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Acculturation Identity and Educational Attainment

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Abstract

This paper explores the identity formation of a cohort of students with immigrant backgrounds in Sweden and the consequences of identity for subsequent educational attainment. Unique for this study is that identity is defined according to a two-dimensional acculturation framework based on both strength of identity to the (ethnic) minority and to the (Swedish) majority culture. Results indicate that integrated men are associated with significantly higher levels of education than assimilated men. No differences in educational attainment are found between the assimilated and the integrated for women. These results put into question the premise of oppositional identities, i.e., a trade-off between ethnic identity and educational achievement, among immigrants in Sweden.

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1. Introduction

Recently, the concept of identity has received considerable interest among economists and several papers have studied ethnic identity and its consequences for such labor market outcomes as employment and earnings (Battu *et al*., 2007; Constant *et al*., 2006b; Constant and Zimmerman 2007; Mason, 2004a; Nekby and Rödin, 2007; Pendakur and Pendakur, 2005; Walters *et al*., 2007). Few studies however, have analyzed the association between ethnic identity and education among immigrants and their offspring.[1] Cross-cultural psychologists have recognized that school adaptation for immigrant families is an important part of the overall adaptation to host country societies with important consequences for subsequent labor market outcomes and social mobility (Phinney *et al*., 2001; Berry, 1997). Identity may be an important part of school adaptation as it is highly correlated to individual well-being. A strong ethnic identity has been found, in the psychology literature, to be of central importance for individual well-being, self-esteem and sense of belonging to the majority (host country) culture (Berry and Sam, 1997; Phinney, 1990; Phinney *et al*, 2001; Rumbaut, 1994; Virta and Westin, 1999). At the same time, the economics literature has raised concerns that a strong affiliation to certain identities may lead to a trade-off between for example group belonging and school achievement implying that ethnic identity may be negatively associated with educational outcomes for immigrants.[2]

Ethnic identity, the degree to which individuals with immigrant backgrounds associate themselves to their ethnic background culture, is often modeled as a one-dimensional process where individuals either choose to identify with the majority (host) culture or to their minority

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[1] Numerous studies examine the determinants of ethnic and/or national identity including the role of education, see for example Constant et al. (2006a), Constant and Zimmermann (2007), Manning and Roy (2007), Zimmermann et al. (2006), Zimmermann (2007). Few, if any, studies in economics however have turned the question around and studied the role of immigrant identity on educational outcomes.
[2] See Akerlof and Kranton (2002) for a theoretical overview of this trade-off as well as studies on racial identity and education presented in Section 2.

(home or background) culture. In other words, individuals are assumed to adopt so-called oppositional identities where a stronger identification to the majority culture goes hand-in-hand with a weaker identification to minority cultures. The cross-cultural psychology literature however, has been critical to the one-dimensional framework for identity arguing that immigrants and their offspring can feel an affinity for both home and host cultures (Berry, 1980, 1984, 1997, 2005; Phinney, 1990; Ryder *et al*., 2000). As such, a two-dimensional model was developed allowing individuals, for example, to simultaneously feel a strong affinity for majority and minority cultures. Such a framework allows for a more flexible analysis of the correlation between identity and educational attainment. Using unique survey data on a cohort of students with immigrant backgrounds, matched to longitudinal register data on educational outcomes; this study analyzes how identity, defined within the two-dimensional acculturation framework, may influence educational attainment.

Results presented here indicate that integrated men are associated with significantly higher levels of education than assimilated men despite controls for early educational outcomes, such as type of secondary school and average grades, which may influence both self-assessed identity and subsequent educational attainment. No differences in education levels are found between integrated and assimilated women. These results hold for both first and second-generation immigrants. However, among those born in Sweden with immigrant backgrounds, a complete lack of identity, marginalization, is found to be associated with significantly lower levels of education.

The remainder of the paper is as follows: Section 2 briefly discusses the prior literature on identity and education. Section 3 describes the data and empirical set-up. Results are presented in Section 4 and concluding remarks in Section 5.

2. Identity and Education: A Brief Overview

Akerlof and Kranton (2000) formalize the concept of identity in a model that includes identity in the utility function, allowing for interdependence between individual identity and economic behavior. In their model, individuals derive utility from the category (in-group) to which they belong, i.e., from how well they fit into that category, but also from how well others follow the prescribed behavior of their specified category. The Akerlof and Kranton model therefore captures the concept of oppositional identities described above or at least how it is commonly interpreted. Members of the minority group reject the minority culture in favor of the majority culture or, vise versa, reject the majority culture in favor of the minority culture in order to conform to own group norms.[3] These norms can however change over time.[4]

The economics literature on identity and education has focused primarily on the effect of racial identity on school performance theorizing a negative relationship between the two. Similar to many studies on ethnic identity, the underlying assumption in these studies is that there is a trade-off between racial cohesion and academic achievement (Akerlof and Kranton, 2002; Austen-Smith and Fryer, 2005; Cook and Ludwig, 1997; Ferguson, 2001; Fryer and Torelli, 2005; Fordham and Ogbu, 1986; Pattacchini and Zenou, 2006). This so-called oppositional culture hypothesis is originally attributed to Fordham and Ogbu (1986) who argued that institutional discrimination lowered the returns to education for black Americans, thereby starting a process in which black students viewed educational achievement as a white norm. Black students who put effort into education were harassed for "acting white" and rejected by their peer group. The oppositional identity hypothesis postulates that social norms

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[3] Note that taste-based discrimination (Becker, 1957) is consistent with the Akerlof and Kranton model. The disutility for an employer or fellow employees from a minority worker could stem from loss of identity.

[4] See also the discussion in Akerlof and Kranton (2002) on identity and schooling and how the concept of identity can help to explain differences in educational outcomes not attributable to differences in school resources.

among the minority group force members of the group to choose sides, i.e., to either ignore educational achievement and be accepted by peers, or put effort into education, "acting white", and thereby loose acceptance from the peer group.[5]

The context in which racial identity in the US exists, has been shaped, and influences investment in education and labor market outcomes differs in many respects from the intercultural context in which immigrants and natives may interact in western societies.[6] As such, the concepts of "oppositional identities" and "acting white" should not automatically be transferred to studies exploring the interaction between natives and immigrants. Immigrants and their offspring must relate to at least two different cultures, the majority culture of the host country and their own ethnic background culture (minority or home culture). The psychology literature discusses this interaction in terms of acculturation. Acculturation was originally defined as "those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups" (Redfield, Linton and Herskovits, 1936, p.149). In other words, acculturation refers to the individual level changes, both culturally and psychologically, in preferences, attitudes, habits, customs and more, coming from intercultural contact.

The dimensionality of acculturation is debated in the psychology literature. The early literature did perceive cultural identification as oppositional, modelling acculturation as a one-dimensional linear process where individuals either reject their ethnic minority culture in favor of the majority culture (assimilate) or reject the majority culture in order to maintain close ties to their ethnic minority culture (separate from the majority society). Due to the

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[5] For economic studies on racial identity, see also Darity, Mason and Stewart (2004), Mason (2004b) Bodenhorn and Ruebeck (2003) and the references therein.
[6] Not the least of which is due to the long historical oppression of African-Americans in the US.

perceived shortcomings of the one-dimensional model, for example a growing awareness that many immigrants and their children simultaneously identify to the minority and the majority culture, several cross-cultural psychologists argued for the use of multidimensional acculturation models (Berry, 1980, 1984, 1997, 2005; Phinney, 1990; Phinney et al., 2001, Ryder et al. 2000, Sanchez and Fernandez, 1993). Berry (1997) developed a two-dimensional acculturation framework for how individuals relate to two cultures.[7] Within this framework, four distinct acculturation identities are defined for how individuals simultaneously relate to two cultures. The first, *integration*, implies a strong sense of belonging to ethnic background cultures together with a strong majority identity. *Assimilation* implies a strong majority identity but a weakened tie to ethnic origins while *separation* is the opposite, a strong affiliation to ethnic background cultures but weak ties to the majority culture. Finally, *marginalization* implies weak ties to both ethnic origins and the majority culture. Note that the two-dimensional framework of identity is not restrictive in the sense that it also incorporates the one-dimensional possibilities, namely the identities separated and assimilated.[8]

How the host country educational system relates to the cultural identity of immigrants and ethnic minorities can have potential repercussions for school adjustment and learning among children. School adjustment is particularly important for immigrant children as education is an important vehicle for adapting to the host country with potentially vital consequences for future social mobility. Recent studies within cross-cultural psychology find that a bicultural or integrated identity, with strong ties to both home and host cultures, is conducive to school

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[7] Note that the two dimensional model treats the degree of identification to the majority culture as a separate concept from the degree of identification to the minority culture. The determinants of one may not be the determinants of the other.

[8] Sen (2006) points out that identity to home and host cultures are only two of many possible overlapping and competing identities. People belong to numerous social groups based on residence, origin, gender, class, politics, religion, sports, music, etc., none of which can alone describe a individual's identity. Here focus is on two particular dimensions of identity that have been heavily debated both in the academic and public sphere.

performance. Integrated parents appear to motivate children more than assimilated parents (Portes and Rumbaut, 1990) and immigrant children who maintain a strong ethnic identity, instead of assimilating, have been associated with stronger school performance (Olneck, 1995). In a Swedish context, Virta and Westin (1999) examine the psychosocial adjustment of adolescents with immigrant backgrounds and varying acculturation identities confirming a positive relationship between feeling integrated and psychological well-being as well as school adjustment.[9] For several groups of students, being marginalized or assimilated was associated with negative outcomes.[10] In general, a strong ethnic identity has been found to be of central importance for individual well-being, self-esteem and such concepts as sense of belonging and adaptation to the majority culture (Berry and Sam, 1997; Phinney, 1990; Phinney *et al*, 2001; Rumbaut, 1994; Virta and Westin, 1999).

Within economics, the link between cultural identity and education has only been studied indirectly through the examination of the determinants of a strong ethnic background identity and/or a strong majority identity. Zimmerman *et al.* (2006) study the ethnic self-identification of migrants in Germany as well as identification to the German majority culture. Results from this paper indicate that human capital acquired in origin countries lead to lower identification with the majority culture. Education acquired post-migration, in the host country, does not affect attachment to the majority culture. Constant *et al.* (2006a), in addition to a one-dimensional concept of identity, also employ a two-dimensional concept to study the identity of immigrants in Germany. Their definition of identity is thus very similar to the four

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[9] Two dependent variables were used in estimation, psychological well-being (self-esteem, life satisfaction and psychological symptoms) and social adjustment (school adjustment and behavior problems). Acculturation identity was based on five domains of life: cultural traditions, language, marriage, social activities and friends. Participants in this study were adolescents (mean age 15.5 years) with Finnish, Kurdish, Latin American, Turkish and Vietnamese backgrounds and a control group of Swedish adolescents. Both first and second-generation immigrants were included in the study.

[10] For certain groups of immigrants, assimilation (Finns, Turks, Kurds and Vietnamese) and marginalization (Finns and Turks) was associated with negative outcomes. Neither socio-economic status nor immigrant status (first or second) was found to be important for the well-being or school adaptation.

acculturation strategies proposed by Berry (1997) and used in our study. Young migrants are found to assimilate and integrate the most. Immigrants with higher education acquired prior to immigration are found to integrate but not assimilate.

To our knowledge, no studies have analyzed the role of ethnic identity on educational attainment. In this study, cultural identity is modelled in a two dimensional manner taking into account attachment to both home and host cultures in order to empirically examine the how acculturation identity may influence educational attainment. As such, we can answer questions of the type; do individuals who identify only with the majority culture differ in terms of educational attainment from those who identify with both the majority and minority culture? Given the importance of minority identity for individual well-being, it is important to determine the role of identity for educational success, here in terms of investment in higher education, not only in order to develop appropriate educational policies that foster learning and skill development in schools but also to better understand the role of ethnic identity in a multicultural society.

3. Data and Empirical Set-up

3.1. Data

The data used in estimation stems from the *Follow-up Surveys of Pupils* from Statistics Sweden (SCB). This is a series of surveys based on a sample of 16,060 students who graduated from nine-year compulsory school in the spring of 1988 in Sweden. The surveys were conducted in 1990, 1992 and 1995. In this study, we use the only survey available today for estimation, the 1995 survey, which was conducted 7 years after graduation from compulsory school when the majority of respondents were 23 years of age. The 1995 survey samples the entire population of students with immigrant backgrounds, defined as having one

or both parents born abroad, who belong to the 1988 cohort, as well as a control group of students with Swedish backgrounds. The survey data provide unique information on a number of interesting questions concerning ethnic identity and identification with the majority culture. At our request, the 1995 survey was merged to the LOUISE dataset for the years 1995-2002.[11] LOUISE contains detailed register information on personal and demographic characteristics, education, income and employment for all individuals 16 years and older registered as living in Sweden at the end of each year. As such, we are able to follow our cohort of students until 2002 when the majority of the sample are 30 years of age and presumed to have completed post-compulsory school educations. The sample estimated on consists of 2,855 individuals with immigrant backgrounds (first and second-generation).[12]

The majority of immigration to Sweden during the post WW2 period has been and continues to be from other Nordic countries, primarily from Finland. Formally, a common Nordic labor market was established in 1954 but migration legislation was, until the late 1960s, non-restrictive and aimed at attracting foreign labor to an expanding export industry. In 1954 Sweden signed the Geneva Convention opening for refugee migration. Immigration before the mid 1970's consisted primarily of labor market immigration from Nordic and European countries. After the mid 1970's, refugee immigration from primarily Non-European countries increased greatly and today accounts, together with immigration due to family re-unification, for approximately 50 percent of the total immigration to Sweden. The sample used in this study consists of individuals born in Sweden with immigrant parents and individuals born abroad who migrated to Sweden before the age of 16 (i.e. before graduation from compulsory school in 1988). As such the sample used in estimation is not representative of today's

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[11] LOUISE is the Swedish acronym for Longitudinal Database for Education, Income and Employment provided by Statistics Sweden.
[12] Dropped from estimation are 1,328 individuals who did not respond to survey questions concerning identity. Due to systematic non-response from the original population surveyed, all estimations are weighted in order to be representative of the 1988 cohort of students.

distribution of persons with immigrant backgrounds. Most noticeably, immigrants in the sample are characterized by relatively long duration of residence in Sweden as well as a low age at entry.[13] 48 percent of the respondents in the sample estimated on are foreign-born.

3.2. Empirical Set-up

The first stage of the empirical analysis estimates separately the probability of ascribing to each acculturation identity (integrated, assimilated, separated and marginalized). In particular, and controlling for an extensive set of other explanatory variables, we focus on how early education influences acculturation identity. The idea is to see how education acquired prior to survey responses on identity, in the 1995 survey, affect self-assessed acculturation identity. In the second stage of the analysis, the role of acculturation identity on final attained levels of education in 2002 is examined controlling for a number of other variables thought to influence educational attainment.

The measure for acculturation identity is based on answers to survey questions aimed at measuring degree of identification with the Swedish majority culture and identification with ethnic background cultures. Two questions are asked: To what degree do you feel affinity to Swedish culture? To what degree do you feel affinity to your original background culture? Answers to these questions are coded into a four-level scale based on the answer options available (completely, partially, little, not at all). An individual is classified into one of four mutually exclusive acculturation identities described above, i.e., *assimilation*, *integration*, *separation* and *marginalization* as depicted in Figure 1. Individuals that completely or partially identify with the Swedish majority culture but little or not at all to their original (ethnic) minority culture are categorized as *assimilated*. At the other extreme, those that

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[13] On average, foreign-born survey respondents had lived in Sweden for 15 years in 1995 when they were 23 years of age.

identify with the minority culture but do not identify with the majority culture are categorized as *separated*. Individuals that identify both with the majority and minority culture are categorized as *integrated* and finally, individuals that do not identify with either culture are categorized as *marginalized*.[14]

-- Figure 1 here --

Figure 2 shows the distribution of acculturation identity by national background for all individuals in the sample. The majority within each aggregated national group identify themselves as integrated. Those with Finnish and East European backgrounds have the highest share in the assimilation category. Those with African backgrounds have the lowest share of assimilated and, together with individuals with Asian backgrounds, the highest shares in the separated category. The highest share of marginalized individuals is found among those with non-European (African, Asian and South American) and East European backgrounds. Note that the Non-European group also has the highest share of individuals born abroad.[15] Figure A1 in the Appendix shows the same distribution based on the immigrant sub-sample. The distribution remains remarkably similar to that for the entire sample which is a likely consequence of the fact that our sub-sample of immigrants are characterized by a relatively low age at immigration and, by 1995, a relatively long duration of residence in Sweden.

--Figure 2 here--

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[14] Note that it is the majority population that to a large degree determines the identity alternatives available to immigrant minorities in society. If the majority population deems some minority cultures as more compatible with the majority culture than others, then identification to both the minority and majority culture will be facilitated for some groups and hampered for others. In other words, the cultural preferences or cultural familiarity of the dominant group influences the cost and benefits for different minority groups of identifying with the majority and minority culture and therefore to what degree expressions of identification are accepted.

[15] Ninety-three percent of respondents with non-European backgrounds were born abroad and immigrated before 1988. Forty-eight percent of all respondents with foreign backgrounds are immigrants.

Linear probability models estimating the probability of belonging to respective acculturation identity are estimated controlling for a number of individual and demographic variables as well as early education, i.e., educational outcomes prior to survey responses on identity questions in the 1995 survey. In general, identity equations are based only on information available prior to 1995, the year of the survey. Measures of early education include a dummy variable for whether or not the individual has completed secondary school (high-school or gymnasium) by 1995, and the type of secondary school (none, vocational or theoretical) students began in 1988, upon completion of compulsory school.[16] Also included in estimation is a dummy variable indicating whether or not the individual has begun university studies in 1995. At this time, survey respondents are 23 years of age and not likely to have completed university educations. It is therefore of interest to control for the initiation of university educations in 1995 rather than completion of university educations.

As self-assessed acculturation identity may vary according to country or region of origin, estimations also control for national background. National background is coded into seven categories based on own country of birth if born abroad or parents' country of birth if born in Sweden. These categories are Finland, other Nordic countries (Norway and Denmark), Western Europe, Eastern Europe, Asia, Africa and South American.[17]

Other control variables used in the estimations are; gender, marital status, residence in a big city, household socioeconomic status, immigrant status (born abroad) and duration of

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[16] Theoretical secondary schools are to a larger degree than vocational secondary schools considered to be college preparatory.

[17] Information on country of birth (own or parents) is aggregated in the dataset by Statistics Sweden prohibiting a finer categorization of national background. Note that Turkey and Cyprus are coded as Asia in this dataset and that Central America and Caribbean countries sort under North America. Only three respondents have North American backgrounds and are therefore dropped from estimation. In addition, individuals with one native and one foreign born parent (225 persons)as well as individuals with mixed foreign backgrounds, i.e., parents born in different regions (108 persons) are dropped from estimation.

residence in Sweden if born abroad.[18] Finally in order to get a rough measure of the influence of residential segregation on the probability of belonging to respective acculturation identity, the share of foreign born in the individual's residential neighborhood (1995) is also controlled for in estimation.[19]

In the second stage of the analysis, level of education in 2002 is estimated using an ordered logit model as the dependent variable is a four-level categorical variable measuring highest completed level of education in 2002. Level of education is defined at the one-digit level based on register information from the LOUISE database. The four levels are: completion of compulsory school (9-10 years), secondary school (gymnasium or high school), short post-secondary school (less than 2 years of post-secondary school) or university (post-secondary school educations longer than 2 years including Ph.D. degrees). Control variables in education equations include the variables described above for the identity equations but updated for the time-varying characteristics until the year 2002.

Identification issues:

Identity formation in general is one of the primary psychosocial tasks of adolescence and perceived as a relatively stable characteristic after the formative years of adolescence (Erikson, 1968). The formation of identity in this literature has been modelled as a progression, where an individual through a period of exploration, goes from the unexplored attitudes of childhood to an achieved ethnic identity at the end of adolescence (Phinney, 1989). Self-perceived acculturation identity can therefore be viewed as a relatively stable characteristic for adults who have had long-term contact with the majority population. For

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[18] See Appendix, Table A1 for complete description of variables used in estimation.
[19] The share of foreign born in the residential neighborhood is measured at the most disaggregated geographic unit available. No information is available on shares with same ethnic or national background.

immigrants, identity formation may be a more continuous on-going process as affinity to ones own background culture and to the majority culture is likely to be related to duration of residence in the host country. It is therefore difficult to argue that the acculturation identity stated in 1995 at age 23 is an exogenously determined characteristic in education equations. In this study, survey respondents are either born in Sweden with immigrant backgrounds or immigrated at a relatively early age implying a greater possibility that individual identity has developed into a reasonably stable characteristic by the age of 23.

As we are interested in examining the effect of identity on level of education, it is important to control for how early education influences these factors. For example, children with immigrant backgrounds that do poorly in compulsory school may be more inclined to shun the majority society and/or embrace ethnic background cultures, leading to a separated or marginalized identity. Likewise, residential segregation, which may be correlated to identity, can imply attendance at compulsory schools with a high proportion of immigrant students which has been found to negatively affect educational outcomes.[20] The effect of cultural identity on educational attainment in 2002 may then simply be picking up the effect of initial educational success or failure on later investments in higher education.

As noted above, early education (prior to survey responses on identity in 1995) can be controlled for in estimation. In addition, information on grades in secondary school is available for a sub-sample in the 1988 cohort that proceeded directly from compulsory school to secondary school. As a check of robustness, it is therefore possible to control for a teacher-assessed measure of early educational outcomes (grades) on final levels of education in order

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[20] See for example Szulkin and Jonsson, (2005) and Szulkin, (2006) who find that students in Swedish schools with a high proportion of immigrants have lower grades all else equal and controlling for selection into these schools and Grönqvist (2006) who finds that residence in ethnic enclaves lowers the probability of pursuing higher education among second-generation immigrants.

to determine to what degree early educational success or failure is driving reported results for our variables of interest, acculturation identity.

Nonetheless, there are a number of other characteristics and attributes correlated to acculturation identity that may be driving results in education equations. Early labor market history, parental educational levels and employment history in the host country labor market, size and concentration of the ethnic community, experiences of discrimination, ethnic capital and a number of other factors may be correlated with self-assessed acculturation identity. Many of these characteristics can be controlled for in estimation, others are unobservable. As such the coefficient estimates for respective acculturation identity in education equations cannot be interpreted as causal effects but should rather be seen as conditional correlations.[21]

Descriptive statistics are presented in Table 1 by acculturation identity. In 2002, the integrated have the highest proportion with completed university educations and the marginalized the lowest proportion. The marginalized also have the highest proportion with compulsory school educations only in 2002. In terms of early education indicators, the marginalized have the lowest proportion that began theoretical secondary schools in 1988 and the integrated the highest proportions. The integrated also have the highest proportion that began university studies in 1995.

Women are hugely underrepresented in the marginalized category and immigrants overrepresented in the separated category; only 27 percent of the marginalized are female

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[21] Appropriate instrumental variable estimation allows for a causal interpretation of coefficient estimates. We argue however that the instruments commonly used in the literature such as marriage to a member of ones own ethnic group and participation in ethnically related clubs/activities are correlated to only one aspect of our acculturation measure, namely (ethnic) minority identity, and are therefore inappropriate as instruments for acculturation identity which incorporates both minority and majority identity. These instruments are also unlikely to fulfil the requirement of random assignment and excludability.

while almost 70 percent of the separated are immigrants. The separated and marginalized have larger proportions that live in major urban areas and greater shares of immigrants in their residential neighbourhood in 1995 than the assimilated and integrated.

-- Table 1 here --

4. Empirical Results

4.1. Determinants of Acculturation Identity

Linear probability models are estimated separately for each acculturation identity (integrated, assimilated, separated and marginalized) focusing in particular on the associations between early education and identity probabilities. Estimations are based on information from 1995 or earlier in order to use only the information available prior to survey responses concerning identity in the 1995 survey. Results, reported in Table 2, indicate that completion of secondary school as well as initiation of university educations in 1995 are positively associated with being integrated. Initiation of university educations is also found to be significantly associated with lower probabilities of being marginalized. Education variables are otherwise uncorrelated with acculturation identity probabilities.

In terms of national background, West Europeans, Africans and South Americans are found to be associated with significantly lower probabilities of being assimilated than the reference group, Finnish. This results is perhaps not surprising giving the close cultural ties between Sweden and Finland (as well as the rest of Scandinavia). There are however no systematic differences by nationality in the probability of being integrated. All nationalities with the exception of other Nordic have higher probabilities of being separated than the Finnish. East

Europeans and Asians have higher probabilities of being marginalized than the Finnish, all else equal.

-- Table 2 here --

Other interesting results include that women are more likely to be integrated and less likely to be marginalized than men. There are no systematic differences in acculturation identity by marital status, children or immigrant status. The latter is a likely consequence of our sample where the foreign-born are characterized by relatively low age at entry and long duration of residence. Note also that in 1995, the cohort estimated on is 23 years of age, implying low variation in marital status and children. Duration of residence is found to be negatively associated to the probability of being separated but is otherwise uncorrelated to acculturation identity probabilities. Residence characteristics appear to be more important for acculturation identities. Living in a major urban area is associated with a higher probability of being marginalized. Likewise, the proportion of immigrants in the residential neighbourhood is associated with higher probabilities of being integrated, separated and marginalized (small but significant) but lower probabilities of being assimilated.

Separate estimations by gender are reported in Table A2-A3. The association between identity and education for men is quite similar to that reported above for the entire sample (standard errors are however larger resulting in fewer significant relationships). Interestingly, no association is found between identity and education for women. Living in a major urban area is an important determinant of identity for men, increasing the probability for a marginalized identity and decreasing the probability for an integrated identity. Furthermore, living in an area with a high share of immigrants significantly increases the probability for a separated and

a marginalized identity for women but not for men. Also, for women, having children is associated with higher probabilities of a marginalized identity.

4.2. Level of Education and Acculturation Identity

Ordered logit estimations on level of education are estimated focusing on correlations between education and acculturation identity. Included in all estimations are controls for national background, marital status, children, immigrant status, duration of residence, residence in a major urban area and share of foreign-born in the local residential area (1995). Estimations are based on final levels of education in 2002 (four levels) when the cohort estimated on is 30 years of age and likely to have completed post-compulsory school educations.

Results reported in Table 3 indicate that among men, the integrated are associated with significantly higher levels of education than the assimilated. As the integrated and the assimilated have in common strong identification to majority cultures but varying attachment to ethnic background cultures, this result implies that given a strong identification to the majority culture, a strong ethnic identity is associated with higher educational achievement. Estimations are shown with and without controls for type of secondary school education initiated in 1988 (none, vocational or theoretical) as differences in early education may have influenced self-assessed identity. Correlations between level of education and acculturation identity are largely unaffected by the inclusion of controls for secondary school education.

Among women, no differences are found between the integrated and the assimilated regarding level of education. The marginalized are however associated with significantly lower levels of education in comparison to the assimilated. This difference disappears when type of

secondary school initiated in 1988 is controlled for implying that there are no systematic differences in educational attainment between acculturation identities for women once the effect of early education on identity is controlled for.

-- Table 3 here --

As expected, going straight to secondary schooling after compulsory school graduation is associated with higher levels of education for both men and women, especially theoretical secondary school educations. There are few differences in educational attainment by national background. However, having children before the age of thirty is associated with lower levels of education as is being foreign born. Residence in urban areas is positively associated with educational attainment while the proportion of immigrants in the residential area is associated with lower levels of education.

Controlling for Socio-Economic background

Results in Table 3 may reflect differences in socio-economic background. Information on household socioeconomic status in 1990 is available for a sub-sample of 2,391 individuals, defined according to the socio-economic status of the parent with the highest socio-economic level. This sub-sample is characterized by a smaller proportion with Non-European backgrounds and a larger proportion with Nordic backgrounds. Estimations with and without controls for socio-economic background on this sub-sample yield results indicating that integrated men are associated with a smaller but positive (weakly significant) advantage over assimilated men in attained levels of education. See Table A4 in Appendix. This difference however disappears when socio-economic background is controlled for in estimation (the coefficient remains positive but is no longer significant). For women, we find that the

marginalized are associated with significantly lower levels of education in comparison to the assimilated even when socio-economic background is controlled for in estimation.

Controlling for Grades in Secondary School

Results reported in Table 3 may reflect early differences in educational performance which are correlated to identity formation and therefore to self-assessed identity in 1995. For example, those that do well in school may feel greater affinity towards the host country culture and therefore to a greater degree self-identify with the assimilated or integrated. Likewise those that do poorly in school may feel alienated from the majority culture and develop a stronger attachment to background cultures. As such it is important to control for a better measure of differences in earlier educational outcomes in estimation.

The probability of attaining a university degree in 2002 is therefore estimated on a sub-sample of the cohort with completed secondary educations in 1995 for which we have information on average final grades in secondary school. Table A5 in the Appendix reports results of linear probability models using the same specifications as above, including for comparative purposes on this sub-sample, specifications with and without average final grades. Interestingly, even when controlling for grades in secondary school integrated men are associated with significantly higher probabilities of attaining university degrees than assimilated men. Integrated men have 12.5 percentage point higher probabilities of completing university degrees than assimilated men controlling for grades in secondary school. Marginalized men are found to be associated with lower probabilities of attaining university degrees than assimilated men, a difference that becomes insignificant with the inclusion of grades as a control variable. No systematic differences between acculturation identity and attained university degrees are found for women, regardless of whether grades

are controlled for or not. These results clearly indicate that a bicultural orientation is conducive to educational attainment among immigrant men.

Initiating a Post-Secondary Education in 1995

One may also worry that self assessed acculturation identity stated in the 1995 survey may not be a stable characteristic over the seven years until 2002, the year for which final levels of education are estimated. As another check of robustness, estimation of the likelihood of commencing a university education in 1995, the year of the survey, is also estimated. In 1995, the cohort estimated on is 23 years of age and few have completed university degrees, hence the choice of dependent variable. Results reported in Table A6 in the Appendix show that integrated men are again associated with higher probabilities of initiating a university education in 1995 and marginalized men with significantly lower probabilities in comparison to assimilated men. Both of these differences become insignificant with the inclusion of type of secondary school as a control variable in estimation. Taken together, reported results imply that although there are no systematic differences by acculturation identity in the commencement of university educations, integrated men are more likely to complete university educations than the assimilated.[22] Again, no systematic differences in the initiation of university degrees by acculturation identity are found for women.

Differences by (Aggregated) National Background

The associations between acculturation identity and education may vary between immigrant groups. Ultimately the degree to which immigrants can express their ethnic identity hinges on the social acceptance of these expressions among the host country society. Due to long standing relations and geographic proximity, a strong Finnish identity is unlikely to be seen as

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[22] Indeed estimation of the probability of having attained a university degree in 2002, controlling for initiation of a university education in 1995 (not shown) confirms that integrated men are associated with 8.4 percentage point higher probabilities of completing university degrees in comparison to assimilated men.

threatening for the Swedish majority population while the expression of a strong ethnic identity among many non-European countries may be socially frowned upon in school and in the labor market. As such it is of interest to see how the correlations between identity and education vary between national backgrounds.

Results of ordered logit estimation on level of education for the entire sample but separately by (aggregated) national background are presented in Table 4.[23] National background is aggregated to three basic regions, Nordic, European and Non-European.[24] Earlier reported results that integrated men are associated with higher levels of education than assimilated men appear to be driven by European men. Integrated European men are significantly more likely to have higher levels of education than assimilated European men. Marginalized Nordic men are associated with lower levels of education than assimilated Nordic men. No systematic differences in level of education by acculturation identity are found for women, irrespective of national background, or for Non-Europeans.[25]

-- Table 4 here --

Differences by Immigrant Status

Finally, it is of interest to see if there are any differences in results by immigrant status (noting that all immigrants in the sample arrived before the age of 16). Estimates on level of

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[23] The model estimated is equivalent to that shown in Table 3, i.e. the full specification including controls for type of secondary school.

[24] National background is aggregated into three groups due to problems concerning small sample sizes with finer categorizations of nationality.

[25] Including in estimation controls for socioeconomic background (not shown) for the sub-sample of respondents with this information does not alter reported results for men with the exception that marginalized Nordic men no longer significantly differ from assimilated Nordic men. For women, interesting differences are noted that are primarily due to sample effects. Nordic integrated women are associated with higher levels of education than assimilated Nordic women while marginalized European women and separated Non-European women are associated with lower education levels than respective reference group. These differences are mitigated but do not disappear with controls for socio-economic background.

education by immigrant status are reported in Table 5. For men, the integrated are associated with higher levels of education regardless of immigrant status. Among men born in Sweden with immigrant background, the marginalized are found to have significantly lower levels of education relative to the assimilated. The same result is found for women born in Sweden. Marginalized women born in Sweden are associated with significantly lower levels of education than assimilated women born in Sweden.[26]

-- Table 5 here --

5. Conclusions

The purpose of this study has been to investigate the potential implications of varying identification to home and host cultures on educational attainment on a cohort of students with foreign backgrounds, either born in Sweden with foreign-born parents or foreign-born with relatively long duration of residence in Sweden.

The results presented in this study indicate that integrated men are associated with significantly higher levels of education than assimilated men. These results hold despite controls for early educational outcomes which may influence both self-assessed identity and later educational attainment. The assimilated and the integrated have in common a strong attachment to the majority culture but varying attachment to ethnic background cultures. Given a strong attachment to the majority culture, a strong attachment to ethnic background cultures therefore appears to foster the pursuit of higher education. These results are in line

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[26] Including in estimation controls for socioeconomic background (not shown) for the sub-sample of respondents with this information yields results indicating that integrated foreign-born men no longer differ from assimilated male immigrants (the coefficient is positive but no longer significant). Higher levels of education for integrated immigrant men are therefore in part due to the higher socioeconomic status of their parents. Likewise, the difference for marginalized men born in Sweden is explained by differences in socio-economic background. Marginalized women born in Sweden however continue to indicate lower levels of education despite controls for socio-economic background.

with studies indicating a positive association between bicultural orientations and educational adaptation. No systematic differences in level of education by acculturation identity are found for women.

What mechanisms may lie behind higher educational attainment for the integrated? Families that foster a bicultural orientation may have stronger educational backgrounds. Indeed some estimations clearly indicate that part of the effect is due to the higher socio-economic level of parents to the integrated. Integrated families may also encourage reading and writing in home languages in addition to host country language skills both within the realms of the family and through school programs offering home language instruction. Studies in linguistics emphasize the importance of both home and host languages skills for cognitive ability and school achievement.[27] Finally, results may reflect higher levels of well-being among the integrated noted in numerous studies within cross-country psychology.

Our results provide one example showing that the premise of oppositional identities, i.e. a trade-off between ethnic identity and education may not be relevant for immigrants in all settings. A strong ethnic identity in combination with a strong identification to the majority society is associated with higher levels of education for men and no differences for women in comparison to those that identify only with the majority society. At the same time, there are insignificant differences between the assimilated and the separated in terms of educational attainment. As such, it is neither strength of ethnic identity alone, nor strength of national identity alone which is found to be most conducive to educational attainment but rather a bicultural orientation. Likewise, a complete lack of identity, marginalization, is associated with lower educational attainment for second-generation immigrants, regardless of gender.

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[27] See for example Cummins (1976, 1984), Diaz (1985), García-Vázquez et al. (1997), Hakuta (1986), Hakuta and Diaz (1985), Lee (1996) and the references therein.

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Figure 1: The definition of acculturation identities

	To what degree do you feel affinity to Swedish culture?	
	Completely or Partially	Little or Not At All
Completely or Partially	Integrated	Separated
Little or Not At All	Assimilated	Marginalized

Left axis label: To what degree do you feel affinity to your original background culture?
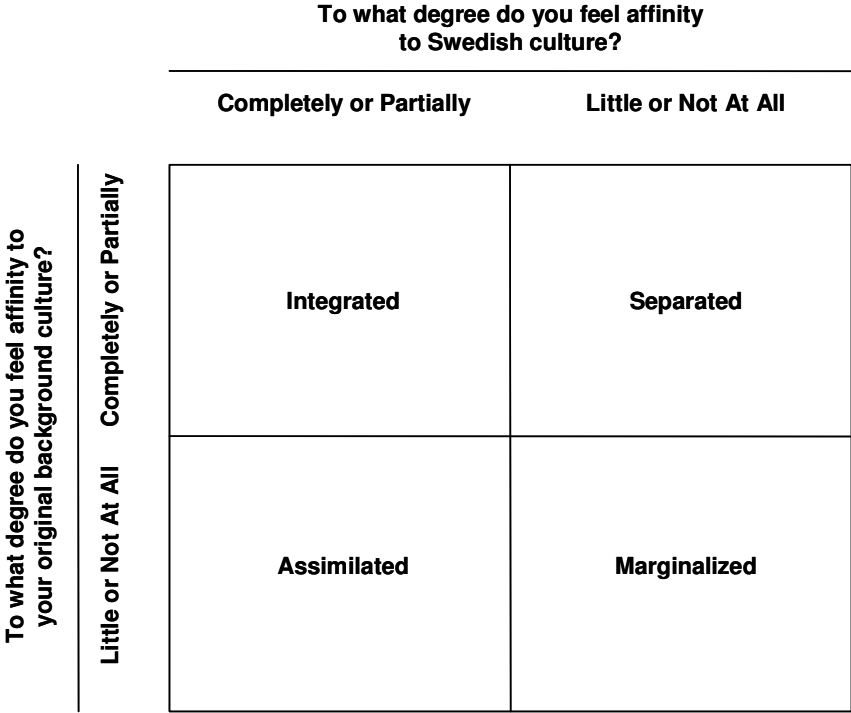
Figure 2: Distribution of acculturation identities in background groups

■ Integrated ■ Assimilated ■ Separated ■ Marginalized
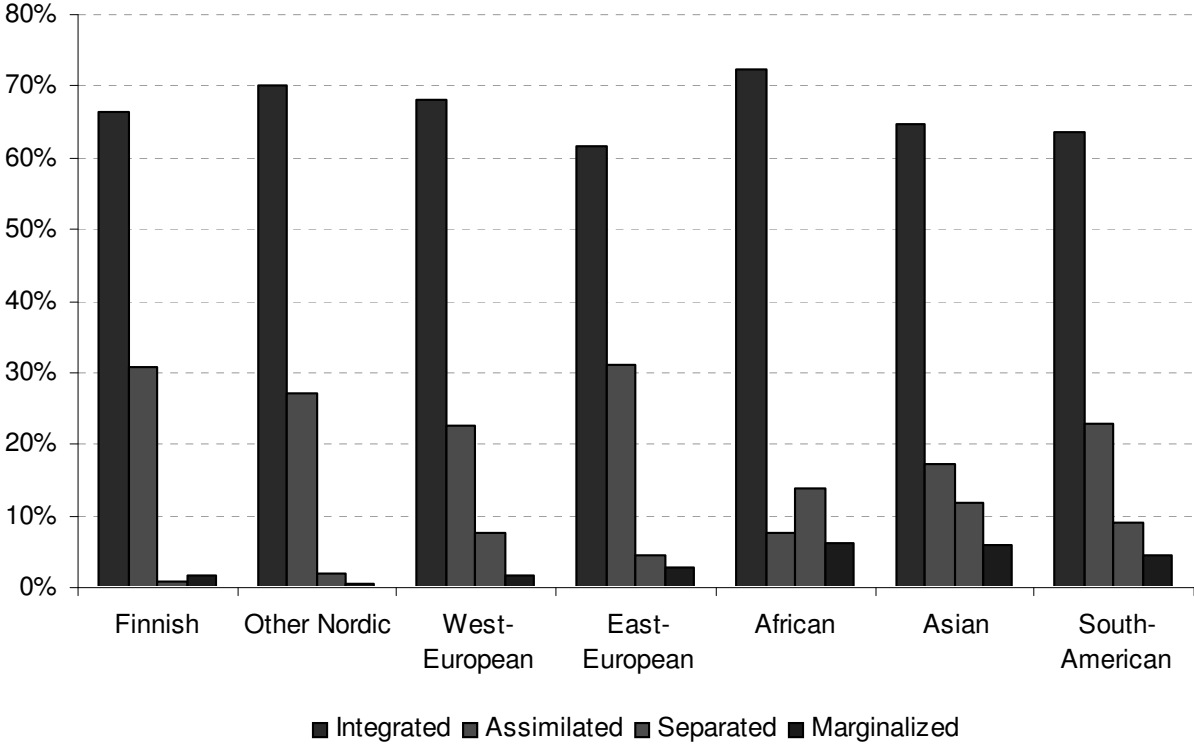
Table 1: Sample Means, by Acculturation Identity (2002)

	Integrated	Assimilated	Separated	Marginalized
Level of completed education (2002):				
Compulsory school	0,10	0,13	0,19	0,26
Secondary school	0,56	0,61	0,57	0,54
Post secondary school, <2 years	0,06	0,08	0,06	0,12
University	0,28	0,19	0,18	0,07
Educational Background :				
Accepted to a vocationary secondary school (1988)	0,31	0,35	0,28	0,35
Accepted to a theoretical secondary school at 1988	0,39	0,33	0,28	0,18
Not accepted to a secondary school (1988)	0,30	0,32	0,44	0,47
Commenced university (1995)	0,22	0,16	0,19	0,08
Completed secondary school (1995)	0,76	0,70	0,66	0,61
Demographic Characteristics:				
Female	0,52	0,48	0,45	0,27
Children	0,44	0,43	0,47	0,38
Married	0,54	0,53	0,58	0,54
Born abroad	0,41	0,35	0,68	0,51
Duration of residence (foreign-born)	26,65	27,31	23,09	24,91
Residence in major urban area	0,34	0,31	0,44	0,46
Share of foreign born in the local area	0,18	0,16	0,23	0,25
No of obs	1862	750	154	89

Note: Weighted sample means

Table 2: Determinants of Acculturation Identity (1995)

	Assimilated	Integrated	Separated	Marginalized
Educational Background:				
Commenced University (1995)	-0.046	0.065*	-0.002	-0.017**
	(0.039)	(0.039)	(0.011)	(0.009)
Completed Secondary School (1995)	-0.050	0.066*	-0.010	-0.006
	(0.037)	(0.039)	(0.013)	(0.011)
Accepted to Theoretical Secondary School (1988)	-0.020	0.044	-0.006	-0.019
	(0.046)	(0.048)	(0.011)	(0.012)
Accepted to Vocational Secondary School (1988)	0.014	-0.013	0.004	-0.004
	(0.038)	(0.040)	(0.011)	(0.011)
National Background (ref: Finish):				
Other Nordic	-0.029	0.010	0.018	0.001
	(0.047)	(0.049)	(0.015)	(0.009)
West European	-0.097*	0.040	0.044**	0.014
	(0.053)	(0.061)	(0.018)	(0.019)
East European	0.022	-0.073	0.025***	0.027*
	(0.048)	(0.048)	(0.009)	(0.016)
African	-0.195***	0.035	0.115**	0.045
	(0.054)	(0.074)	(0.048)	(0.031)
Asian	-0.090**	-0.040	0.088***	0.043***
	(0.045)	(0.047)	(0.019)	(0.014)
South American	-0.046	-0.046	0.065***	0.028
	(0.045)	(0.050)	(0.023)	(0.017)
Demographic Characteristics:				
Female	-0.023	0.051*	-0.001	-0.027***
	(0.028)	(0.028)	(0.008)	(0.010)
Married	0.014	-0.019	0.014	-0.009
	(0.032)	(0.031)	(0.009)	(0.010)
Children	-0.002	-0.013	-0.002	0.016
	(0.040)	(0.038)	(0.012)	(0.016)
Foreign-born	0.017	0.026	-0.024	-0.019
	(0.037)	(0.038)	(0.015)	(0.012)
Duration of Residence	0.004	0.001	-0.004**	-0.001
	(0.003)	(0.004)	(0.002)	(0.001)
Major Urban Area	0.034	-0.061	0.006	0.021**
	(0.041)	(0.040)	(0.010)	(0.009)
Proportion Immigrants in Residential Area	-0.005***	0.003**	0.001*	0.001*
	(0.001)	(0.001)	(0.000)	(0.000)
No. of observations	2855	2855	2855	2855

* denotes significance at 10%; ** significance at 5% and *** significant at 1% level.

Note: Linear probability estimations on the probability of belonging to each acculturation identity respectively. Robust standard errors in parentheses.

Table 3: Level of Education and Acculturation Identity (2002)

	(1) Men	(2) Men	(3) Women	(4) Women
Acculturation Identity (ref: Assimilated):				
Integrated	0.553***	0.521***	0.323	0.168
	(0.175)	(0.199)	(0.208)	(0.181)
Separated	0.031	0.022	-0.301	-0.359
	(0.317)	(0.320)	(0.312)	(0.329)
Marginalized	-0.543	-0.256	-0.630*	-0.563
	(0.341)	(0.285)	(0.378)	(0.390)
Type of Secondary School (ref: No/Incomplete secondary school)				
Theoretical Secondary school		2.720***		2.437***
		(0.413)		(0.226)
Vocational secondary school		1.243***		0.956***
		(0.353)		(0.192)
National Background (ref: Finish)				
Nordic except finland	-0.050	0.187	-0.026	-0.165
	(0.268)	(0.280)	(0.324)	(0.346)
West European	0.146	0.289	0.326	-0.469
	(0.363)	(0.503)	(0.403)	(0.513)
East European	0.422	0.236	0.443*	0.063
	(0.266)	(0.281)	(0.247)	(0.217)
African	0.639	1.027**	-0.104	-0.227
	(0.428)	(0.497)	(0.485)	(0.430)
Asian	-0.127	-0.142	0.289	-0.030
	(0.267)	(0.297)	(0.234)	(0.250)
South american	-0.125	-0.071	0.086	-0.260
	(0.289)	(0.300)	(0.324)	(0.332)
Demographic Characteristics:				
Married	0.360	0.373	0.110	0.056
	(0.264)	(0.322)	(0.198)	(0.202)
Children	-0.903***	-0.669*	-0.650***	-0.456**
	(0.300)	(0.358)	(0.217)	(0.230)
Foreign-born	-0.322*	-0.676***	-0.201	-0.499**
	(0.182)	(0.190)	(0.225)	(0.236)
Duration of Residence	-0.055***	-0.127***	0.006	-0.060**
	(0.018)	(0.023)	(0.022)	(0.025)
Major Urban Area	0.437**	0.326	0.622***	0.698***
	(0.187)	(0.217)	(0.190)	(0.174)
Proportion Immigrants Residential Area	-0.036***	-0.028**	-0.032***	-0.029***
	(0.011)	(0.012)	(0.006)	(0.006)
No of Observations	1427	1427	1428	1428

* denotes significance at 10%; ** significance at 5% and *** significant at 1% level.
Note: Weighted oredered logit estimations on three levels of education. Robust standard errors in parentheses.

Table 4: Level of Education and Acculturation Identity by (Aggregated) National Background (2002)

	(1) Men Nordic	(2) Men European	(3) Men Non-European	(4) Women Nordic	(5) Women European	(6) Women Non-European
Acculturation Identity (ref: Assimilated):						
Integrated	0.391	0.916***	0.359	0.426	-0.224	0.025
	(0.372)	(0.309)	(0.275)	(0.261)	(0.322)	(0.292)
Separated	-0.106	0.612	-0.191	-0.840	-0.023	-0.512
	(0.858)	(0.488)	(0.432)	(1.109)	(0.768)	(0.382)
Marginalized	-1.169*	-0.650	0.358	-0.856	-0.926	-0.369
	(0.672)	(0.432)	(0.364)	(0.617)	(0.677)	(0.697)
No. of observations	551	411	465	614	409	405

* denotes significance at 10%; ** significance at 5% and *** significant at 1% level.

Note: Ordered logit estimation on three levels of education (secondary school, short post-secondary, university). Robust standard errors in parentheses. Included in all estimations are controls for national background (within aggregated groups), duration of residence in Sweden (immigrants), marital status, children, residence in a major urban area, type of secondary education initiated (incomplete, vocational or theoretical) and share of foreign-born in the local residential area (1995).

Table 5: Level of Education and Acculturation Identity by Immigrant Status (2002)
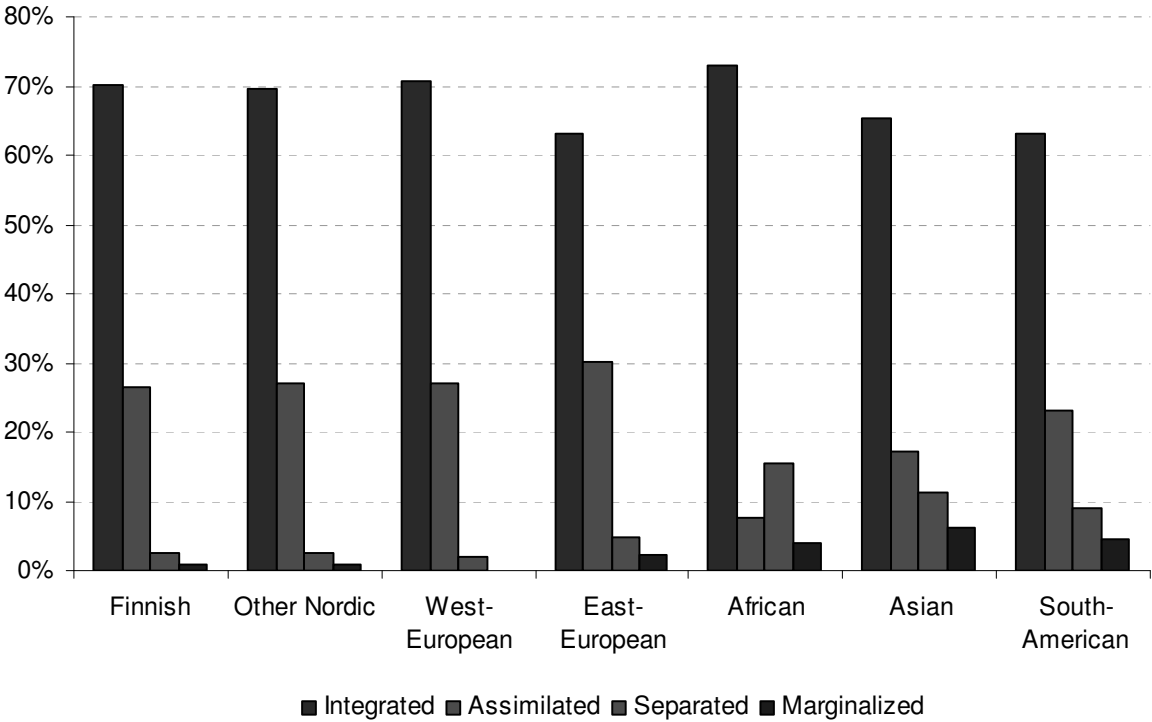
	(1) Men Immigrant	(2) Men Born in Sweden	(3) Women Immigrant	(4) Women Born in Sweden
Acculturation Identity (ref: Assimilated):				
Integrated	0.397**	0.594**	0.284	0.161
	(0.188)	(0.295)	(0.228)	(0.238)
Separated	-0.194	0.383	-0.226	0.074
	(0.385)	(0.485)	(0.319)	(0.845)
Marginalized	0.178	-0.924**	-0.157	-1.194*
	(0.307)	(0.426)	(0.557)	(0.665)
No. of observations	701	726	676	752

* denotes significance at 10%; ** significance at 5% and *** significant at 1% level.

Note: Ordered logit estimation on three levels of education (secondary school, short post-secondary, university). Robust standard errors in parentheses. Included in all estimations are controls for aggregated national background, duration of residence in Sweden (immigrants), marital status, children, residence in a major urban area, type of secondary education initiated (incomplete, vocational or theoretical) and share of foreign-born in the local residential area (1995).

Appendix

Figure A1: Distribution of acculturation identities for those born abroad

Table A1: Description of Variables

Demographic characteristics:

Gender - dummy variable equal 1 for women, 0 for men.

Immigrant status - dummy variable equal 1 if immigrated to Sweden, 0 for born in Sweden.

Marital status- dummy variable equal 1 if married or cohabitating, 0 otherwise.

Children - dummy variable equal 1 if having at least one child under 18, 0 otherwise.

Residence in a major urban area - dummy variable equal 1 if residing in a major urban area, 0 otherwise.

National background- category variable with seven categories based on own country of birth, if born abroad, or parent's country of birth, if born in Sweden. The categories are; Finland, other Nordic countries (Norway and Denmark), Western Europe, Eastern Europe, Asia, Africa and South America.

Share of foreign born in residential neighbourhood - share of foreign born living in the individual's residential neighbourhood (assembly) in 1995.

Duration of residence in Sweden – number of years of stay in Sweden (equal to years of age for those born in Sweden)

Socio-economic background - socio-economic status of household, based on 1990 survey (Folk- och Bostadsräkningen 1990)

Human capital:

Type of secondary education initiated – type of secondary education that the individual applied to after graduating from compulsory school in 1988. Three categories are defined: vocational, theoretical and none/incomplete.

Average final grades – average final grades from secondary school (available for sub-sample of individuals that started secondary schooling immediately after compulsory school).

Level of education - categorical variable indicating highest completed level of education in 2002: compulsory, upper-secondary, post-secondary (less than two years) and university (including PhD).

Cultural identity:

Acculturation identity – categorical variable derived from two survey questions 1- "To what degree do you feel affinity to Swedish culture?" and 2-"To what degree do you feel affinity to your original background culture?". An individual is classified into one of four acculturation identities, i.e., assimilated, integrated, separated and marginalized.

Table A2: Determinants of Acculturation Identity for Men (1995)

	Assimilated	Integrated	Separated	Marginalized
Educational Background:				
Commenced University (1995)	-0.058	0.088	0.005	-0.035**
	(0.057)	(0.057)	(0.015)	(0.016)
Completed Secondary School (1995)	-0.041	0.064	-0.033*	0.010
	(0.052)	(0.053)	(0.019)	(0.020)
Accepted to Theoretical Secondary School (1988)	0.019	0.005	0.016	-0.041*
	(0.059)	(0.064)	(0.017)	(0.023)
Accepted to Vocational Secondary School (1988)	0.050	-0.052	0.029	-0.027
	(0.050)	(0.051)	(0.018)	(0.021)
National Background (ref: Finish):				
Other Nordic	-0.001	-0.038	0.028	0.011
	(0.074)	(0.076)	(0.025)	(0.018)
West European	-0.097	-0.017	0.091***	0.024
	(0.069)	(0.079)	(0.032)	(0.036)
East European	-0.039	-0.033	0.022*	0.050*
	(0.068)	(0.067)	(0.013)	(0.029)
African	-0.202***	0.058	0.051	0.094*
	(0.077)	(0.098)	(0.042)	(0.053)
Asian	-0.111*	-0.043	0.091***	0.063**
	(0.063)	(0.067)	(0.028)	(0.026)
South American	-0.082	-0.029	0.062*	0.049
	(0.055)	(0.067)	(0.033)	(0.030)
Demographic Characteristics:				
Married	0.037	-0.043	0.015	-0.010
	(0.040)	(0.043)	(0.014)	(0.018)
Children	-0.023	0.009	0.000	0.015
	(0.059)	(0.057)	(0.019)	(0.032)
Foreign-born	0.015	0.032	-0.029	-0.017
	(0.056)	(0.054)	(0.022)	(0.019)
Duration of Residence	0.005	-0.001	-0.004	0.000
	(0.004)	(0.005)	(0.003)	(0.002)
Major Urban Area	0.060	-0.112**	0.023	0.029*
	(0.057)	(0.051)	(0.015)	(0.016)
Proportion Immigrants in Residential Area	-0.004**	0.003*	0.000	0.001
	(0.002)	(0.002)	(0.001)	(0.001)
No. of observations	1427	1427	1427	1427

* denotes significance at 10%; ** significance at 5% and *** significant at 1% level.
Note: Linear probability estimations on the probability of belonging to each acculturation identity respectively. Robust standard errors in parentheses.

Table A3: Determinants of Acculturation Identity for Women (1995)

	Assimilated	Integrated	Separated	Marginalized
Educational Background:				
Commenced University (1995)	0.030	-0.022	-0.007	-0.002
	(0.049)	(0.048)	(0.015)	(0.007)
Completed Secondary School (1995)	0.065	-0.063	0.010	-0.012
	(0.057)	(0.056)	(0.014)	(0.011)
Accepted to Theoretical Secondary School (1988)	0.079	-0.057	-0.019	-0.004
	(0.060)	(0.057)	(0.015)	(0.007)
Accepted to Vocational Secondary School (1988)	0.031	-0.024	-0.019	0.011
	(0.058)	(0.054)	(0.014)	(0.010)
National Background (ref: Finish):				
Other Nordic	-0.053	0.052	0.009	-0.008
	(0.061)	(0.064)	(0.017)	(0.006)
West European	-0.081	0.080	-0.002	0.003
	(0.067)	(0.072)	(0.016)	(0.010)
East European	0.090	-0.119*	0.026*	0.004
	(0.061)	(0.061)	(0.015)	(0.008)
African	-0.166**	-0.011	0.180**	-0.003
	(0.067)	(0.109)	(0.084)	(0.031)
Asian	-0.048	-0.059	0.082***	0.025*
	(0.057)	(0.059)	(0.026)	(0.014)
South American	0.008	-0.084	0.067*	0.009
	(0.061)	(0.065)	(0.036)	(0.019)
Demographic Characteristics:				
Married	-0.012	0.004	0.017	-0.010
	(0.048)	(0.047)	(0.013)	(0.009)
Children	0.019	-0.028	-0.008	0.017*
	(0.047)	(0.048)	(0.013)	(0.010)
Foreign-born	0.016	0.024	-0.019	-0.021
	(0.044)	(0.047)	(0.020)	(0.015)
Duration of Residence	0.003	0.004	-0.004	-0.003
	(0.004)	(0.005)	(0.003)	(0.002)
Major Urban Area	0.006	-0.001	-0.019	0.014
	(0.044)	(0.046)	(0.012)	(0.009)
Proportion Immigrants in Residential Area	-0.006***	0.004***	0.002***	0.001*
	(0.001)	(0.001)	(0.001)	(0.000)
No. of observations	1428	1428	1428	1428

* denotes significance at 10%; ** significance at 5% and *** significant at 1% level.
Note: Linear probability estimations on the probability of belonging to each acculturation identity respectively. Robust standard errors in parentheses.

Table A4: Level of Education and Acculturation Identity controlling for socio-economic status (2002)[a]

	(1) Men	**(2)** Men	**(3)** Women	**(4)** Women
Acculturation Identity (ref: Assimilated):				
Integrated	0.419*	0.356	0.173	0.238
	(0.221)	(0.224)	(0.191)	(0.194)
Separated	0.141	0.221	-0.714*	-0.571
	(0.400)	(0.405)	(0.395)	(0.401)
Marginalized	-0.113	-0.080	-1.226***	-1.086**
	(0.344)	(0.354)	(0.457)	(0.483)
Control for socio-economic backgr.	No	Yes	No	Yes
No. of observations	1187	1187	1204	1204

[a] Estimations are based on the sub-sample with information about socio-economic background

* denotes significance at 10%; ** significance at 5% and *** significant at 1% level.

Note: Ordered logit estimation on level of education. Robust standard errors in parentheses. Included in all estimations are controls for national background, immigrant status, duration of residence, marital status, children, residence in a major urban area and share of foreign-born in the residential area (1995).

Table A5: The Probability of a University Degree (2002)

	(1) Men	**(2)** Men	**(3)** Women	**(4)** Women
Acculturation Identity (ref: Assimilated):				
Integrated	0.127***	0.125***	0.055	0.024
	(0.041)	(0.047)	(0.046)	(0.046)
Separated	0.021	0.033	-0.028	-0.051
	(0.062)	(0.060)	(0.073)	(0.072)
Marginalized	-0.141**	-0.092	-0.101	-0.064
	(0.065)	(0.073)	(0.084)	(0.092)
Control for average grades	No	Yes	No	Yes
No. of observations	1109	1109	1069	1069

* denotes significance at 10%; ** significance at 5% and *** significant at 1% level.

Note: Linear probability estimations on the probability of having a university education in 2002 on a sub-sample of the cohort with completed secondary education in 1995. Included in all estimations are controls for national background, marital status, children, immigrant status, duration of residence, residence in a major urban area, type of secondary education initiated (incomplete, vocational or theoretical) and share of foreign-born in the local residential area (1995).

Table A6: The Probability of Initiating a University Education in 1995.

	(1)	(2)	(3)	(4)
	Men	Men	Women	Women
Acculturation Identity (ref: Assimilated):				
Integrated	0.073**	0.053	0.053	0.022
	(0.032)	(0.036)	(0.037)	(0.033)
Separated	0.024	0.026	0.002	-0.001
	(0.049)	(0.050)	(0.057)	(0.053)
Marginalized	-0.096***	-0.061	-0.045	-0.011
	(0.035)	(0.048)	(0.058)	(0.055)
Type of Secondary School	No	Yes	No	Yes
No. of observations	1427	1427	1428	1428

* denotes significance at 10%; ** significance at 5% and *** significant at 1% level.

Note: Linear probability estimations on the probability of having initiated university education in 1995. Included in all estimations are controls for aggregated national background, duration of residence in Sweden (immigrants), marital status, children, residence in a major urban area, type of secondary education initiated (incomplete, vocational or theoretical) and share of foreign-born in the local residential area (1995). Robust standard errors in parenthesis.

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