An Analysis of Immigrants' Participation in Adult Education in Sweden

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Abstract

The purpose of this paper is to analyze to what extent different groups of immigrants in Sweden take part in two adult education measures, the Adult Education Initiative (AEI) and Labor Market Training (LMT). A multinomial logit model is estimated using register data. The results show that the probability to participate in the AEI, instead of being openly unemployed, in general is lower among immigrants than among natives with two Swedish born parents. However, differences in the probability to participate in the AEI exist between groups with different region of heritage. Some evidence is also found indicating that the probability to participate in the AEI is higher for more recent immigrant cohorts than for earlier. Moreover, for some region of heritage groups, the results indicate that naturalized immigrants have a higher probability to participate in the AEI than non-naturalized immigrants. The probability to participate in LMT, instead of being openly unemployed, is in general higher among immigrants than among natives with two Swedish born parents. Crudely, one might say that the probability to participate tends to be higher in region of heritage groups with a weaker position in the labor market. In line with what was shown for the AEI, there is also a weak tendency that more recently arrived immigrants have a higher probability to participate than earlier immigrants. No large differences concerning the probability to participate in LMT, instead of being openly unemployed, are found between naturalized immigrants and non-naturalized immigrants.

Keywords: Immigration; Adult Education; Discrete Regression and Qualitative Choice Models

JEL Classification: J 15; I 21; J 18; C 35

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1. Introduction

Sweden has a long tradition of devoting large resources to educational and labor market programs. Among other things, these programs aim at avoiding permanent exclusion from and segregation in the labor market. In this paper, the extent of participation among different subgroups of immigrants[1] in two adult education measures; namely, labor market training (LMT) and the Adult Education Initiative (AEI), is analyzed.[2]

A popular view is that the relatively weak labor market performance of immigrants can be improved by increasing the group's educational level.[3] This view has been criticized by for example Arai *et al*. (2000), but is referred to in the *Report of the Governments Commission* (SOU) 1996:27. There it is declared that newly arrived immigrants are specifically well suited for the AEI, due to their low educational level. Another policy in which immigrants are in focus is the Swedish labor market policy, where LMT is an important measure. In *Report of the Governments Commission* (SOU) 1996:34, it is declared that special attention should be devoted to weak performing groups in the labor market. The idea that one of these groups is the immigrant population (or at least a part of it) is expressed explicitly in the Swedish Government Bill 1995/1996:222. In the bill it is stated that "... particular attention should be given to groups that have a weak situation in the labor market, such as, youth, older people, working disabled, long-term unemployed, and foreign citizens of non-Nordic heritage". One of the practical implications of this policy must be that being a non-Nordic citizen should enhance the probability of taking part in a labor market program, all else equal. It is important to observe that the government bill uses the wording "foreign citizens of non-Nordic heritage",

[1] All individuals born in other countries than Sweden are defined as immigrants. This group is further subdivided into foreign citizens and naturalized immigrants. A naturalized immigrant is an individual born abroad but who now is a Swedish citizen. In addition, the term second-generation immigrant is used for individuals born in Sweden, but who at least has one parent that is not.

[2] LMT is a labor market program that is vocationally oriented, whereas the AEI is a theoretically oriented educational program, however, targeted at unemployed individuals. Common to both measures is that they fall under the category adult education.

[3] A brief overview of the labor market situation for immigrants in Sweden is given in section 2.

as opposed to "immigrants of non-Nordic heritage". This wording might bring about a lower level of prioritization of naturalized immigrants into labor market programs, among them LMT, than should be the case by taking their weak labor market situation into account.

The purpose of this paper is to address the question to what extent different groups of immigrants, grouped by region of heritage, time of immigration and citizenship, take part in two different subgroups of adult education; the theoretically oriented AEI and the vocationally oriented LMT. Special attention is devoted to analyze the extent to which naturalized immigrants take part in the two adult education measures. Are naturalized immigrants, in a sense, forgotten when assigning individuals into LMT, since the Swedish Government Bill 1995/1996:222 states that foreign citizens of non-Nordic heritage should be prioritized?

To my knowledge no paper has specifically studied to what extent different groups of immigrants participate in the AEI.[4] However, whether immigrants are being prioritized into labor market programs has been investigated in a number of studies, and the conclusions drawn in these differ. According to a study conducted by the Swedish Parliamentary Auditors (Riksdagens revisorer) (1996), non-Nordic citizens are not over-represented in labor market programs, and thus, not a prioritized group. The Swedish labor market board (AMS) draws another conclusion (AMS 1996, AMS 1997, AMS 1998, AMS 1999). Their research indicates that the group of non-Nordic citizens makes up a larger part of the individuals participating in labor market programs than they do in the group of unemployed.

Neither the study by the Swedish Parliamentary Auditors nor the studies by AMS take other explanatory variables than foreign citizenship into account. In a more thorough study, Ekberg and Rooth (2001) estimate a logit model to investigate whether or not different groups of foreign-born individuals

[4] However, a few papers have used a dummy variable for foreign-born when analyzing the inflow into the AEI.

were prioritized into labor market programs in the years 1995 and 1998.[5] The results show that some non-Nordic groups had higher probabilities to participate in labor market programs whereas other groups had not.[6] In a descriptive part of their study they also show that foreign citizens participated to a greater extent than naturalized immigrants. Furthermore, the descriptive analysis also shows that immigrants were over-represented in educational programs but under-represented in work-oriented measures.[7] In the descriptive part of a study by Runeson and Åslund (2001) it is shown that foreign citizens from more distant regions are the most likely to participate in labor market programs, individuals of African heritage being an exception. Moreover, looking at different subgroups of labor market programs they show, in accordance with Ekberg and Rooth (2001), that foreign citizens are more likely to participate in educational programs but not in subsidized employment or measures aiming at giving work experience.

My study contributes to the literature in two respects. First, the paper focuses on whether different groups of immigrants are more likely, compared to natives, to participate in one of two adult educational measures; namely the AEI and LMT. Since it is often stated that more education is a way of removing inequalities between immigrants and natives, this question is interesting. Secondly, a more detailed analysis of the question of whether naturalized immigrants are a prioritized group is undertaken. This aspect is particularly interesting for LMT, since the policy states that non-Nordic citizens should be prioritized. In order to shed light

[5] As explanatory variables they use immigrant group (based on area of birth and time of immigration), age, the highest attained education, gender, and days unemployed in the last three years.

[6] Immigrants with Asian and Latin American heritage were more likely to participate, whereas immigrants with Western European and Nordic heritage were less likely to participate. Moreover, immigrants with a short time spent in Sweden (arrived 1990 or later) were prioritized into labor market programs regardless of their region of heritage, whereas the situation, in general, was the opposite for immigrants that arrived before 1980.

[7] In the light of the result in a study by Carling and Richardson (2001), where the employment probabilities for individuals participating in different types of labor market programs is compared, this result might be seen as troublesome. The study shows that the probabilities are higher for participants in measures involving subsidized employment and certain programs aiming at giving the participants work experience than for participants in educational measures. This is found to be the case for natives as well as for immigrants.

on these two aspects of allocation into the adult education programs, a multinomial logit (MNL) model is applied. Among the explanatory variables used are, time since immigration and region of birth, so the questions whether the level of prioritization depends on time spent in Sweden and the region of birth can be addressed. Another advantage in this study, compared to previous work, is the access to a more comprehensive data set, which enables control for more information than in earlier studies.

The rest of the paper is outlined as follows. The labor market situation for immigrants in Sweden is discussed shortly in section 2. In section 3, a brief outline of the two programs is given, followed by a description of the data sources. Also included in section 3 is a discussion of the variables included when estimating the MNL model and some descriptives. In section 4, the estimation method and the results are presented. Concluding remarks are given in section 5.

2. The Labor Market Situation for Immigrants

In 1997, 10.8 percent of the Swedish population consisted of individuals born abroad, about half of which were naturalized. In addition, in the same year about 8 percent of the population consisted of second-generation immigrants. It is often stated that a strong standing for immigrants in the labor market is important, both as a tool for obtaining integration and as a measure of successful integration. Therefore, it is troublesome that the situation in the labor market for immigrants was weak. The situation was particularly weak for immigrants with African, Asian, Latin American or Eastern European heritage. Another important aspect of the labor market situation for immigrants is assimilation. Assimilation is said to exist if the situation in the labor market for immigrants gets more similar to that of the natives with time spent in the country. Results in a number of studies, for example le Grand and Szulkin (1999) and Rashid (2002), show that assimilation indeed is present in Sweden, but that the rate of assimilation differs between immigrants from different regions. With this in mind, it is not surprising that the labor market situation was stronger for naturalized

immigrants than for foreign citizens, since the part of an immigrant cohort that is naturalized increases with time spent in Sweden. However, the situation for naturalized immigrants was by no means as strong as the situation for natives. According to Ekberg (1997), even the group of second-generation immigrants, at least those born after 1970, experience a weaker situation in the labor market than natives with two Swedish born parents.

3. The Programs, Data Sources, Choice of Explanatory Variables and Descriptives

A brief outline of the programs is given in section 3.1. The data sources and the data selection procedures are described in section 3.2, while a discussion of the variables included when estimating the MNL model is given in section 3.3. Some descriptives are presented in section 3.4.

3.1 The Programs

LMT has been one of the major labor market measures in Sweden since the 1950s. The program is targeted at unemployed individuals, or those at risk of becoming unemployed. Participants have to be 20 years of age or older and registered as job seekers at the public employment office. The purpose of LMT is to increase the individuals' employability. The dominating element is vocational training programs and preparatory training courses aiming at enabling future participation in a vocational training program. In addition, some measures oriented towards immigrants are classified as LMT.[8] Other prioritized groups are individuals having working disabilities and long-term unemployed. The participant receives compensation corresponding to the unemployment benefit or the cash allowance, with the

[8] These are; Swedish for immigrants and a program directed towards giving work experience for highly educated immigrants in their area of expertise. Moreover, training giving unemployed immigrants valuable experience when re-immigrating and education giving knowledge about starting businesses can be classified as LMT.

minimum level set at SEK 230 per day. If not eligible to either, the compensation is SEK 103 per day.[9]

The AEI was a five-year adult education program with starting date July 1 1997. Information about the AEI was given at the public employment offices, among other places, from May 1 1997. The program was a combination of schooling and labor market program. In that respect, the objective of the AEI was broader than that of more traditional labor market programs, such as LMT, since it was not only aiming at enhancing individuals employability, but also at giving participants greater possibilities to continue with studies in the future. The program was primarily targeted at giving unemployed individuals, aged 20-55, education at compulsory or upper secondary level.[10] Thus, individuals lacking profound educational background were the targeted group. A few groups for which the AEI was deemed to be specifically important were mentioned, one being newly arrived immigrants. The participant in the AEI received a special grant for education and training (UBS) corresponding to the unemployment compensation, if aged 25-55 and eligible to the unemployment compensation.

3.2 Data

The analysis draws on data from Statistics Sweden (SCB) and the event history database (Händel) of the National Labor Market Board. The material from SCB consists of a population file and an income file for 1996 containing 538,004 individuals. All individuals in the population file were in the fall of 1997 in either of three outcome states; namely, LMT, open unemployment, or municipal adult education, of which the AEI is one program. Socio-economic variables, for example country of birth, year of immigration, previous education, gender, and number of children, are

[9] In January 1 1998 the unemployment insurance system was changed. From that date the system includes two parts, a basic insurance part and an elective insurance part. The basic insurance has replaced the cash allowance.

[10] Participation was not, however, restricted to unemployed individuals. Persons with a low previous educational level having a job could participate in the AEI if a long-term unemployed overtook their job.

available in the population file. In the income file from SCB, a number of different annual income measures for the period 1995-2000 are accessible. The material from Händel contains information on all individuals that have been registered as job seekers at the public employment office any time since August 1991. Information such as the registration dates of the individual, start and end dates when participating in labor market programs and job-training activities are included. A very large part, or 504,115 of the 538,004 individuals, present in the data from SCB had been registered at the public employment office at least once since August 1991.

When merging the files, only the individuals present in both data sources are included. Next, all individuals taking part in the municipal adult education, but not in the AEI, were excluded from the sample.[11] In addition, since, in this study, participants in the AEI by definition are those receiving the special grant for education and training, only individuals aged 25-55 and eligible to unemployment compensation were selected. Furthermore, since both programs are primarily targeted at unemployed individuals, all individuals that were not registered as job seekers in 1997 were excluded. Next, individuals taking part in the regular municipal adult education in the fall semester 1996 and/or the spring semester of 1997 were excluded. This was done as an attempt to avoid including individuals that had already started studying, and thus, did not make a "new" choice about taking part in theoretically oriented adult education.[12] In addition, individuals participating in LMT with starting dates before May 1 1997 were excluded since information about the AEI was not widely available before that date. Furthermore, individuals that immigrated later than 1994 were excluded. The reason is that the individuals' labor market state in 1995-96 is controlled for when estimating the MNL-model. Obviously, immigrants arriving later than 1994 did not have the possibility to be active in the Swedish labor market in the whole period 1995-96. In addition, the data set suffered from

[11] The municipalities were told to register which of the participants in the municipal adult education that were AEI participants. Unfortunately, these registers are not reliable. Therefore, in this paper, an individual is defined as an AEI participant if he/she received the special grant for education and training.

[12] The same procedure is not undertaken for participants in LMT, since LMT-programs typically are shorter.

some missing observations and apparently unrealistic figures. Eliminating these observations resulted in a final sample size of 212,999 individuals.

3.3 Variables

As outlined in the introduction, the state in the labor market for different types of immigrants appears to depend upon at least two aspects; the region of heritage and the time spent in Sweden. Therefore, it seems reasonable to base the classification of the immigrants on these dimensions. In addition, in this article, differences between naturalized immigrants and foreign citizens are highlighted. As a consequence, the grouping of the individuals is also based on this criterion. The three steps in the classification is undertaken as follows. First, all individuals are divided into nine groups based upon area of heritage, these are; Sweden, Nordic countries, Western World (Western Europe, USA, Canada, Australia and New Zealand), Eastern Europe, Middle East, Africa, Asia and Oceania, Latin America, and second generation immigrants.[13] Secondly, all of the seven groups that include foreign-born individuals are divided into three groups based upon period of immigration. The immigration periods are; 1968-79, 1980-89, and 1990-94.[14] Thirdly, all of the now 21 groups containing foreign-born individuals are classified into two groups based upon whether they have acquired Swedish citizenship or not. Thus, the three-step classification will generate 44 groups. These groups are introduced as dummy variables when estimating the MNL-model.

To take account of regional circumstances that might cause the probability to end up in the three outcome groups to differ between regions within Sweden, two regionally related variables are included. First, employment growth in the 21 Swedish regions between January 1 1996 and January 1 1997 is used to capture the effect the regional labor market state might have

[13] The group Sweden includes individuals born in Sweden with two Swedish born parents. Second-generation immigrants are those born in Sweden, having at least one parent that is not.

[14] Notations for year of immigration for people born in Sweden are disregarded. People born abroad with no notation for year of immigration are somewhat arbitrary assigned to the earliest immigrant group. The motivation for this procedure is that people immigrating before 1968 do not have a notation for year of immigration in the registers.

on the assignment to different programs.[15] Second, a set of dummys indicating the area of residence is included.[16] The dummy variables are meant to capture regional differences, other than the rate of employment growth in the 21 regions, that might affect the transition into the three outcome groups.

In order to control for differences between individuals that might affect the probabilities of transiting from the initial state into the three outcome states, nine socio-economic variables are included. The nine variables can further be subdivided into three groups. First, three variables are included to take account of the individuals' previous labor market experience. These are; total number of days registered as unemployed in 1995-96, total number of times registered as unemployed in 1995-96, and income in 1996. Secondly, four individually related variables are included; namely, a gender dummy, a dummy indicating if the individual was registered as being working disabled, age, and highest attained educational level. Highest attained educational level and age are included as dummy variables to allow for non-linearities. Thirdly, there are two family related variables, number of children below the age of 18 and a dummy indicating whether the person lived on his/her own.

There are at least two agents influencing if the individual will take part in a program; the individual himself/herself and the individual's official at the public employment office.[17] A number of studies have found that both have an influence on the decision of which labor market program to choose, and that it is likely that the choice oftentimes was made in unity.[18] An "official effect" is thus present. Moreover, Carling and Richardson (2001) found that which public employment office the individual was affiliated to was a more important factor than the characteristics of the individual for deciding which type of labor market program the individual ended up in. Thus, they

[15] Sweden is divided into 21 regions, called län.
[16] Sweden is divided into 8 areas of residence, called riksområden.
[17] However, an individual could apply for the AEI and the special study grant without being in contact with the public employment office.
[18] See, for example, Harkman (2002) and Brännäs and Eriksson (1996).

conclude that an “office effect” exists. However, the data in this study does not allow control for the "office effect" or the "official effect".

3.4 Descriptives

In Table 1, the distribution, of the 212,999 individuals in the sample, over the three outcome groups are given. The group consisting of openly unemployed is by far the largest outcome group, containing 167,894 persons. Second largest is the AEI with 30,667 individuals, whereas the 14,438 LMT participants make up the smallest outcome group. The distribution between the three outcome groups in the three sub samples (natives with two Swedish born parents, first generation immigrants and second generation immigrants) follow the same order in terms of size as the total sample.

***Table 1*:** Number of individuals in three outcome groups.

	AEI	*Openly Unemployed*	*LMT*	*Total number of individuals in the heritage group*
Natives with two Swedish born parents	22,844	118,401	9,698	150,943
First generation immigrants	4,735	33,989	3,302	42,026
Second generation immigrants	3,088	15,504	1,438	20,030
Total sample	30,667	167,894	14,438	212,999

To give a more detailed descriptive picture of how individuals with different immigrant attributes are distributed over the three outcome groups, prioritization indexes are presented in Table 2. The index is calculated by taking the attribute groups' part in the particular outcome group, divided by the attribute groups' part in the total sample. The ratio is then multiplied by 100 to obtain the index. Thus, a value exceeding 100 shows that the attribute group is over-represented in the outcome group, while a smaller value than 100 indicates the opposite.

***Table 2*:** Prioritization indexes for the three outcome groups.

	AEI	*Openly unemployed*	*LMT*
Sweden	105.11	99.52	94.78
2nd generation	107.10	98.19	105.91
Nordic	90.75	101.92	97.30
Western World	61.41	106.45	106.98
Eastern Europe	76.67	100.83	139.91
Middle East	57.96	107.21	105.47
Asia & Oceania	107.57	96.06	129.71
Latin America	107.34	95.47	137.02
Africa	76.30	102.31	123.53
Imm. 1968-79	80.48	103.47	101.06
Imm. 1980-89	78.29	103.34	107.29
Imm. 1990-94	75.07	100.20	150.63
Non-naturalized	73.22	102.88	123.35
Naturalized	82.13	102.38	110.22

Table 2 shows that the only attribute groups that are over-represented in the AEI are the two groups containing people born in Sweden (Sweden and second generation immigrants) and the immigrant groups Asia & Oceania and Latin America. An interesting pattern is that the longer period of time spent in Sweden, the less under-represented in the AEI. The figures also show that naturalized immigrants are less under-represented than non-naturalized immigrants. In the group of unemployed the same four region of heritage groups distinguish themselves from the other groups, however, now they are under-represented. Turning to LMT, only two attribute groups, Sweden and Nordic, have values below 100. Interestingly, immigrants from groups with weaker position in the labor market are more likely to be found in LMT, however the figure for Middle East is surprisingly low. Moreover, recently arrived immigrants are more over-represented than immigrants with a longer period of time spent in Sweden. Finally, it can be seen that non-naturalized immigrants are more over-represented than naturalized immigrants.

4. Estimation Method and Results

The estimation is carried out by means of a multinomial logit (MNL) model.[19] The applied reduced form MNL model answers the empirical question: What factors affect the probability of being observed in the three

[19] See Greene (2000) for a discussion of the MNL model.

outcome groups? The MNL model is chosen due to its ease of estimation. However, it builds upon rather restrictive assumptions, which lead to the independence of irrelevant alternatives (IIA) property.[20] To examine whether the IIA property of the MNL model is violated the Small-Hsiao test is applied. This test is a modified version of a likelihood ratio test since it uses random sub samples to avoid asymptotic bias. The null hypothesis that the IIA property is plausible is not rejected.[21]

The results from the estimation of the MNL model are displayed in Table 3. The left out outcome group is open unemployment, meaning that a number above (below) 1 indicates that an individual with the particular attribute has a higher (lower) probability of participating in the particular program, compared to being found in the group of openly unemployed. The number displayed in Table 3 is thus the relative risk ratio (rrr). Wald tests are performed to test if the rrr's are significantly different from each other in a number of dimensions.

[20] The IIA property implies that the relative odds of choosing any two alternatives do not depend on the number or nature of other alternatives.
[21] See Hsiao & Small (1985) for more information on how the test works.

Table 3: Dummy variables for immigrant groups; natives with two Swedish born parents is the left out comparison group.

Region	Citizenship	Period of Immigration	AEI		LMT	
			rrr	P-value	rrr	P-value
Nordic	Naturalized	1968-79	1.017	0.717	1.125	0.051
		1980-94[a]	0.983	0.911	0.715	0.181
	Non-naturalized	1968-79	**0.835**	**0.002**	0.927	0.318
		1980-94[a]	**0.874**	**0.034**	1.086	0.304
Western World	Naturalized	1968-79	**0.735**	**0.018**	1.013	0.932
		1980-94[a]	0.605	0.065	0.684	0.296
	Non-naturalized	1968-79	0.776	0.066	1.083	0.589
		1980-94[a]	0.875	0.245	**1.497**	**0.000**
Eastern Europe	Naturalized	1968-79	**0.712**	**0.000**	1.165	0.085
		1980-89	0.881	0.097	**1.198**	**0.048**
		1990-94	1.022	0.838	**1.760**	**0.000**
	Non-naturalized	1968-79	**0.589**	**0.004**	0.977	0.906
		1980-89	0.830	0.082	1.163	0.248
		1990-94	0.929	0.244	**1.970**	**0.000**
Middle East	Naturalized	1968-79	**0.503**	**0.000**	1.090	0.458
		1980-89	**0.655**	**0.000**	1.040	0.513
		1990-94	0.865	0.123	1.116	0.266
	Non-naturalized	1968-79	0.679	0.055	0.780	0.351
		1980-89	**0.584**	**0.000**	1.185	0.083
		1990-94	**0.809**	**0.032**	**1.293**	**0.007**
Asia & Oceania	Naturalized	1968-89[a]	0.984	0.821	**1.383**	**0.000**
		1990-94	1.353	0.062	**1.798**	**0.002**
	Non-naturalized	1968-89[a]	1.114	0.533	1.455	0.071
		1990-94	1.075	0.641	**2.007**	**0.000**
Latin America	Naturalized	**1968-89**[a]	**1.351**	**0.000**	**1.593**	**0.000**
		1990-94	**1.904**	**0.004**	**1.698**	**0.048**
	Non-naturalized	1968-89[a]	1.036	0.712	**1.652**	**0.000**
		1990-94	1.090	0.632	**1.711**	**0.003**
Africa	Naturalized	**1968-89**[a]	0.876	0.120	**1.339**	**0.003**
		1990-94	1.079	0.552	**1.443**	**0.010**
	Non-naturalized	**1968-89**[a]	**0.669**	**0.040**	1.170	0.420
		1990-94	1.167	0.240	**1.657**	**0.000**
2nd generation immigrants		-	**0.946**	**0.012**	**1.128**	**0.000**
Number of observations						212,999
Log likelihood						-128 273.4
Pseudo R2						0.0721

[a] Some of the groups contain less than 200 individuals, and are therefore merged with another group in the period of immigration dimension.

Other variables:

	AEI		LMT	
	rrr	P-value	rrr	P-value
Regionally Related Variables				
Employment growth in the region (län)	**1.012**	**0.000**	**1.037**	**0.000**
Area of residence (riksområden) dummys, area 1 (Stockholm) is the left out comparison group				
Dummy area 2	1.008	0.739	**1.329**	**0.000**
Dummy area 3	**1.221**	**0.000**	**1.205**	**0.000**
Dummy area 4	**1.278**	**0.000**	1.065	0.070
Dummy area 5	**1.063**	**0.012**	1.005	0.890
Dummy area 6	**1.082**	**0.004**	**1.745**	**0.000**
Dummy area 7	1.053	0.126	**1.323**	**0.000**
Dummy area 8	0.979	0.487	**1.507**	**0.000**
Labor Market situation for the Individual				
Unempl.days 95-96	**1.0004**	**0.000**	**1.0003**	**0.000**
Unempl.freq. 95-96	**1.036**	**0.000**	**1.043**	**0.000**
Income 1996	**1.000003**	**0.000**	**1.000001**	**0.000**
Individual Variables				
Female	**2.665**	**0.000**	**1.147**	**0.000**
Working disable	**0.653**	**0.000**	**1.131**	**0.000**
Age dummys, aged 25-30 is the left out comparison group				
Age 31-35	**0.907**	**0.000**	1.027	0.305
Age 36-40	**0.799**	**0.000**	**1.107**	**0.000**
Age 41-45	**0.694**	**0.000**	0.989	0.708
Age 46-50	**0.491**	**0.000**	**0.935**	**0.034**
Age 51-55	**0.327**	**0.000**	**0.693**	**0.000**
Educational dummys, primary education or less is the left out comparison group				
Dummy for upper secondary education < 2 years	**1.446**	**0.000**	**1.303**	**0.000**
Dummy for upper secondary education > 2 years	**0.673**	**0.000**	**1.538**	**0.000**
Dummy for post secondary education < 3 years	**0.324**	**0.000**	**1.269**	**0.000**
Dummy for post secondary education > 3 years	**0.136**	**0.000**	**1.243**	**0.000**
Single Household	**0.969**	**0.037**	0.969	0.130
Number of children < 18 years	**1.130**	**0.000**	**1.026**	**0.006**
Constant	**0.077**	**0.000**	**0.034**	**0.000**
Number of observations				212,999
Log likelihood				-128 273.4
Pseudo R2				0.0721

Heritage, citizenship and immigration period

Some of the immigrant groups contain less than 200 individuals. Those are merged with the closest immigrant group in the period of immigration dimension, reducing the 43 immigrant groups to 33. The remaining 33

immigrant group dummy variables are compared with the left out Swedish born individuals with two Swedish born parents.

Looking at the AEI group, Table 3 shows that 13 of the 33 rrr's are significant at the 5 percent level. Eleven of these are below 1 and two are above. Among the significant rrr's, the general pattern is thus that the probability to participate in the AEI, instead of being openly unemployed, is lower among immigrants than among natives with two Swedish born parents. Turning to the region of heritage dimension, Table 3 indicates that persons of Middle Eastern heritage have the lowest probability to participate. The two significant rrr's above 1 are found for naturalized Latin Americans. Why the probability to participate in the AEI differ so much between two groups that both have a weak standing in the labor market is puzzling. However, similar results are found in Ekberg and Rooth (2001) when studying the probability to participate in different labor market policy measures.

Since the AEI was deemed to be specifically important for newly arrived immigrants, it is particularly interesting to analyze the participation in the AEI for this group. One can see that, except for naturalized immigrants from Nordic and Western World and non-naturalized immigrants from Asia & Oceania, the rrr's for the most recently arrived immigrant cohorts are the largest. Thus, it seems, by just looking at the rrr's, that the most recently arrived immigrants in general are more likely to participate in the AEI, instead of being openly unemployed, than earlier immigrants. Wald tests are performed to test if this pattern is statistically significant. The tests, presented in Table 4, are carried out between groups with the same region of heritage and citizenship having different, but adjacent, periods' of immigration.

***Table 4*:** Wald tests for difference between immigration periods. Bold figures indicate statistical significance at the 5% level ($\chi^2 > 3.84$), italics at the 10% level ($\chi^2 > 2.71$).

Region	Citizenship	Diff. in coeff. between period of immigration	AEI		LMT	
			Difference[a]	χ^2	Difference[a]	χ^2
Nordic	Naturalized	$\beta_{68\text{-}79}$-$\beta_{80\text{-}94}$	+	0.04	+	*3.10*
	Non-nat.	$\beta_{68\text{-}79}$-$\beta_{80\text{-}94}$	-	0.28	-	2.10
Western World	Naturalized	$\beta_{68\text{-}79}$-$\beta_{80\text{-}94}$	+	0.42	+	0.99
	Non-nat.	$\beta_{68\text{-}79}$-$\beta_{80\text{-}94}$	-	0.44	-	*3.09*
Eastern Europe	Naturalized	$\beta_{68\text{-}79}$-$\beta_{80\text{-}89}$	-	**3.96**	-	0.05
		$\beta_{80\text{-}89}$-$\beta_{90\text{-}94}$	-	1.30	-	**7.86**
	Non-Nat.	$\beta_{68\text{-}79}$-$\beta_{80\text{-}89}$	-	2.60	-	0.54
		$\beta_{80\text{-}89}$-$\beta_{90\text{-}94}$	-	0.83	-	**13.73**
Middle East	Naturalized	$\beta_{68\text{-}79}$-$\beta_{80\text{-}89}$	-	**4.91**	+	0.14
		$\beta_{80\text{-}89}$-$\beta_{90\text{-}94}$	-	**6.86**	-	0.39
	Non-Nat.	$\beta_{68\text{-}79}$-$\beta_{80\text{-}89}$	+	0.44	-	2.18
		$\beta_{80\text{-}89}$-$\beta_{90\text{-}94}$	-	**5.44**	-	0.42
Asia & Oceania	Naturalized	$\beta_{68\text{-}89}$-$\beta_{90\text{-}94}$	-	*3.27*	-	1.56
	Non-nat.	$\beta_{68\text{-}89}$-$\beta_{90\text{-}94}$	+	0.02	-	1.49
Latin America	Naturalized	$\beta_{68\text{-}89}$-$\beta_{90\text{-}94}$	-	2.12	-	0.05
	Non-nat.	$\beta_{68\text{-}89}$-$\beta_{90\text{-}94}$	-	0.06	-	0.03
Africa	Naturalized	$\beta_{68\text{-}89}$-$\beta_{90\text{-}94}$	-	1.86	-	0.19
	Non-nat.	$\beta_{68\text{-}89}$-$\beta_{90\text{-}94}$	-	**5.61**	-	2.16

[a] The difference is positive if the rrr for the earlier immigrant group is larger than the rrr for the more recent immigrant group. If negative, the sizes of the rrr's are the opposite. Thus, a significant test statistic when the difference is negative indicates that the probability of participating in the AEI/LMT instead of being openly unemployed is higher for the more recent immigrant cohort.

In total, 18 such tests are performed, five of which indicate significant differences at the 5 percent level and one at the 10 percent level. All of these indicate that the more recently arrived group (of the two involved in the test) was more likely to participate in the AEI.[22] Four of the significant tests involve groups of immigrants from the most recently arrived immigrant cohort. In the immigration literature it is sometimes claimed that some human capital is not useful in all cultures and countries. Thus, immigration is associated with an initial loss of this non-transferable, or country-specific, human capital. Moreover, this type of human capital is often regarded as necessary for successful use of the transferable human capital. If present, this structure would induce a greater incentive for the newly arrived immigrants to complement their human capital, offering a possible explanation for why the probability to participate in the AEI is higher among more recently arrived immigrant cohorts than among earlier cohorts. However, again turning to the results for the AEI in Table 3, note that only

[22] In Table 4 this can be seen by the fact that the difference in the coefficients between two adjacent periods of immigration is negative for the six tests that are significant.

one of the rrr's for the most recently arrived immigrant groups is significant and above 1, whereas two are below 1 and significant. The conclusion to be drawn, from the Wald tests in Table 4 and the coefficients in Table 3, is that some evidence is found indicating that immigrants with shorter time spent in Sweden are more likely to participate in the AEI than immigrants with longer time spent in Sweden. However, no clear-cut pattern between natives with two Swedish born parents and the most recently arrived immigrants can be found.

Additional Wald tests are carried out to see if there exist any statistically significant differences in the probability to participate in the AEI between naturalized and non-naturalized immigrants. This dimension is analyzed by a pair wise comparison of groups from the same immigrant cohort having the same region of heritage, but differing in the citizenship dimension. In total, 16 such pairs can be formed. In Table 5 one can see that two of the 16 tests performed indicate that the probability for AEI participation for naturalized immigrants is significantly higher at the 5 percent level and one at the 10 percent level, no test indicates the opposite. Thus, some weak evidence that naturalized immigrants are more likely to participate in the AEI than non-naturalized immigrants is found.[23] A possible explanation to this pattern is that naturalized immigrants have a lower return migration probability and therefore have a greater incentive to invest in an education that, to some extent, result in Sweden-specific human capital.

[23] Note that the three significant tests concern only two region of heritage groups. No general pattern can thus be said to exist.

Table 5: Wald tests for difference between naturalized and non-naturalized immigrants. Bold figures indicate statistical significance at the 5% level ($\chi^2 > 3.84$), italics at the 10% level ($\chi^2 > 2.71$).

Region	Period of immigration	Difference in coefficient	AEI		LMT	
			Difference[a]	χ^2	Difference[a]	χ^2
Nordic	1968-79	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	**7.22**	+	**4.10**
	1980-94	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	0.51	-	2.53
Western World	1968-79	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	-	0.08	-	0.10
	1980-94	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	-	1.55	-	**4.26**
Eastern Europe	1968-79	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	0.91	+	0.66
	1980-89	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	0.21	+	0.04
	1990-94	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	0.61	-	0.91
Middle East	1968-79	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	-	1.72	+	1.33
	1980-89	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	1.00	-	1.36
	1990-94	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	0.25	-	1.21
Asia & Oceania	1968-89	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	-	0.44	-	0.05
	1990-94	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	1.06	-	0.19
Latin America	1968-89	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	**4.63**	-	0.06
	1990-94	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	*3.82*	-	0.00
Africa	1968-89	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	+	1.60	+	0.39
	1990-94	$\beta^{Natur.} - \beta^{Non\text{-}nat.}$	-	0.18	-	0.50

[a] The difference is positive if the rrr for the naturalized group is larger than the rrr for the non-naturalized group. If negative, the sizes of the rrr's are the opposite. Thus, a significant test statistic when the difference is positive indicates that the probability of participating in the AEI/LMT instead of being openly unemployed is higher for naturalized immigrants.

Turning to the LMT group in Table 3, one can see that 16 of the 33 rrr's for the immigrant group dummy variables are significant at the 5 percent level. All of these rrr's are above 1. Thus, in general, the probability to participate in LMT, instead of being openly unemployed, is higher among immigrants than among natives with two Swedish born parents. This pattern might in part be explained by the fact that some of the LMT programs are specifically targeted toward immigrants. However, differences exist between the immigrant groups along the region of birth dimension. More specifically, the same pattern as where present in the descriptives is found here; namely, immigrants from the regions having the weakest position in the labor market are most likely to participate in LMT. An explanation to this tendency might be the policy statement that weak performing groups should be devoted special attention when assigning individuals into labor market programs. A bit crudely, this pattern can also be said to show that immigrants from geographically more distant regions are the most likely to participate in LMT. The policy statement that non-Nordic citizens should be prioritized into labor market programs might be an explanation to this. Interestingly, though, even the rrr's for second-generation immigrants, as

well as many of the groups of naturalized immigrants, are above 1 and significant. Another possible explanation to the prevailing pattern in the geographical dimension might be that having a geographically distant heritage also, in general, means facing a larger linguistic barrier. This would in turn imply a greater need for participation in the LMT program "Swedish for immigrants". In addition, having a geographically more distant heritage often means a lower possibility for re-immigration to the country of origin. Therefore, an investment in human capital, that to some extent is specific to Sweden, might be more interesting for these groups.

To analyze the effect of time spent in Sweden and citizenship on the probability of participating in LMT, Wald tests are carried out. First, turning to the time spent in Sweden dimension, differences between groups with the same region of heritage and citizenship from different, but adjacent, immigration periods are tested for. In Table 4, one can see that 15 of the 18 differences are negative. This indicates that the probability to participate in LMT is higher the more recently the immigration took place. However, only four of the 18 tests are significant, two at the 5 percent level and two at the 10 percent level. Three of the four tests that are significant indicate that more recently arrived immigrants are more likely to participate in LMT. This pattern is particularly evident for immigrants from Eastern Europe, for whom two tests are significant at the 5 percent level. Both these tests indicate that immigrants that arrived during the 1990s are more likely to participate in LMT than immigrants that arrived during the 1980s. It is possible that this pattern is driven by the policy formulation that special attention should be devoted to weak performing groups in the labor market.

The second set of Wald tests carried out on the LMT group is the 16 Wald tests between groups from the same immigration cohort having the same region of heritage, but differing in the citizenship dimension. In Table 5 one can see that only two of these turn out to be significant, both at the 5 percent level. One of the significant tests indicates that naturalized immigrants are less likely to participate in LMT, whereas the other indicates the opposite. Thus, there is no support for the hypothesis that naturalized immigrants

have been forgotten, as compared to non-naturalized immigrants, when assigning individuals into LMT.

Other Variables

Turning to Table 3, one can see that most of the rrr's for the other variables included in the MNL model are significant at the 5 percent level. First, looking at the regionally related variables, many of the rrr's for the area of residence dummy variables are significant and above 1. This means that the probability to participate in any of the two programs, compared to being openly unemployed, is higher in other areas than in Stockholm. In addition, the rrr's for employment growth in the region are above 1 and significant for both programs.

Secondly, the rrr's for all the variables used to control for the previous labor market experiences of the individual are significant for both LMT and the AEI. Individuals with more days registered as a job seeker in 1995-96, more times registered as a job seeker in 1995-96, and higher income in 1996, are more likely to participate in LMT or the AEI, compared to being openly unemployed.

Thirdly, turning to the individual variables, the rrr for the dummy variable female is above 1 and significant for both programs. Thus, females are more likely to participate in any of the two programs, instead of being openly unemployed. Noteworthy is that this effect is much larger for the AEI than for LMT. Furthermore, for working disabled, the probability to participate in LMT is higher. Working disabled should be a prioritized group according to the Swedish labor market policy, so this result is in line with the policy. In contrast to LMT, the rrr for the working disability dummy variable is below 1 and significant for the AEI. The rrr's of the age dummy variables are significant for both programs. The rrr's are falling more and more short of 1 with age for the AEI. For LMT, the rrr's for the age dummy variables also show that older individuals are less likely to participate than younger individuals. However, the pattern is less clear-cut than for the AEI. This

seems reasonable since the AEI to a greater extent than LMT is an educational program, and thus more clearly an investment in human capital.[24] The rrr's for the educational dummy variables are all above 1 and significant for LMT, the lowest educational level; primary education or less is the left out comparison group. For the AEI, the educational dummy variables tell a different story, but one that is in line with the policy objectives of the program. People with low previous educational level are more likely to participate than individuals with a high level of formal education.

Fourthly, the rrr's for the two family related variables show a similar pattern for both the AEI and LMT. Individuals having more children below the age of 18 are more likely to participate in both programs, whereas the single household dummy variable is below 1 for both programs, however the rrr is only significant for the AEI.

5. Concluding Remarks

A common, however criticized, standpoint is that the relatively weak situation in the labor market for immigrants could be improved by enhancing the groups' educational level. This conception is, for example, reflected in the policy formulations for two adult education measures. First, the theoretically oriented Adult Education Initiative (AEI) was regarded as being specifically well suited for recently arrived immigrants. Secondly, special attention should be devoted to non-Nordic citizens when assigning individuals into the vocationally oriented Labor Market Training (LMT). To analyze to what extent the probability to participate in any of the two programs, instead of being openly unemployed, differ between immigrant groups and natives with two Swedish born parents, a Multinomial Logit (MNL) model is estimated.

[24] Naturally, the expected benefit from an investment in human capital can, in general, be incurred over a longer period the younger a person is, thereby leading to a higher benefit from participation for younger people.

In general, the results show that the probability to participate in the AEI instead of being openly unemployed is lower among immigrants. Individuals being of Middle Eastern heritage have the lowest probability. The only two groups that have higher probabilities to participate in the AEI than Swedish born with two Swedish born parents consist of naturalized Latin Americans (from different immigration periods). Using Wald tests, some evidence is found indicating that the probability of AEI participation, instead of being openly unemployed, is higher for more recently arrived immigrants than for earlier immigrant cohorts. However, compared with natives with two Swedish born parents, even the most recently arrived immigrant groups are not, in general, more likely to participate in the AEI instead of being openly unemployed. Additional Wald tests give some indications that naturalized immigrants are more likely to participate in the AEI, instead of being openly unemployed, than non-naturalized immigrants.

In contrast to the results for the AEI, the probability of participating in LMT instead of being openly unemployed is, in general, found to be higher among immigrants. Crudely, one might say that the strongest effects are found for the immigrant groups from the geographically more distant regions. It is also these immigrant groups that have the most problematic situation in the labor market. When looking at the period of immigration dimension a weak tendency that more recently arrived immigrants have a higher probability to participate than earlier immigrants is found. When performing Wald tests, significant differences indicating that immigrants from Eastern Europe arriving during the 1990s are more likely to participate in LMT than Eastern European immigrants arriving during the 1980s are found. No clear-cut pattern is found when using Wald tests to test for differences in the probability to participate in LMT between naturalized and non-naturalized immigrants.

When interpreting the results in this study one should keep in mind that only individuals eligible to unemployment compensation were included. Since the eligibility requirement is based on previous employment, individuals not fulfilling this criterion are eliminated from the final sample upon which the

MNL model is estimated. Individuals from groups having the largest difficulties in the labor market are, therefore, to a larger extent excluded from the analysis.

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