

Intermarriage and Immigrant Integration in Sweden: An Exploratory Analysis

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Abstract

Intermarriage is a key aspect of immigrant integration. In this article we explore marital exogamy (especially intermarriage between immigrants and natives) for 39 different immigrant groups using cross-sectional register data for the total immigrant populations in Sweden in 2003. This makes possible a more detailed analysis than in most previous studies. Immigrants that are better educated, who spend longer time in Sweden before marriage and live outside the bigger cities are more likely to be married to natives. Controlling for age at immigration, education, time between immigration and marriage, settlement size, and the relative size of the immigrant group of the opposite sex, immigrants from Western Europe (excluding Finland) and the United States are more likely to be married to natives than immigrants from the rest of the world including the Balkans and Eastern Europe. We also analyze the link between intermarriage and economic integration (employment and income). The results indicate a strong association between intermarriage with natives and economic integration in terms of employment and income. Immigrants married to natives are more likely to have a job, and also have higher individual and household income.

Paper for session 4 “Migrant Demographic Behaviour: Nuptiality” at the European Population Conference, Barcelona, Spain, July 9-12, 2008.

Acknowledgments

Previous versions of this paper were presented at the annual meeting of the Population Association of America, New York, March 29-31, 2007, the SULCIS “Immigrant integration” conference in Stockholm, October 23-24, 2007, and at the Department of Sociology, University of Gothenburg, April 10, 2008. Martin Dribe acknowledges financial support from the Swedish Council for Working Life and Social Research (FAS) and Christer Lundh from The Swedish Association of Local Authorities and Regions.

Introduction

Intermarriage with the host country population has for long been considered vital to immigrant societal integration. A large proportion of inter-ethnic marriages is associated with a society where cultural and socioeconomic barriers have been overcome and immigrants have adopted the characteristics of the majority population (Alba and Golden, 1986; Lieberman and Waters, 1988; Pagnini and Morgan, 1990). However, intermarriage is not only a measure of social and economic integration, but also a factor that potentially influences these kinds of integration processes (Lieberman and Waters, 1986; Kantarevic 2004, Meng and Gregory 2005; Nielsen, Smith, and Celiakaksoy 2007).

While there has been a large number of studies on intermarriage dealing with the United States, and to some extent Canada and Australia, there has been much less attention to these issues in Europe. Most of Europe experienced net emigration to the New World (especially the United States) until about 1930, but have turned into net-immigration areas in the post-World War II period.

In many ways the immigrant populations of Europe are very different from that of the United States, and the patterns of integration also differ a great deal. The higher prevalence of political refugees in the European immigration compared to the United States has implied greater difficulties to integrate immigrants in European labour markets and societies in general. In addition, immigrants from developing countries seem to be more socially marginalized and excluded from the labour market in Europe than in the United States. These apparent differences in immigration patterns and immigrant integration between the United States and Europe make it difficult to draw conclusions about intermarriage and its impact on immigrant integration in Europe on the basis of American results. This calls for detailed European studies of intermarriage patterns and the relation, more generally, with immigrant integration.

In this article we study marital exogamy for 39 immigrant groups in Sweden using cross-sectional data from 2003, focusing especially intermarriage between immigrants and natives. We connect to theories on immigrant integration and human capital, analyzing determinants of exogamy and the association between intermarriage and the individual probability of having a job, and on the individual and household income, using multivariate regression analysis. Three types of marriages are distinguished: endogamous (both parties belonging to the same immigrant group), exogamous unions between two immigrant parties of different origin, and exogamous unions between an immigrant and a native. We use data for the immigrant population aged 20-59 from 39 different countries of origin (47,000 men and 60,000 women). Only marriages that took place in Sweden from 1968 onwards and where both parties were alive and resident in Sweden in 2003 are included in the analysis.

In the next section we discuss the theoretical background followed by an account of immigration to Sweden and the integration of immigrants in the Swedish labour market. After presenting the data we turn to the empirical analysis of the determinants of exogamy, and the association between exogamy and economic integration measured by employment status, individual income and household income. In the latter case, we cannot establish any causal relation between marital exogamy and labour market integration. However, since the link between intermarriage and immigrant earnings has seldom been studied, and never using Swedish data, it is still interesting to know whether there is any association or not.

Theoretical background and previous research

While intermarriage as a social phenomenon has been analyzed by social scientists from different theoretical perspectives since the early twentieth century, there are only few studies on the role of intermarriage on immigrants' economic integration. Theoretically, four main approaches to intermarriage could be identified.

Firstly, exchange theory claims that individuals of ethnic minorities who marry majority group members trade high socioeconomic status for the high ethnic status of the members of the majority society (Davis, 1941; Merton, 1941). Empirically this theory has found support in studies of mixed marriages of black grooms and white brides (Wirth and Goldhamer, 1944; Monahan, 1976; Heer, 1974; Shoen and Wooldredge, 1989). There also seems to be widespread educational homogamy in most Western countries (see, e.g., Kalmijn, 1998; Mare, 1991; Henz and Jonsson, 2003). Hence, an immigrant with a higher education has an asset that could be bargained in the marriage market to natives who are willing to trade endogamy for a spouse with high education (Furtado, 2006; Furtado and Theodoropoulos 2008). However, it has also been suggested that immigrants from developing countries arriving at an early age, who are endogamously married to immigrants arriving in connection with marriage (i.e. marriage-immigrants, or “imported” spouses) make less educational investments than other immigrants. This has been explained using a family-investment model, where the marriage immigrant is investing in country-specific human capital, which leads, or sometimes forces, the previously resident immigrant to defer education in order to enter the labour market and provide for the family (Nielsen, Smith and Celikaksoy 2007). Even though this is probably only relevant for a small part of the immigrants studied here, it nonetheless cautions against an interpretation where impact only flows from high education to exogamy – it may well, at least partly, also go in the opposite direction, from endogamy to low education.

Secondly, assimilation theory has long been the most influential way to explain immigrants’ gradual integration and possible assimilation (i.e. complete integration) into the host society. It has successfully predicted the path of integration and marriage pattern of ethnic groups of European origin in the United States (Alba and Golden, 1986; Lieberman and Waters, 1988; Pagnini and Morgan, 1990). According to the assimilation perspective, immigrants initially possess cultural and socioeconomic features that distinguish them from natives, which hinder interethnic marriages. The process of integration includes acculturation (e.g. learning the native language or adopting the cultural patterns of the native group) and structural integration (e.g. achieving socioeconomic status that is comparable to that of the native population). This process is completed when there are no perceived differences between the immigrant group and the native group (Gordon, 1964). Integration weakens the ethnic attachment and increases contacts with potential partners from other groups, which increases the propensity of exogamy. In this way, intermarriage is seen as the logic outcome of the integration process (Lieberman and Waters, 1988).

The central variable of the assimilation model is time spent in the host society. Immigrants will be more likely to intermarry the longer they stay in the host society, but how long it takes until an immigrant group is totally integrated depends on the cultural and socioeconomic differences compared to the majority population. Human capital is generally assumed to have positive effects on intermarriage. Educated immigrants are more likely to move out of ethnic enclaves for further education or to get a job, and they possess better language skills. Therefore, they are more exposed to prospective partners of different ethnic background (Furtado, 2006; Furtado and Theodoropoulos 2008).

Thirdly, social stratification theory emphasizes the need to take demographic and socioeconomic structures into account when discussing preferences for intermarriage (Blau, 1977). The size of the minority group, availability of prospective partners and degree of racial, socioeconomic and residential heterogeneity influence the individual’s likelihood of intermarriage (Blau, 1977; Blau, Blum and Schwarz, 1982; Blau and Schwarz, 1984; Blau, Becker and Fitzpatrick, 1984; South and Messner, 1986).

Fourthly, segmented assimilation theory proposes an alternative to assimilation theory that builds on the variation in the integration outcome. Some immigrant and descent groups in the United States have become quite similar to the native population, while others are

marginalized and subject to discrimination. According to the segmented assimilation thesis, the way that new immigrants are incorporated into society is closely linked to the situation of previous immigrants with the same ethnicity (Portes, 1995; Zhou, 1997; Skop, 2001). Thus, it could be expected that intermarriage varies between different ethnic groups. Furthermore, preference for endogamous marriages in some immigrant groups has been attributed to the influence of highly familistic cultures, for instance among Mexicans (Alvirez, Bean and Williams, 1981; Hurtado, 1995) and immigrants of Asian background (Hwang, Saenz and Aguirre, 1987; Liang and Naomi, 1999; Qian, 1999; Qian, Blair and Ruf, 2001).

Inspired by these theoretical approaches to immigrant integration, we hypothesize that immigrants with a long period of adaptation are more likely to be exogamously married to natives than immigrants who have entered Sweden more recently. However, we also expect great variation between different immigrant groups, since the linguistic and cultural 'distance' to the Swedish standard varies a lot across immigrant groups. Moreover, there should be considerable individual variation in intermarriage depending on differences in individual human capital characteristics. We hypothesize that individuals with higher education are overrepresented in the group of individuals exogamously married, partly because of exchange of characteristics in the marriage market, and partly because higher educated individuals learn the native language and customs faster. Intermarriage is not only dependent on the length of the adaptation period and individual and cultural characteristics; demographic and social structural factors are also important. We expect the availability of prospective partners in a particular immigrant group to affect the probability of endogamy in that group. Immigrants living in areas which are heterogeneous in terms of the origin of the population should also be more exogamous than other immigrants.

In the Swedish case we expect immigrants from Europe, in particular the Nordic countries, to be intermarried with natives to a higher extent than non-European immigrants. Especially immigrants from the Nordic countries (excluding Finnish-speakers) have a native language and culture that is highly similar to the Swedish, which should further promote intermarriage. In contrast, non-European immigrants deviate more from the native population in terms of language, religion and culture. Furthermore, some sending regions are characterized by a familistic culture, where endogamous marriages are very important, and partner selection is thus influenced by traditional family values (Wildsmith, Gutmann and Gratton, 2003). It is likely that immigrants are carriers of such values which would influence marriages taking place in Sweden.

Turning to the link between intermarriage and immigrant integration into the labour market the standard economic approach to this issue is the human capital theory (Sjaastad, 1962; Becker, 1964; Schultz 1961). Even though many studies on immigrant economic integration have been undertaken within this framework, only a few have taken intermarriage into account (e.g. Meng and Gregory 2005; Meng and Meurs 2006; Kantarevic 2004). The human capital perspective on immigrant economic integration is similar to the assimilation model. Upon arrival in the host society, the human capital of the immigrant is partly devalued since formal and informal skills are invalid or hard to evaluate. Such skill deficiencies make the labour market careers of immigrants more difficult, but gradually a revaluation of the human capital can take place through improved host country language proficiency, job search activities and on-the-job training (Chiswick, 1978).

One crucial variable in the human capital approach to economic integration is time since immigration. The earnings of immigrants are in almost all studies positively correlated to the number of years since immigration. In what ways the immigrant's human capital is increased over time is seldom studied because data is lacking in most cases, with the exception of the improvements in language skills (see McManus, 1985; Chiswick, 1991; Chiswick and Miller,

1994; Dustman, 1994) or education attained in the host country (see e.g. Scott, 1999; Bevelander, 2000).

The effects of ethnic relations on individual economic performance have also been studied. Borjas (1992, 1995, 1998) finds that the human capital of immigrant parents spill over to their children and that social, economic and cultural factors in an ethnic neighbourhood has a similar effect. In this way, the adaptation period of the immigrant group is prolonged. Other studies find a positive effect of ethnic networks and neighbourhoods on individual immigrants' labour market integration (Battu, Mwake and Zenou, 1984; Edin, Fredriksson and Åslund, 2003). For theoretical reasons, the access to native networks could be assumed to have a positive effect on immigrant economic integration, but this variable is rarely included in standard economic wage regressions.

The marriage premium literature has generally found a positive correlation between marital status and male earnings (Nakosteen and Zimmer 1987; Korenman and Neumark 1991). This correlation has been explained in terms of self-selection in the marriage market (Hill, 1979; Nakosteen and Zimmer 2001) and 'true' effects of marriage on individual productivity. The division of labour within the household gives married men greater opportunities to invest in human capital than single men which makes married men more productive, thereby earning more (Becker, 1981, 1985; Kenny, 1983). However, Benham (1974) found a positive influence of the wife's educational level on husband's earnings (see also Welch, 1974). If there are spill-over effects of human capital within marriage, it is probable that intermarriage with a native increases the human capital accumulation of the individual immigrant, for example in terms of language skills, and hence improves the adaptation to the labour market and working life practice, and also gives access to native networks which are important in job search activities. In both ways, intermarriage would improve the immigrant's position in the labour market.

Thus, there are good theoretical reasons to expect a causal link between intermarriage and immigrant economic integration. However, it is also possible to argue that the causality goes in the opposite direction. Immigrants with higher earnings might be selected in such a way that they are also more likely to marry natives, or might be more likely to do so simply because they are better integrated into the host country and therefore interact with more native people. In this study we are not able to establish any causal links between intermarriage and labour market attachment due to the cross-sectional nature of the data. Instead, we limit the analysis to potential associations between marital exogamy, especially intermarriage with natives, and individual immigrant's chances in the labour market, which has previously not been done for Sweden. Future work using longitudinal data will be better able to distinguish the causal links behind these associations.

Immigration to Sweden

Sweden has been subject to large-scale immigration since the end of World War II. In total, almost 2.4 million people immigrated in the period 1946-2003, which should be related to a total population of 9 million people in 2003 (6.8 million in 1946). However, a high proportion of immigrants have returned home, although the rates of return migration differ a great deal between different immigrant groups (see, e.g., Klinthäll 2003). In 2003 the immigrant population was over 1 million, which was about 12 percent of the total population.¹

Figure 1 here

Post-war immigration to Sweden can be divided into two phases, based on its character, immigration policy and the economic context. Between 1946 and 1975 the vast majority of immigrants were labour migrants (including their families), but there were also some refugees

coming from communist countries. Most labour migrants came from the Nordic countries (about 60 percent), but there were also immigrants from the rest of Western Europe in the 1950s, and from Yugoslavia, Greece and Turkey in the 1960s (Lundh and Ohlsson, 1999). Especially in the 1940s and 1950s, skilled foreign workers were recruited to the Swedish industry, but most labour migrants were unskilled, often with no experience of industrial work. The Fordistic organization of large scale industries made it possible to hire unskilled immigrant workers, with little or no language skills and no experience of Swedish organizations and working life. It has been shown that the labour migrants of these decades had no difficulties in finding a job (Lundh and Ohlsson, 1999). By 1970, the immigrant employment rates were higher, on average, than those of natives, and immigrants also earned more than natives on average. At least partly, immigrants performed better on the labour market in average terms because they were younger and worked more than natives (see Wadensjö, 1973; Ohlsson, 1975, 1978; Scott, 1999; Bevelander, 2000).

Figure 2 here

The second phase of immigration started in the early 1970s and is still ongoing. During this period, the preconditions for labour immigration were different. The rate of economic growth was lower than previously, the importance of the industrial sector for the total employment had declined gradually since the middle of the 1960s, and new jobs, mainly in the service sector, required Sweden-specific skills, such as language proficiency and/or higher education. In the early 1970s, the demand for foreign labour had already declined and the immigration policy had become more restrictive in relation to non-Nordic citizens (Lundh and Ohlsson, 1994, 1999). As a consequence, labour immigration from non-Nordic countries practically ceased in the 1970s. Nordic labour immigration, which was still free, declined too, as the standard of living and unemployment converged in the Nordic countries. As labour migration declined, immigration became dominated by refugees and tied movers. In the 1970s, refugees from Latin America predominated, during the 1980s most refugees came from the Middle East, and in the 1990s refugees from the former Yugoslavia were of great importance in Swedish immigration.

The degree of economic integration of immigrants in Sweden is much lower for non-European immigrants than for European immigrants, even when controlling for individual characteristics such as sex, age, civil status, educational level, time since immigration, etc. (for an overview, see Gustafsson, 2002; Bengtsson, Lundh and Scott, 2005). Partly, this coincides with the fact that non-Europeans have been refugees while Europeans usually have entered as labour migrants, but variation in the integration in the labour market is large even among different refugee groups. The poor economic integration of recent non-European immigrant cohorts has been attributed to the low levels of language proficiency, lack of other sorts of 'Sweden-specific knowledge' and networks, and discrimination (see Bengtsson, Lundh and Scott, 2005).

Data and Methods

The data contains records from different registers held by Statistics Sweden (mainly RAMS, LISA and RTB) of immigrants residing in Sweden December 31, 2003. Immigrants are included provided they had a residence permit, which means that asylum seekers are not included. For each person information is available on individual characteristics (sex, age, educational level, country of birth, immigration year), and on labour market outcomes (employment status and income). For all married individuals, the year and place of marriage is also registered, as is the spouse as long as he or she is living in Sweden. The sample contains immigrants from 39 different countries, aged 20-59 years in 2003, with a registered

marriage in Sweden after 1968. Thus, immigrants who were already married when they moved to Sweden are excluded, and so are couples who married outside Sweden. Therefore the sample is not representative for the total married foreign population residing in Sweden. Naturally, unmarried cohabitants are also excluded from the sample.

Information on country of birth is crucial to this study. There is no information in the Swedish registers that could be used to distinguish individuals by religion or ethnicity; all we know is where the person was born and his or her citizenship. Whenever mentioned, natives refer to all individuals born in Sweden, regardless of the country of birth of their parents. This means that second generation immigrants are counted as natives in this study.

One difficulty with country of birth is that geographical borders change over time. For example, the breakdown of former Yugoslavia and the Soviet Union, and the formation of a number of new states, makes the Swedish immigration records somewhat heterogeneous over time in terms of included countries. Most immigrants from the former Soviet Union after the breakdown have come from Russia. It is plausible that most immigrants during the communist period also were Russians, but they were registered as immigrants from the Soviet Union and could have come from any republic of the union. In this study the category 'Russia' refers to immigrants from Russia and former Soviet Union.

When Yugoslavia was hit by civil war and fragmentized in the early 1990s, immigrants were reported to be born in the new states of the Balkans, whether officially recognized or not. Immigrants of earlier cohorts, like migrant workers of the 1960s and 1970s, were registered as Yugoslavian, which included a majority of Serbs, but also quite a few Croatians and less frequently Bosnians. Statistics Sweden has made declared it possible for immigrants to change their record of country of birth so that it fits current geographical borders, and quite a few Bosnians and Croatians have done so. Nonetheless, a significant number of immigrants from these countries have not changed their country of birth in the records, which implies that Yugoslavia is more heterogeneous than Bosnia-Herzegovina or Croatia, including a mix of different ethnic groups dominated by Serbs.

Three sets of regression models are estimated: a multinomial logit model of the probability of being married exogamously to a native or non-native spouse, a logit model of the probability of being employed, and an OLS model of individual and household income. Apart from country of birth all regressions also control for age and age squared, educational level and population size or density of the settlement (*kommun*) (see Bevelander and Lundh, 2007). In the exogamy regressions, adaptation time in Sweden is measured by the time elapsed between immigration and marriage, rather than by time since immigration, because of the cross-section structure of the data where marriages taking place over a long period of time are included. We also for control age at immigration (and age at immigration squared) in these regressions to capture differences between immigrants arriving at an early age when learning Swedish and acquiring other Sweden-specific knowledge can be expected to be much easier. In the income and employment regressions time since immigration is used to measure adaptation time. The exogamy regressions control for the relative size of the immigrant group of opposite sex, which is a crucial control variable when studying relative, as opposed to absolute, exogamy. The employment and income regressions also control for the local unemployment and employment rates (at *kommun* level). The local unemployment rate is the share of the labour force in ages 20-59 that are unemployed or in labour market policy programs. Similarly, the local employment rate is based on the number of employed individuals divided by the total population aged 20-59. The unemployment rate expresses the short term influence of business cycles on the local labour market, while the employment rate indicates the labour market situation in the somewhat longer term, as it is dependent on the local distribution of employment between different sectors of the economy, the direction of

the local population's education and occupational structure and the risk of early retirement (Bevelander and Lundh, 2004, 2007) (see Table 1 for descriptive statistics).

Table 1 here

In order to establish if the importance of the determinants of intermarriage differs between different immigrant groups we also estimate a series of interaction models where time from immigration to marriage, education and settlement size are interacted with a grouped country variable and a type of immigrant variable. The country group variable is divided into seven categories: Nordic countries (Nordic), Western Europe and the United States (WE/US), Southern Europe (SE), Eastern Europe (EE), Latin America (LA), the Middle East and North Africa (ME/NA) and Asia (AS).² The immigration type variable distinguishes between countries from which most immigrants can be characterized as either labour migrants or refugees.³ The interaction models are estimated separately for each set of interactions. In the country group interactions, 'Nordic' is the reference category which means that the coefficients are the main effects in the regressions. For the other country groups the net effects are calculated as the main effect plus the interaction effect. Significance levels in the reference category (Nordic) refer to main effects, and thus to the test whether these coefficients are statistically significantly different from the reference category (0-4 years), while significance levels for the other country groups refer to the interaction effects. In other words the significance tests in all groups but 'Nordic' indicate whether the net effects are statistically significantly different from the corresponding effect in the Nordic group. For immigrant type, 'Labour' is the reference category and the estimates for 'Refugee' are net effects calculated in the same way as for the non-Nordic country groups.

Empirical results

Table 2 displays the multinomial logit estimates of exogamy, which indicates the impact of the explanatory variables on the transformed probability of exogamy with a native or exogamy with a non-native, compared to endogamy, which is the base outcome. It is quite clear that the likelihood of marrying a native is highest for immigrants from Western Europe (excluding Finland), Italy, Spain and the United States, while it is considerably lower for immigrants from the Balkans, Eastern Europe and developing countries outside Europe. However, the differences between the Balkans and Eastern Europe on the one hand and the Middle East, Asia, Africa and Latin America on the other, are not so pronounced. Immigrants from Finland also stand out as being considerably less exogamous, both with natives and non-natives, than other immigrants from Western Europe. This might be related to the strong language barrier between the two neighbouring countries.

Table 2 here

Thus, when controlling for age at immigration, time between immigration and marriage, education, settlement size and the relative size of the immigrant group of the opposite sex, we can identify two basic patterns of intermarriage: immigrants from Western Europe (excluding Finland), Spain, Italy, and the United States have, relatively speaking, high levels of intermarriage with natives, while immigrants from other parts of the world have low levels of intermarriage. There are, however, some exceptions from this general pattern: women born in Estonia, Russia, Colombia, Thailand, Philippines and South Korea have similar, or even higher, intermarriage rates (with natives) than the reference category (Danes). Even though our data does not contain information on individual motives for immigration, it is probable,

from what we know about immigration to Sweden, that this pattern is due to selective immigration related to adoptions or marriage.

These country differences fit rather well with the predictions of assimilation theory, since immigrants from Europe and the United States, especially those of Nordic, non-Finnish, origin, are culturally comparatively similar to the Swedish population. However, there is selection in both immigration and return migration, which makes such a direct link rather tenuous. In the case of immigrants from Western Europe (except Finland) and the United States, many have come to Sweden in the first place because they had a native partner whom they married in Sweden later on. There might also be selection through return migration because those who intermarried may have been less likely to move back home, and are thus more likely to be present in 2003.

Immigrants from outside Western Europe and the United States have typically come to Sweden as refugees or tied movers to refugees. Therefore the selection mechanisms through immigration and return migration are often weaker than for labour immigrants. Refugee immigrants seldom have connections to anyone in the native population before immigration, but sometimes to ethnic relatives and friends who have previously immigrated. Because of the situation in the home country from which they have fled, refugee immigrants have generally less opportunities to return to their country of origin. The rate of return migration of refugee immigrants is usually much lower than the corresponding rate for labour immigrants (Klinthäll, 2006). There may be different reasons why immigrants from the Balkans are more endogamous than other Western and Southern Europeans. One reason could be that the cultural distance is larger in terms of religion and language, another that a considerable proportion of the immigrants from former Yugoslavia are refugees or tied movers.

The estimates in Table 2 also show that longer time between immigration and marriage is associated with more exogamy, with natives as well as with non-natives. The relationship grows progressively stronger with longer time in Sweden. It is also somewhat more pronounced for women in cases of exogamy with a native, and for men in the cases of exogamy with a non-native. This is in accordance with the expectation of assimilation theory that cultural and socioeconomic integration is a gradual and lengthy process (Gordon, 1964; Alba and Golden, 1986; Liberson and Waters, 1988). Furthermore, we find a clear negative effect of age at immigration after controlling for time from immigration to marriage; an effect that gets weaker with higher ages at immigration. This could be interpreted as an additional positive effect of being young at immigration. Children more easily adapt to the cultural behaviour of the majority population and can also learn to speak the native language without an accent (which is very difficult for adult immigrants).

Table 3 here

Table 3 shows net effects of interactions between time from immigration to marriage and country group and immigrant type on exogamy with a native. Generally speaking, the gradually increasing positive relationship between time from immigration to marriage and native exogamy is visible for all country groups, except males from Western Europe and the United States, as well as for labour immigrants and refugees of both sexes. The amount of time spent in Sweden before marriage seems to have a stronger positive effect for refugees than for labour migrants. This is also what could be expected from an assimilation theory because adaptation time is more valuable for immigrant groups that are more culturally distant to the majority population. The deviant pattern for male immigrants from Western Europe and the United States might be explained by these immigrants being marriage migrants, who moved to Sweden in order to marry a native and most often did so in the first few years after immigration.

As is obvious in Table 2, more education is connected to exogamy. The effects are somewhat stronger for exogamy with a native than for non-native exogamy, but the picture is basically the same. The differences are also somewhat larger for women than for men. This is what could be expected from the perspective of human capital theory and assimilation theory. More educated people are less likely to live in ethnic enclaves and can be expected to meet more people of different origins (Furtado, 2006; Furtado and Theodoropoulos 2008). Hence, they are more exposed to the chances of exogamy. Immigrants with higher levels of education are also more prone to adopt foreign customs and cultures, and also have better language proficiency. Since there is a general educational assortative mating in the marriage market (see, e.g., Kalmijn, 1998; Mare, 1991; Henz and Jonsson, 2003), more educated immigrants are more likely to find a partner who is willing to trade similarities in ethnicity for similarities in education.

Table 4 reports net effects of educational level on intermarriage by country group and type of immigrant, calculated from interaction models in the same way as for time from immigration to marriage. The positive association between education and intermarriage seems to be valid for all country groups except for Asian women, but there are clear differences in its strength between groups. In terms of intermarriage, refugees benefit more from post-graduate education than labour immigrants. Looking at specific country groups we find the smallest educational differences among immigrants from Southern and Eastern Europe, and the greatest differences for Asian male immigrants. For female immigrants from Asia, more education seems to lower intermarriage, which probably is explained by marriage related immigration of lowly educated women. Interestingly, men from Latin America, Middle East and Northern Africa and women from Southern Europe have very strong positive effects of post-graduate education on intermarriage. Hence, it seems that it is more important for immigrants who are culturally distant to have very high education in order to intermarry, compared to immigrants who are culturally more proximate. One way of interpreting this is that culturally distant immigrants need to compensate with a greater educational assets in order to achieve a native-exogamous match in the marriage market.

Table 4 here

The coefficient for relative country group size of the opposite sex in Table 2 is negative indicating that larger immigrant groups are less exogamous, which clearly supports the idea that the availability of potential endogamous marriage partners affects the absolute exogamy rates, which was also the reason for including this variable. Another result in accordance with the expectations of social stratification theory is that immigrants in metro areas are more inclined to marry exogamously with non-natives than immigrants in other types of residential communities. The residential segregation in the bigger cities and the larger ethnic heterogeneity of the population both contribute to a higher exposure of individual immigrants to prospective partners from a different immigration background.

However, the demographic and residential structures of the larger cities do not seem to promote exogamy with natives. Immigrants of both sexes living in larger cities are less likely to be intermarried, while immigrants in rural areas are most likely to have native spouses. Immigrants in metro areas (Stockholm, Göteborg and Malmö) are least likely to be married to natives. Because we control for the relative size of the country group of the opposite sex, the lower risk of intermarriage with a native in metro areas is not due to relatively greater availability to prospective partners. It is possible, however, that the greater *absolute* size of the pool of prospective marriage partners of the same country of origin could be influential beyond the effect of *relative* group size, because it increases the number of possible endogamous matches, which, in turn, should facilitate the finding of a spouse with desired

characteristics in addition to country of origin. The lower intermarriage rates in metro areas could also partly be a result of selection in internal migration, because being married to a native might increase the likelihood of leaving the big cities for the countryside, or decrease the likelihood of moving in the opposite direction once settled in a small city or in the countryside.

Turning to the impact of settlement size by country group and immigrant type, Table 5 shows net coefficients calculated from interaction models on exogamy with a native. Overall, the patterns are quite similar between country groups as well as between labour immigrants and refugees. In most cases intermarriage is lower in metro areas and higher in rural areas, which further support the hypothesis that a greater absolute size of one's own country group in the bigger cities facilitates endogamous matching, net of the relative availability of potential partners. Especially for refugees, living in rural areas is also strongly associated with intermarriage, which most likely can be explained by the kind of selective internal migration patterns previously discussed.

Table 5 here

We now turn to the question how intermarriage is associated with the economic performance of immigrants. As has already been stressed, we are only able to indicate the association between intermarriage and employment and income, but not explicitly test the direction of causality (for rare examples of such attempts, see Kantarevic 2004; Meng and Gregory 2005; Meng and Meurs, 2006). For employment we estimate the transformed probability of being employed in November of 2003 for immigrants 20-59 years of age, using a logit model controlling for age, age squared, time since immigration, type of marital union (endogamous, exogamous with a native, exogamous with a non-native), settlement size, local employment rate, local unemployment rate, and country of birth. As previously mentioned, the reason for including both the unemployment and employment rate is that the former is assumed to capture local responses in the demand for labour associated with business cycles, while the latter also picks up variations associated with the structure of the local economy. For income we use two different measures: individual income and household income. The former is the total income from employment/self employment, unemployment benefits, sickness insurance benefits, pre-retirement benefits, social welfare benefits and labour market program benefits. Household income is the sum of the individual income of husband and wife. We only include individuals in the sample with income exceeding 30,000 SEK per annum (corresponding roughly to a so called base amount in the Swedish social insurance system). Models are estimated using OLS on log individual income and log household income. Table 6 displays the three sets of estimates for men and women separately.

Table 6 here

Looking first at the control variables, they generally have the expected effects. For both men and women, age, time since immigration and educational level are all positively associated with employment, as well as with individual and household income, the effect of age clearly being non-linear. Living in rural areas, or small towns, lowers the chances of employment and is associated with lower income for immigrant men, while for women only income seems to be negatively associated with living outside the bigger cities.⁴ As expected, immigrants in areas with higher employment rates are more likely to be employed and also have higher income, while a higher local unemployment rate is associated with a lower chance of immigrants being employed, and with lower incomes for immigrant women (cf. Bevelander and Lundh, 2007).

Turning to the association between intermarriage and economic performance of immigrants we find that being exogamously married to a native is associated with higher chances for immigrants of being employed. This pattern is quite similar for men and women. There appears to be no difference in the likelihood of employment between endogamously married immigrants and immigrants who were exogamously married with non-natives. Thus, the results indicate a basic association between marital integration (intermarriage with a native) and employment. It is also quite clear that being married to a native is associated with higher individual income of immigrants of both sexes. Just as in the case of employment, there is no association between individual income and non-native exogamy. Looking at total household income the pattern is similar but the association is now stronger for women than for men. Thus, there seems to be strong support for a connection between intermarriage and the economic performance of immigrants both in terms of income and employment.

These findings are consistent with a human capital explanation, implying that the human capital of a native spouse and access to native networks contribute to human capital accumulation of immigrants. It influences job opportunities and earnings of immigrants directly, and in the case of females, also through the distribution of income within the household. However, since we use cross sectional data we must be aware that these associations do not necessarily imply a causal relationship. The association between intermarriage and immigrant economic performance is obvious, but the mechanisms behind it may be more complicated than just a causal effect of intermarriage on labour market outcome.

Conclusion

In this article we have explored intermarriage patterns among immigrants in present day Sweden. The findings accords fairly well with predictions from theories of immigrants adaptation and marriage, although we have not aimed at causally test different hypotheses. In line with standard assimilation theory the length of the adaptation period in the host country before marriage is connected to higher intermarriage rates. The pattern is similar for most immigrant groups but the effects are stronger for refugees than for labour immigrants. A lower age at immigration also promotes intermarriage, which, in this perspective, could be explained by higher country-specific human capital, such as language proficiency and other Sweden-specific knowledge. In line with segmented assimilation theory, however, all immigrants do not adapt at the same rate. Even after controlling for age, age at immigration, time between immigration and marriage, education, settlement size, and the relative size of the immigrant group of the opposite sex, basically two intermarriage patterns emerge: immigrants from Western Europe (excluding Finland) and the United States have higher intermarriage rates than immigrants from the rest of the world. To a large extent, this also coincides with the distinction between labour and refugee immigrants. At least partly this could be explained by differences between different immigrant groups in terms of family cultures (family systems, kin relations, marriage customs, etc), differences that are highly persistent over time.

In accordance with exchange theory, but also with assimilation theory, educational level is associated with the type of marriage. With the notable exception of Asian women, better educated immigrants have higher intermarriage rates. For men the educational differences are smallest for immigrants from Southern and Eastern Europe, and largest for Asian and Latin American immigrants. For women the pattern is quite similar, except for the negative association between education and intermarriage for Asian women. Higher education facilitates learning Swedish and adapting to Swedish customs, but is also a characteristic that can be exchanged for native exogamy in the marriage market. The fact that refugees, and some of the geographically distant immigrants, showed particularly strong effects of post-graduate education further supports this interpretation, because they need to compensate for

their low-status origin by having more education to exchange. Another hypothetical explanation is that natives with higher education are more opened to intermarriage, which, given the tendency to educational homogamy, promotes intermarriage for highly educated immigrants.

Finally, in line with stratification theory we find a clear negative effect of the relative size of the pool of potential spouses of the same origin in the residential community. Moreover, immigrants living in metro areas are less likely to be married to natives than immigrants living in rural areas, at least partly because of a high availability of prospective marriage partners from the same origin. However, immigrants in metro areas are more likely to marry exogamously with an immigrant from a different country of birth than immigrants in less populated areas, which partly can be attributed to the ethnic heterogeneity of the population in metro areas.

Our results also indicate a strong association between intermarriage with natives and economic integration in terms of employment and income. Immigrants married to natives are more likely to have a job, and also have higher individual and household income. This pattern is similar for men and women, and, even though we have not been able to estimate causal effects, these associations between intermarriage and economic performance of immigrants are consistent with predictions from standard human capital theory, especially concerning language proficiency, and access to networks. At the time of immigration, the ‘sender country-specific’ part of the human capital of immigrants is being devalued, and during an initial adaptation period in the host country the immigrant needs to learn the native language, other ‘host country-specific’ skills and get access to native networks that facilitate job search and the occupational career. Marrying someone from the majority population might contribute to achieve this and thereby also to a faster integration into the host country. In this way the marriage pattern of immigrants may be a crucial factor in understanding immigrant integration.

Notes

¹ The second generation immigrants (children to foreign born immigrants) are not included in this figure. The number of children born in Sweden with one or two immigrant parents was about 0.8 million in 2003. The total number of people of foreign origin (including the second generation) was then 18 percent of the total population.

² Countries are grouped in the same way as in Table 1, except that the United States has been merged with Western Europe.

³ Countries have been defined as 'labour' or 'refugee' on the basis of the experience of the majority of migrants from the country. The group of non-refugee (labour) migrants come from: the Nordic countries, Western Europe, the United States, Italy, Spain, Croatia, Yugoslavia, Greece, India, Sri Lanka, South Korea, Thailand, China and the Philippines. Refugee migrants come from Bosnia-Herzegovina, Estonia, Poland, Romania, Hungary, Russia including the former Soviet Union, Czechoslovakia, Chile, Colombia, Peru, Morocco, Ethiopia, Lebanon, Syria, Turkey, Iraq, Iran, Afghanistan, and Vietnam. Classifying the former Yugoslav republics is problematic because of the opportunity to change country of birth from Yugoslavia to Bosnia-Herzegovina, Croatia or Serbia after the independence of these states. We assume that the majority of migrants with Yugoslavia and Croatia as their country of birth came before the Balkan Wars of the 1990s, while a majority of migrants listed as born in Bosnia-Herzegovina and Croatia are refugees. About 98 percent of immigrants from Bosnia-Herzegovina in the sample came after 1990, which supports this assumption. The corresponding figure for Yugoslavia was about 31 percent, and for Croatia 40 percent.

⁴ A more detailed analysis of the geographical dimension shows that there are big differences between different metro areas. The job opportunities for immigrants are much better in the Stockholm area than in Göteborg and Malmö (Bevelander and Lundh, 2007).

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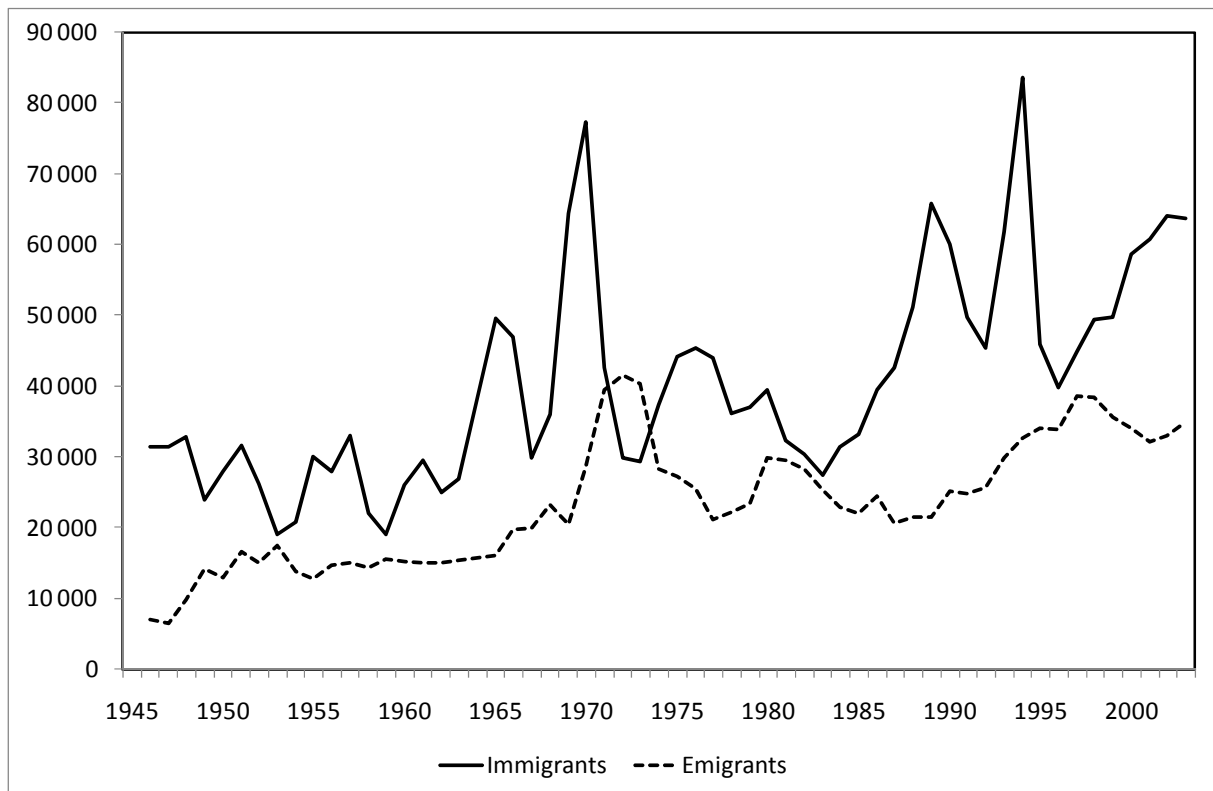
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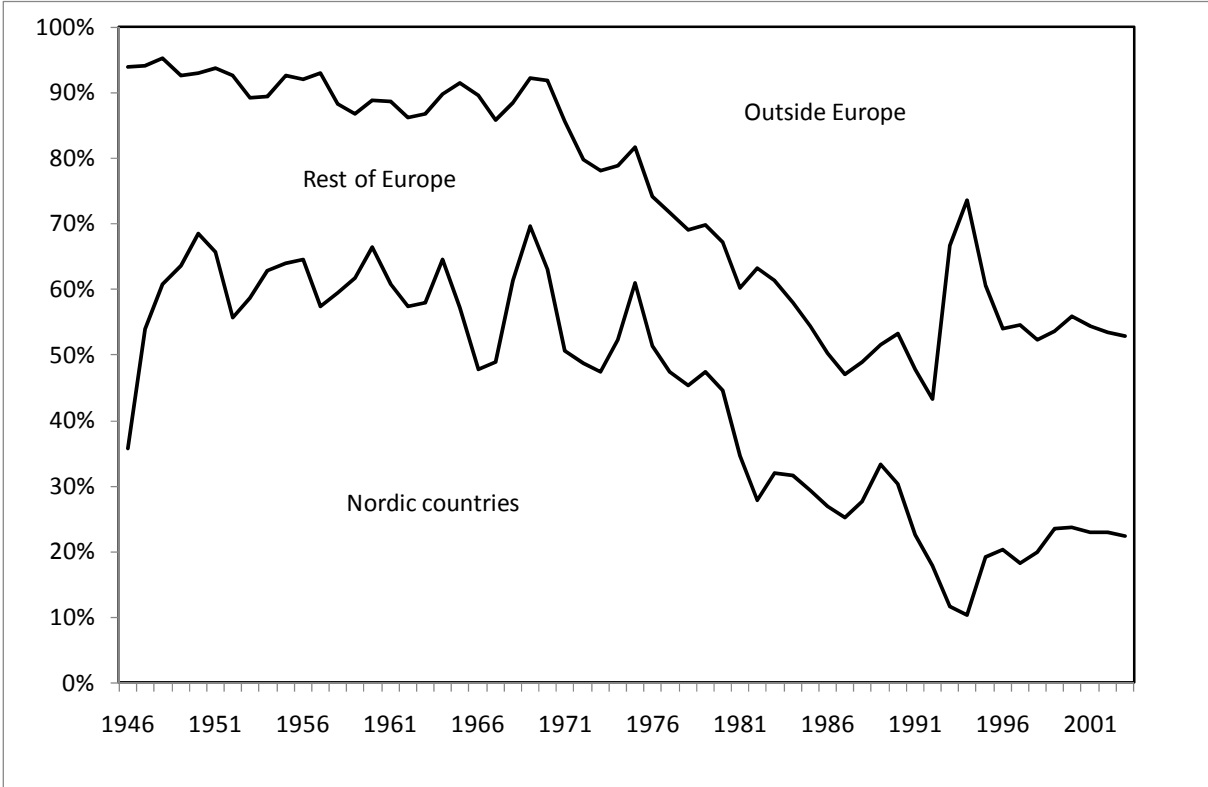
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Figure 1: Immigration and emigration 1946-2003.



Source: SOS Befolkningsrörelsen; SOS Folkmängdens förändringar; SOS Befolkningsförändringar; SOS Befolkningsstatistik.

Figure 2: Immigration by region of origin, 1946-2003.



Source: See Figure 1.

Table 1. Means of variables used in regressions. Foreign born aged 20-59 years in included countries, married in Sweden and present in 2003.

	Men	Women
Age	44.0	42.6
Age at immigration	19.5	19.1
Individual income (100 SEK)	2591.0	1809.2
% employed	85.6	82.1
% below 30000 SEK	6.2	11.0
Household income (100SEK)	4374.9	4537.3
% below 30000 SEK	1.6	1.6
Time from immigration to marriage		
0-4	0.292	0.358
5-9	0.197	0.178
10-14	0.134	0.127
15-19	0.108	0.105
20-24	0.104	0.100
25-	0.166	0.132
Marital union		
Endogamous	0.341	0.285
Exogamous-Swede	0.550	0.620
Exogamous-Non-Swede	0.109	0.095
Education		
Basic 0-8 years	0.094	0.084
Basic 9 years	0.121	0.102
High school 1-2 years	0.300	0.281
High school 3 years	0.161	0.160
University <3 years	0.122	0.147
University 3+ years	0.164	0.201
Post-graduate degree	0.024	0.012
Unknown	0.016	0.013
Settlement size		
Pop. 20000-50000	0.128	0.131
>200000 (metro areas)	0.497	0.487
Pop. 50000-200000	0.230	0.224
Pop. 10000-20000	0.097	0.099
Pop. <10000 excl rural	0.029	0.030
Rural areas (<7inh/km2)	0.019	0.030
Rel. country group size of opposite sex (%)	1.6	1.3
Local employment rate (%)	77.8	78.0
Local unemployment rate (%)	4.8	4.8
Country of birth		
<i>Nordic countries</i>		
Denmark (ref)	0.065	0.050
Finland	0.298	0.353
Norway	0.050	0.059
<i>Western Europe</i>		
France	0.010	0.006
The Netherlands	0.010	0.005
Germany	0.042	0.033
Austria	0.011	0.006
United Kingdom	0.039	0.016

<i>Southern Europe</i>		
Italy	0.013	0.005
Spain	0.008	0.006
Greece	0.022	0.009
Bosnia-Herzegovina	0.040	0.030
Yugoslavia	0.061	0.049
Croatia	0.006	0.005
<i>Eastern Europe</i>		
Estonia	0.001	0.003
Poland	0.029	0.058
Romania	0.008	0.010
Hungary	0.015	0.014
Russia	0.004	0.016
Czechoslovakia	0.009	0.009
<i>America</i>		
USA	0.023	0.018
Chile	0.023	0.023
Colombia	0.003	0.004
Peru	0.003	0.005
<i>Africa</i>		
Morocco	0.005	0.002
Ethiopia	0.006	0.006
<i>Middle East</i>		
Lebanon	0.026	0.016
Syria	0.019	0.015
Turkey	0.042	0.027
Iraq	0.032	0.020
<i>Asia</i>		
Afghanistan	0.001	0.001
Iran	0.051	0.032
India	0.007	0.009
Sri Lanka	0.002	0.005
Thailand	0.002	0.032
Philippines	0.002	0.015
Vietnam	0.003	0.004
China	0.004	0.008
South Korea	0.004	0.017
N	46 022	59 038

Source: Statistics Sweden, see text.

Table 2. Multinomial logit estimates of exogamy. Foreign born in included countries, married in Sweden and present 2003. (Endogamy is the base category).

	Men			Women		
	Exogamy Swedish born spouse Coef.	Exogamy non-Swedish born spouse Coef.		Exogamy Swedish born spouse Coef.	Exogamy, non non-Swedish born spouse Coef.	
Age	-0.016	-0.061 ***		-0.005	-0.070 ***	
Age^2	0.000 *	0.001 ***		0.000 **	0.001 ***	
Age at immigration	-0.122 ***	-0.053 ***		-0.077 ***	-0.044 ***	
Age at immigration^2	0.002 ***	0.001 ***		0.001 ***	0.001 ***	
Time from immig. to marriage						
0-4	ref.cat.	ref.cat.		ref.cat.	ref.cat.	
5-9	0.098 ***	0.266 ***		0.409 ***	0.298 ***	
10-14	0.299 ***	0.424 ***		0.619 ***	0.380 ***	
15-19	0.415 ***	0.480 ***		0.780 ***	0.340 ***	
20-24	0.637 ***	0.851 ***		1.068 ***	0.534 ***	
25-	0.921 ***	1.342 ***		1.296 ***	0.691 ***	
Education:						
Basic 0-8 years	ref.cat.	ref.cat.		ref.cat.	ref.cat.	
Basic 9 years	0.379 ***	0.262 ***		0.397 ***	0.426 ***	
High school 1-2 y.	0.488 ***	0.296 ***		0.826 ***	0.502 ***	
High school 3 y.	0.713 ***	0.425 ***		1.104 ***	0.713 ***	
University <3 y.	0.907 ***	0.584 ***		1.490 ***	0.943 ***	
University 3+ y.	1.078 ***	0.607 ***		1.722 ***	1.051 ***	
Post-graduate degree	0.892 ***	0.627 ***		1.565 ***	0.860 ***	
Unknown	0.321 ***	0.287 **		0.287 **	0.002	
Settlement size						
Pop. 20000-50000	ref.cat.	ref.cat.		ref.cat.	ref.cat.	
>200000 (metro areas)	-0.306 ***	0.131 **		-0.292 ***	0.319 ***	
Pop. 50000-200000	-0.115 ***	0.011		-0.090 **	0.108 *	
Pop. 10000-20000	-0.180 ***	-0.129		-0.260 ***	-0.186 **	
Pop. <10000 excl rural	-0.021	0.042		-0.128 *	-0.086	
Rural areas (<7inh/km2)	0.325 ***	0.130		0.673 ***	-0.256	
Country group size	-0.384 ***	-0.381 ***		-0.343 ***	-0.314 ***	
Country of birth						
<i>Nordic countries</i>						
Denmark	ref.cat.	ref.cat.		ref.cat.	ref.cat.	
Finland	-0.896 ***	-1.054 ***		-0.580 ***	-0.297 **	
Norway	0.682 ***	0.787 ***		1.099 ***	1.013 ***	
<i>Western Europe</i>						
France	1.753 ***	1.723 ***		1.416 ***	1.918 ***	
The Netherlands	0.602 ***	0.770 ***		0.085	0.357	
Germany	0.200 *	0.878 ***		0.236 **	1.058 ***	
Austria	1.397 ***	2.047 ***		0.510 *	1.472 ***	
United Kingdom	1.524 ***	1.535 ***		0.769 ***	0.772 ***	
<i>Southern Europe</i>						
Italy	1.370 ***	1.743 ***		-0.069	0.768 ***	
Spain	1.299 ***	1.842 ***		0.769 ***	1.206 ***	
Greece	-0.914 ***	-0.060		-2.270 ***	-1.269 ***	
Bosnia-Herzegovina	-3.394 ***	-0.828 ***		-3.834 ***	-0.702 ***	

Yugoslavia	-1.854 ***	-0.419 ***	-1.846 ***	-0.266 **
Croatia	-1.552 ***	0.476 ***	-1.884 ***	0.825 ***
<i>Eastern Europe</i>				
Estonia	-1.575 ***	-0.378	0.735 **	1.862 ***
Poland	-2.303 ***	-1.571 ***	-0.913 ***	0.093
Romania	-2.682 ***	-1.062 ***	-1.602 ***	0.000
Hungary	-1.422 ***	-0.242	-1.398 ***	-0.447 ***
Russia	-1.781 ***	-0.121	0.544 ***	1.495 ***
Czechoslovakia	-1.601 ***	-0.558 ***	-1.583 ***	-0.680 ***
<i>America</i>				
USA	2.463 ***	2.528 ***	2.582 ***	2.252 ***
Chile	-1.906 ***	-0.893 ***	-1.412 ***	-0.597 ***
Colombia	-0.732 ***	-0.012	0.089	0.643 **
Peru	-1.158 ***	0.016	-0.142	0.685 ***
<i>Africa</i>				
Morocco	-0.074	0.772 ***	-1.000 ***	0.753 ***
Ethiopia	-2.868 ***	-2.266 ***	-2.279 ***	-2.372 ***
<i>Middle East</i>				
Lebanon	-2.164 ***	0.381 ***	-2.621 ***	0.334 ***
Syria	-2.868 ***	0.449 ***	-2.745 ***	0.767 ***
Turkey	-2.894 ***	-0.578 ***	-3.253 ***	-0.552 ***
Iraq	-2.942 ***	-0.342 ***	-3.450 ***	-0.996 ***
<i>Asia</i>				
Afghanistan	-3.443 ***	-0.989 **	-3.590 ***	-0.492
Iran	-2.051 ***	-0.491 ***	-2.551 ***	-1.390 ***
India	-1.408 ***	-0.339	-0.897 ***	-0.647 ***
Sri Lanka	-2.329 ***	-0.947 ***	-0.554 ***	-0.682 **
Thailand	-1.850 ***	-0.914 **	3.077 ***	2.753 ***
Philippines	-1.965 ***	-0.699 *	1.903 ***	1.910 ***
Vietnam	-5.227 ***	-1.480 ***	-1.699 ***	-0.161
China	-3.884 ***	-1.208 ***	-1.132 ***	0.085
South Korea	-1.528 ***	-0.385	0.682 ***	0.688 **
Constant	3.436 ***	0.829 **	1.328 ***	0.213
N	46 022		59 038	
Chisq	12239		14055	
Overall p	0.0000		0.0000	

*p<0.1, **p<0.05, ***p<0.01

Source: See Table 1.

Table 3. Logit estimates of intermarriage by time between immigration and marriage in different country and immigrant groups. Net effects estimated by interaction models.

A. Men

	Country of birth							Type of immigrant	
	Nordic	WE/US	SE	EE	LA	ME/NA	AS	Labour	Refugee
Time from immig. to marriage									
0-4	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat
5-9	0.204 ***	-0.406 ***	-0.270 ***	0.107	0.096	0.006 *	-0.194 ***	-0.118 ***	0.088 ***
10-14	0.499 ***	-0.569 ***	0.402	0.441	0.176 *	-0.057 ***	-0.166 ***	0.167 ***	0.299 *
15-19	0.630 ***	-0.955 ***	0.557	0.664	0.205 **	-0.105 ***	-0.104 ***	0.260 ***	0.428 **
20-24	0.760 ***	-1.290 ***	0.422 ***	0.889	0.241 **	0.167 ***	0.204 ***	0.340 ***	0.693 ***
25-	0.877 ***	-1.371 ***	0.396 ***	0.763	0.721	0.778	0.688	0.462 ***	1.061 ***
N	18 997	6 234	6 935	3 034	1 362	5 981	3 479	31 263	14 759

B. Women

	Country of birth							Type of immigrant	
	Nordic	WE/US	SE	EE	LA	ME/NA	AS	Labour	Refugee
Time from immig. to marriage									
0-4	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat
5-9	0.473 ***	-0.054 ***	0.105 ***	0.053 ***	-0.173 ***	0.531	-0.493 ***	0.251 ***	0.135 **
10-14	0.570 ***	-0.134 ***	0.882 ***	0.410 *	0.201 ***	0.820 **	-0.607 ***	0.471 ***	0.611 **
15-19	0.672 ***	-0.078 ***	1.294 ***	0.781	0.211 ***	1.188 ***	-0.223 ***	0.640 ***	0.959 ***
20-24	0.802 ***	0.081 ***	1.911 ***	0.806	1.086	1.711 ***	1.167 **	0.914 ***	1.462 ***
25-	1.037 ***	0.346 ***	1.881 ***	1.190	1.402	2.524 ***	1.472 ***	1.154 ***	2.009 ***
N	27 299	4 983	6 093	6 476	1 892	5 086	7 209	41 645	17 393

*p<0.1, **p<0.05, ***p<0.01

Note: Coefficients for 'Nordic' and 'Labour' are base effects of interaction models. For other groups the coefficients are net effects, obtained by adding base effects and country group specific interaction effects. P-values in these categories also refer to interaction effects.

Table 4. Logit estimates of intermarriage by educational level in different country and immigrant groups. Net effects estimated by interaction models.

	Country of birth							Type of immigrant	
	Nordic	WE/US	SE	EE	LA	ME/NA	AS	Labour	Refugee
Education									
Basic 0-8 years	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat
Basic 9 years	0.340 ***	0.527	0.387	0.069	0.509	0.440	0.920 *	0.494 ***	0.475
High School 1-2 y.	0.335 ***	0.792 **	0.127 *	-0.013	0.630	0.692 **	1.575 ***	0.473 ***	0.777 ***
High school 3 y.	0.692 ***	0.788	0.089 ***	-0.005 ***	0.889	0.861	1.591 ***	0.740 ***	0.875
University <3 y.	0.746 ***	1.396 ***	0.441 **	0.306 *	1.109	0.874	1.748 ***	0.976 ***	1.103
University 3+ y.	0.969 ***	1.442 **	0.636 **	0.446 **	1.270	0.998	1.763 **	1.311 ***	1.228
Post-graduate	0.872 ***	0.722	0.939	0.403	2.935 **	1.489 *	1.368	0.849 ***	1.523 ***
Unknown	0.014	0.952 ***	0.093	-0.353	1.288 *	1.020 ***	1.753 ***	0.673 ***	0.900
N	18 997	6 234	6 935	3 034	1 362	5 981	3 479	31 263	14 759
B. Women									
	Country of birth							Type of immigrant	
	Nordic	WE/US	SE	EE	LA	ME/NA	AS	Labour	Refugee
Education									
Basic 0-8 years	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat
Basic 9 years	0.364 ***	0.779	0.494	0.083	0.437	0.315	-0.624 ***	0.327 ***	0.441
High School 1-2 y.	0.833 ***	1.234	0.803	0.166 ***	0.983	0.632	-0.978 ***	0.731 ***	0.932 **
High school 3 y.	1.228 ***	1.161	0.588 ***	0.178 ***	1.276	0.707 ***	-1.233 ***	0.955 ***	0.933
University <3 y.	1.506 ***	1.763	1.380	0.248 ***	1.617	1.277	-1.027 ***	1.381 ***	1.289
University 3+ y.	1.729 ***	1.800	1.726	0.507 ***	2.042	1.868	-0.940 ***	1.552 ***	1.706
Post-graduate	1.758 ***	1.580	2.583 **	0.606 ***	1.032	2.479	-1.180 ***	1.201 ***	1.872 ***
Unknown	0.108	1.483 ***	0.686 *	0.184	1.246 *	0.092	-0.739 ***	0.590 ***	0.398
N	27 299	4 983	6 093	6 476	1 892	5 086	7 209	41 645	17 393

*p<0.1, **p<0.05, ***p<0.01.

Note: Coefficients for 'Nordic' and 'Labour' are base effects of interaction models. For other groups the coefficients are net effects, obtained by adding base effects and country group specific interaction effects. P-values in these categories also refer to interaction effects.

Table 5. Logit estimates of intermarriage by settlement size and country group. Net effects estimated by interaction models.

A. Men

	Country of birth							Type of immigrant	
	Nordic	WE/US	SE	EE	LA	ME/NA	AS	Labour	Refugee
Settlement size									
Pop. 20000-50000	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat
>200000 (metro areas)	-0.335 ***	-0.344	0.462 ***	-0.601 *	-0.282	-0.479	-0.566	-0.290 ***	-0.316
Pop. 50000-200000	-0.084	-0.074	0.198 ***	-0.231	0.040	-0.360 **	-0.135	-0.143 ***	-0.121
Pop. 10000-20000	-0.292 ***	-0.105	0.059 ***	-0.103	0.212	0.709 ***	0.169 *	-0.136 ***	0.269 ***
Pop. <10000 excl rural	-0.177 *	0.074	0.171 *	0.417 *	0.302	0.983 **	0.006	0.061	0.317
Rural areas (<7inh/km2)	0.131	-0.035	1.566 ***	0.932	1.285	0.874 *	1.921 ***	0.361 ***	1.350 ***
N	18 997	6 234	6 935	3 034	1 362	5 981	3 479	31 263	14 759

B. Women

	Country of birth							Type of immigrant	
	Nordic	WE/US	SE	EE	LA	ME/NA	AS	Labour	Refugee
Settlement size									
Pop. 20000-50000	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat	ref.cat
>200000 (metro areas)	-0.159 ***	-0.220	0.054 **	-0.905 ***	-0.366	-0.613 ***	-1.319 ***	-0.326 ***	-0.544 ***
Pop. 50000-200000	-0.024	0.049	-0.093	-0.298 **	-0.032	-0.409 **	-0.781 ***	-0.128 ***	-0.314 ***
Pop. 10000-20000	-0.350 ***	0.059 **	0.232 ***	-0.213	0.318 **	0.496 ***	0.179 ***	-0.196 ***	0.160 ***
Pop. <10000 excl rural	-0.212 ***	-0.085	0.386 ***	0.038	-0.262	1.019 **	0.123	-0.005	0.196
Rural areas (<7inh/km2)	0.766 ***	0.470	1.767 **	1.479 *	1.441	0.639	1.043	0.927 ***	1.303 *
N	27 299	4 983	6 093	6 476	1 892	5 086	7 209	41 645	17 393

*p<0.1, **p<0.05, ***p<0.01.

Note: Coefficients for 'Nordic' and 'Labour' are base effects of interaction models. For other groups the coefficients are net effects, obtained by adding base effects and country group specific interaction effects. P-values in these categories also refer to interaction effects.

Table 6. Regression estimates of employment and income. Foreign born in included countries, 20-59 years. married in Sweden and present 2003.

	Men						Women					
	Employment		Individual income		Household Income		Employment		Individual income		Household Income	
	Logit		OLS		OLS		Logit		OLS		OLS	
Age	0.153	***	0.053	***	0.060	***	0.174	***	0.066	***	0.071	***
Age^2	-0.002	***	-0.001	***	-0.001	***	-0.002	***	-0.001	***	-0.001	***
Time since immigr.												
0-4												
5-9	0.782	***	0.139	***	0.105	***	0.873	***	0.131	***	0.074	***
10-14	1.051	***	0.161	***	0.129	***	1.181	***	0.195	***	0.092	***
15-19	1.187	***	0.209	***	0.192	***	1.329	***	0.269	***	0.148	***
20-24	1.399	***	0.230	***	0.219	***	1.412	***	0.294	***	0.163	***
25-29	1.457	***	0.238	***	0.213	***	1.479	***	0.281	***	0.154	***
30-	1.779	***	0.305	***	0.259	***	1.639	***	0.306	***	0.194	***
Marital union												
Endogamous												
Exogamous-Swede	0.266	***	0.057	***	0.084	***	0.284	***	0.033	***	0.118	***
Exogam.-Non-Swede	0.027		0.004		0.001		0.035		-0.008		-0.040	***
Education:												
Basic 0-8 years												
Basic 9 years	0.108	**	0.016		0.032	***	0.238	***	0.069	***	0.044	***
High school 1-2 y.	0.205	***	0.068	***	0.066	***	0.698	***	0.124	***	0.103	***
High school 3 y.	0.536	***	0.169	***	0.153	***	0.882	***	0.186	***	0.168	***
University <3 y.	0.533	***	0.224	***	0.210	***	0.802	***	0.249	***	0.250	***
University 3+ y.	0.829	***	0.478	***	0.408	***	1.338	***	0.442	***	0.374	***
Post-graduate degree	1.202	***	0.715	***	0.596	***	1.488	***	0.780	***	0.611	***
Unknown	0.035		0.240	***	0.206	***	0.132		0.088	***	-0.006	
Settlement size												
Pop. 20000-50000												
>200000 (metro areas)	0.070		0.074	***	0.091	***	0.239	***	0.086	***	0.107	***
Pop. 50000-200000	-0.048		0.017	**	0.031	***	0.055		0.015	**	0.035	***
Pop. 10000-20000	0.006		0.033	***	0.025	***	-0.030		-0.002		-0.001	
Pop. <10000 excl rural	-0.124		-0.002		-0.008		-0.089		-0.020		-0.028	**
Rural areas (<7inh/km2)	-0.350	***	-0.102	***	-0.075	***	0.043		-0.022	*	-0.089	***
Commune empl. rate	0.041	***	0.011	***	0.011	***	0.027	***	0.004	***	0.008	***
Commune unemp rate	-0.056	***	0.000		-0.001		-0.042	***	-0.006	***	-0.006	***
Country of birth												
<i>Nordic countries</i>												
Denmark												
Finland	0.190	***	-0.003		0.025	***	0.268	***	0.044	***	0.029	***
Norway	0.126	*	0.046	***	0.055	***	0.131	**	0.028	**	0.029	**
<i>Western Europe</i>												
France	0.446	***	-0.026		0.053	**	-0.355	**	-0.042		-0.018	
The Netherlands	0.662	***	0.019		0.040	*	0.142		0.009		0.048	
Germany	0.187	**	-0.039	**	-0.017		-0.035		-0.028	*	-0.012	
Austria	0.482	***	-0.019		0.002		0.120		0.048	*	0.038	

United Kingdom	0.211	**	-0.063	***	-0.011		-0.028	0.013	0.024	
<i>Southern Europe</i>										
Italy	-0.101		-0.135	***	-0.097	***	0.045	-0.040	0.025	
Spain	-0.228	*	-0.112	***	-0.020		0.006	0.027	0.013	
Greece	-0.793	***	-0.245	***	-0.156	***	-0.876	***	-0.085	***
Bosnia-Herzegovina	0.456	***	-0.071	***	-0.020		0.298	***	0.046	**
Yugoslavia	-0.091		-0.126	***	-0.079	***	-0.327	***	-0.031	**
Croatia	-0.120		-0.052	*	-0.003		-0.326	**	-0.031	
<i>Eastern Europe</i>										
Estonia	-0.294		-0.037		-0.082		-0.387	**	-0.104	**
Poland	-0.234	***	-0.123	***	-0.076	***	-0.324	***	-0.055	***
Romania	-0.062		-0.103	***	-0.049	*	-0.197	*	-0.004	
Hungary	-0.169		-0.096	***	-0.059	***	-0.283	***	-0.041	*
Russia	-0.613	***	-0.247	***	-0.209	***	-0.800	***	-0.148	***
Czechoslovakia	-0.074		-0.041		0.009		-0.227	*	-0.009	
<i>America</i>										
USA	-0.332	***	-0.129	***	-0.039	**	-0.581	***	-0.062	***
Chile	0.050		-0.153	***	-0.097	***	-0.182	**	-0.078	***
Colombia	-0.245		-0.151	***	-0.099	**	-0.353	**	-0.088	**
Peru	-0.286		-0.310	***	-0.212	***	-0.529	***	-0.218	***
<i>Africa</i>										
Morocco	-0.827	***	-0.337	***	-0.228	***	-0.514	***	-0.132	**
Ethiopia	-0.084		-0.138	***	-0.124	***	-0.258	*	-0.087	***
<i>Middle East</i>										
Lebanon	-0.535	***	-0.352	***	-0.355	***	-0.900	***	-0.153	***
Syria	-0.440	***	-0.391	***	-0.368	***	-0.866	***	-0.157	***
Turkey	-0.312	***	-0.352	***	-0.290	***	-0.607	***	-0.132	***
Iraq	-0.724	***	-0.443	***	-0.455	***	-0.995	***	-0.239	***
<i>Asia</i>										
Afghanistan	-0.128		-0.168	**	-0.267	***	-0.922	***	-0.320	***
Iran	-0.304	***	-0.236	***	-0.176	***	-0.557	***	-0.119	***
India	-0.395	**	-0.220	***	-0.146	***	-0.439	***	-0.108	***
Sri Lanka	0.005		-0.088		-0.099	**	-0.169		-0.097	***
Thailand	-0.031		-0.146	***	-0.145	***	0.053		-0.051	***
Philippines	0.068		-0.128	**	-0.044		-0.113		-0.102	***
Vietnam	0.216		-0.173	***	-0.225	***	-0.020		-0.040	
China	-0.214		-0.312	***	-0.287	***	-0.725	***	-0.132	***
South Korea	-0.517	**	-0.106	**	-0.052		-0.174	*	-0.042	*
Constant	-5.523	***	5.390	***	5.696	***	-6.280	***	5.117	***
N	46 022		43 165		43 165		59 038		52 444	
Chisq/F	3004		155		213		6051		194	
Overall p	0.0000		0.0000		0.0000		0.0000		0.0000	
R-squared			0.206		0.276				0.206	

*p<0.1. **p<0.05. ***p<0.01

Note: Estimates of individual and household income only for individuals/households with annual income above 30.000 SEK.

Source: See Table 1.