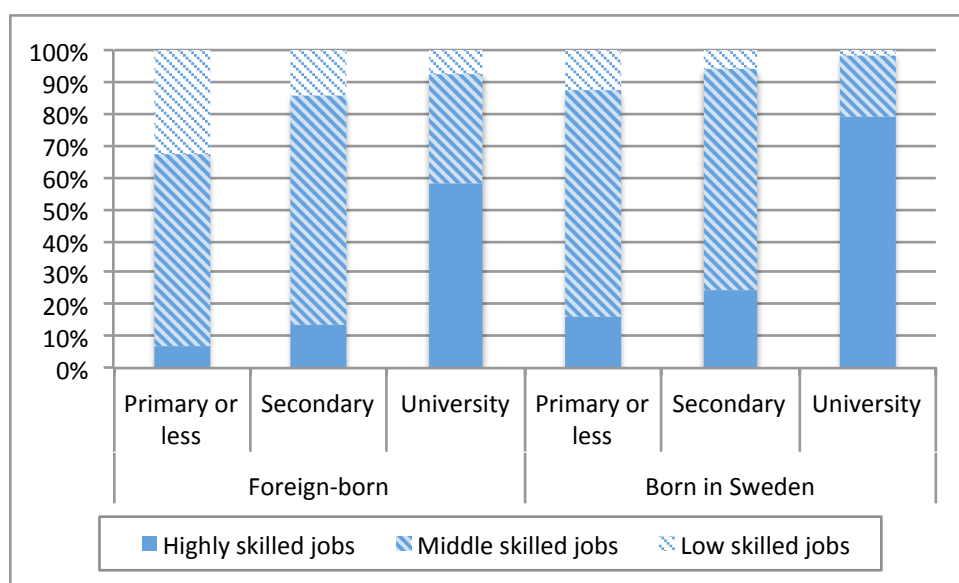
The main differences between immigrant men and women are as follows: there are more highly educated women than men working in highly skilled jobs, and more women than men with lower education working in elementary employment, with this difference being greater than the former

Table 4. Job income in 2011 of immigrants by educational level and year of migration
(in hundreds of SEK)

	Before 1997	1997	1998	1999	2000	2001	2002
Primary or less	2574	2247	2244	2239	2204	2206	2181
Secondary	2799	2525	2454	2392	2387	2357	2352
University	3518	3216	3295	3202	3255	3135	3080
Men							
Primary or less	2790	2462	2418	2410	2384	2399	2401
Secondary	3056	2816	2729	2728	2675	2641	2623
University	3933	3691	3957	3778	3801	3634	3656
Women							
Primary or less	2314	2003	2041	2036	1967	1957	1909
Secondary	2521	2234	2199	2101	2106	2044	2045
University	3197	2818	2802	2768	2808	2718	2608

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Primary or less	2109	2017	2047	1975	1848	1779	1716	1492	1290
Secondary	2338	2326	2272	2213	2148	2013	1902	1716	1375
University	2983	2957	2818	2764	2867	2681	2486	2587	1885
Men									
Primary or less	2325	2269	2193	2128	2006	1931	1822	1574	1336
Secondary	2657	2618	2525	2431	2361	2190	2033	1800	1392
University	3539	3471	3206	3100	3179	3012	2687	2840	2153
Women									
Primary or less	1907	1750	1764	1716	1607	1547	1485	1260	1004
Secondary	1979	1954	1877	1806	1718	1655	1583	1458	1300
University	2539	2506	2374	2343	2442	2230	2182	2156	1428

Figure 6. Education-to-job match of working immigrants and natives

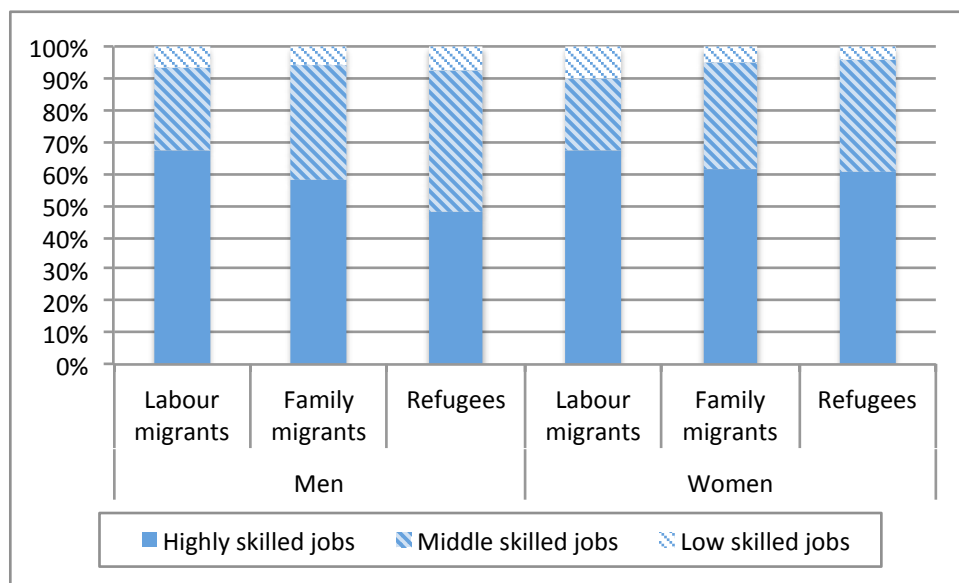


Based on the results reported thus far in this section, we have stated that the return on education may be less for immigrants living and working in Sweden than it is for natives. The usual arguments found in the literature to explain such disparity could also be applied to this study, namely differences in language skills and other country-specific human and social capital between immigrants and natives, and discrimination towards the foreign-born (see, for example, Bevelander 2000; Behtoui 2007; Carlsson and Rooth 2007).

Finally, the reasons for migration, the route of entry into the host country and the consequences of all these also influence the employment opportunities for immigrants (Bevelander and Pendakur 2014). We conclude our analysis on the quality of employment of highly educated immigrants by looking at the skill level of their jobs by entry route, i.e. for labour migrants, family migrants and refugees.

As expected, the proportion of people working in highly skilled jobs is greater among labour migrants than among family and asylum migrants, while there are more family and asylum migrants working in middle-skilled jobs than there are labour migrants. Figure 7 shows the data for men and women. It is clear from the graph that the percentage of highly skilled family migrants and refugees working in highly skilled occupations is greater among women than among men. There are also slightly fewer female family migrants and refugees but more labour migrants employed in elementary occupations, compared to men.

Figure 7. Employment of highly educated migrants by entry route and occupational skill level



Conclusions

This paper describes the labour-market integration of male and female immigrants in Sweden in 2011. We focus on highly skilled immigrants and compare their labour-market integration to that of highly educated natives and immigrants with lower education. Labour-market integration is measured by three indicators: employment, earnings and education-to-occupation match.

Our results show that highly skilled immigrants have greater employment levels, relative earnings and education-to-job match compared to lesser-educated immigrants. However, these outcomes are significantly lower than those for highly educated natives. In fact, native men with low education have higher employment levels than highly educated immigrants. Furthermore, while years of residency in Sweden improve highly educated immigrants' employment rates and earnings, they never catch up with those of natives. The time elapsed since migration seems to have a more positive effect on highly educated immigrant women than men, as the initial gap in employment observed between newly arrived men and women is almost non-existent between long-term resident men and women. As expected, highly educated, naturalised immigrants, labour migrants and those coming from Nordic and other EU countries perform better in the Swedish job market than their counterparts.

While most of our findings are in line with previous studies on immigrants' labour-market integration, as presented in the literature section, perhaps the most striking results are that (i) immigrants never catch up with natives and,

furthermore, (ii) the employment rates of highly skilled immigrants who have been living in Sweden for ten years or more are lower than those of less-educated natives. These findings do not support economic assimilation theory, according to which immigrants' earnings tend to converge with those of natives as they accumulate country-specific human capital over time (see, for example, Chiswick 1978).

The main limitation of this exploratory study is the cross-sectional use of register data. As pointed out by Borjas (1985), cross-sectional data are not as suitable as longitudinal data in the study of immigrants' labour-market integration over time. Instead, he suggests selecting different cohorts - that is, immigrants arrived in different time periods - and following them over time. This strategy allows the comparison of the labour market integration of immigrant cohorts with potentially different characteristics in terms of education, entry route and countries of origin. Furthermore, it also facilitates the assessment of the effect of the economic cycle on the labour market outcomes of different cohorts.

However, the purpose of this paper was to give an overview – which was missing from the literature – of the labour-market situation of highly skilled immigrants in Sweden, rather than conducting more complex analyses of immigrant integration over time. Longitudinal cohort and qualitative studies are needed to get a deeper understanding and explanation of the role of social capital and discrimination in the Swedish labour market for highly educated immigrants.

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