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Interethnic marriage: a choice between ethnic and educational similarities

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Abstract This paper explores the role of assortative matching on education in explaining the relationship between schooling and ethnic endogamy. Using 2000 US Census data, we find that matching on education rather than ethnicity is more important for natives than for the foreign born and for the foreign born who arrived as young children rather than for those who arrived as teenagers. Education does not appear to influence the marriage decisions of Asians, but matching on education plays a larger role in the decisions of whites than those of Hispanics.

Keywords Ethnic intermarriage · Education · Immigration

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1 Introduction

There is a large literature on whether immigrants in the USA today are assimilating at the same speed and through the same processes as immigrants in the past. Much of this literature either directly or implicitly points to the role of social integration in explaining economic assimilation. Because the racial and educational composition of the latest wave of immigrants differs so much from the native population, it is important to consider how education affects social integration and whether this relationship varies across different immigrant groups and generations.

Traditionally, social scientists have measured social integration using residential segregation (Duncan and Lieberson 1959), but given that communication is a prerequisite for social integration, language ability can also be viewed as a measure of immigrants' association with natives.[1] Building on both of these measures, the "ethnosizer" quantifies ethnic identity using information on language, media, ethnic self-identification, ethnic networks, and residential location (Constant and Zimmermann 2008; Constant et al. 2009). In this paper, we explore a different measure of social integration: *interethnic marriage*, marriage to a person belonging to a different ethnic group.[2]

In a series of papers, Borjas (1992, 1995, 1998) shows theoretically and empirically how ethnic capital, measured by the average skill level in an ethnic group, affects the productivity of workers in the next generation. As implied by this work, immigrants are affected by ethnic capital because they choose to associate with coethnics. Since these choices potentially depend on their education, it is important to examine how schooling affects ethnic attachment. If, for example, immigrants with high education levels do not associate with coethnics, then they will not be affected by the ethnic externality and their human capital will not contribute to the externality.[3] We show in this paper that although education and ethnic attachment, as measured by endogamy, are generally negatively correlated, the precise relationship depends on the average education of the person's ethnic group as well as the person's nativity, age at arrival, and race. An understanding of these relationships might help policymakers make predictions about the intergenerational assimilation of immigrants of different groups.

[1] Chiswick (2009) provides an overview of the economics of language, while Bleakley and Chin (2010) examine the causal effects of language proficiency on a variety of social outcomes.

[2] We use the words ethnicity and ancestry interchangeably throughout the paper.

[3] Although Borjas did not specifically consider marriage patterns as a mechanism through which ethnic externalities operate, Becker and Murphy (2000) suggest that marital sorting on education, income, race, and religion is more important in transmitting inequality than neighborhood segregation.

Although several papers examine the determinants of racial intermarriage (Gullickson 2006; Wong 2003), very few consider the determinants of intermarriage among immigrants and their descendents. Chiswick and Houseworth (2008) analyze a long list of the determinants of immigrant intermarriage including years in the USA, age at arrival, education, ethnic group sex ratios, group size, and linguistic distance from English. Our paper builds on a study by Furtado (2006) that examines three mechanisms through which education might affect intermarriage decisions for second-generation immigrants. First, the *cultural adaptability* effect suggests that educated people are better able to adapt to different customs and cultures. Since immigrants with more human capital have a better "technology" for adapting to the host society, they are more likely to marry outside of their ethnic group. Second, the *enclave effect* suggests that educated immigrants are more likely to move out of their ethnic enclaves because, for example, they have wider geographic labor markets. They are, therefore, less likely to meet potential spouses of their own ethnicity, and so, naturally, they are less likely to marry them. Lastly, the *assortative matching effect* posits that because marriage surplus increases when education levels of husband and wife are similar, immigrants may be willing to substitute similarities in ethnicity for similarities in education.[4]

Using 1970 US Census data on second-generation immigrants, Furtado (2006) finds that controlling for the enclave effect, there is little support for the cultural adaptability effect but strong evidence of assortative matching. Because the composition of immigrants has changed so dramatically since 1970, the first contribution of our paper is to test whether this conclusion holds when using more recent data. We then explore how the relative merits of the mechanisms linking education to intermarriage compare across different groups of immigrants and their descendents.

There are several ways in which immigrants in the USA in 2000 differ from immigrants in 1970. First, immigrants and their children in 2000 make up a substantially larger proportion of the population. Moreover, newer cohorts of immigrants tend to have significantly lower average levels of education than natives, potentially making it more difficult for immigrants to find same-ethnicity and same-education spouses among the native born. Lastly,

[4]These three mechanisms can be framed in a manner consistent with Wong (2003) and Gullickson (2006). What we call *cultural adaptability* and Gullickson calls *structural assimilation theory* can be interpreted as the effect of education on Wong's *mating taboo*. By what we call the *enclave effect* and Gullickson calls *isolation theory*, Wong might describe as education decreasing the *opportunities for courtship* between immigrants of the same ethnicity. Lastly, by what we call the assortative matching effect, Wong could say that more education decreases the *differences in endowments* between people of different ancestries. Although Gullickson does not emphasize the role of assortative matching, he controls for the different educational distributions of blacks and whites in his empirical analysis.

in contrast to the traditionally European immigrants from the past, today's immigrants are predominantly Hispanic and Asian.[5] All of these changes may influence the relationship between education and ethnic endogamy.

A direct comparison between second-generation immigrants in 1970 and 2000 is not possible because 1970 was the last year the US Census collected information on parents' countries of birth. Instead, we test whether the conclusions drawn for second-generation immigrants in 1970 (Furtado 2006) apply in 2000 to the native born who identify with a particular ancestry and immigrants who arrived in the USA before the age of 18 years. Because immigrants arriving as adults may have migrated as married couples, we exclude them from our analysis. While Furtado (2006) does not find empirical support for the cultural adaptability effect, we find evidence of both the cultural adaptability and assortative matching effects in our data. We also compare the magnitudes of the cultural adaptability and assortative matching effects across different groups. First, we explore how assimilation affects the relationship between education and intermarriage decisions by separately examining marriage decisions of the native and foreign born. Then, for the foreign born, we look at how age at migration affects marriage decisions. Our results suggest that natives care relatively more about matching on education than matching on ethnicity. Similarly, the assortative matching effect is stronger for migrants arriving at or below the age of 5 years than those arriving as teenagers. The cultural adaptability effect remains statistically and economically significant across groups.

As a final contribution to the literature, we explore whether race changes the relative importance of the cultural adaptability and assortative matching effects. We find that assortative matching plays a slightly stronger role in the marriage decisions of whites than those of Hispanics. Cultural adaptability appears to be more influential for native Hispanics than native whites, but the reverse is true for the foreign born. The marriage decisions of Asians do not appear to be very sensitive to changes in education.

The remainder of the paper is organized as follows. Section 2 provides theoretical background and explains our empirical strategy. The subsequent section presents the data and highlights some descriptive statistics. Section 4 discusses the empirical results. Section 5 concludes, provides policy implications, and suggests avenues for future research.

[5] In 1970, 16.5% of the US population were either foreign born or had at least one foreign born parent, while in 2000, the figure increased to 20.4% (Schmidley 2001). Although immigrant educational attainment has increased in absolute terms since 1970, relative to natives, immigrant schooling levels have declined rather substantially, most notably at the bottom end of the education distribution (Betts and Lofstrom 2000). In 1970, over 70% of the foreign born were non-Hispanic white, while by 2000, about half were Hispanic and a quarter Asian (Gibson and Jung 2006).

2 Theoretical background and methods

2.1 Baseline specification

Beginning with the work of Becker (1973), economists have thought about marriage market participants matching on characteristics that are complements in household production. Becker lists education and ethnic origin as examples of such complementary traits. Lam (1988) extends this analysis by considering the joint consumption of household public goods as an explanation for assortative matching. Since demands for many household public goods depend on ethnicity as well as education, Lam's analysis also implies that marriage market participants should match on these traits.[6] Since spouse search is costly, however, optimal matches do not always occur. We use this basic framework in describing three possible mechanisms through which education affects marriage choice: the cultural adaptability effect, the enclave effect, and the assortative matching effect.

We start by assuming that, all else equal, people prefer to match with someone who shares a similar culture. As in Lazear (1999), we conceptualize culture as a "notion of shared values, beliefs, expectations, customs, jargon, and rituals." By the cultural adaptability effect, educated people are better able to adapt to different customs or to communicate their potentially different expectations and beliefs to their spouses. Because of this better "technology" for adapting to a different culture, they become more likely to marry outside of their ethnic group. Thus, by the cultural adaptability effect, more education necessarily decreases the probability of marrying within ethnicity.

The enclave effect results from the educated being less likely to live in ethnic enclaves because, for example, they have larger geographic labor markets (Bartel 1989). If there are fewer coethnics within close geographic proximity, the probability of encountering an acceptable same-ethnicity spouse purely by random chance decreases. Spouse searchers with strong preferences for endogamy may search outside of their metropolitan areas or search more intensively within them. However, given the prospect of a lengthy and perhaps costly search, many may choose to marry exogamously. Thus, even if preferences for endogamy do not change with education, by the enclave effect, an increase in education will result in a decrease in the probability of endogamy. Although in the empirical analysis, we will not be able to measure the impact of the enclave effect directly, we will control for it using the size of a person's ethnic group in the metropolitan area.

Lastly, consistent with both the Becker (1973) and Lam (1988) theories of marriage, the assortative matching effect draws on the assumption that marriage surplus increases when education levels of husband and wife are

[6]For example, demand for family vacations in the home country or dinners at ethnic restaurants will certainly be affected by ancestry. Examples of household public goods that might be affected by education include visits to museums or intellectual conversations.

similar.[7] This implies that given a costly search process, people with more education may be willing to substitute similarities in ethnicity for similarities in education. The need for this substitution, however, depends on how a person's education level compares to the average education in his ethnic group. For a male in a low education ethnic group, an increase in schooling will make him more educationally similar to the average person living in the USA, and so, his probability of endogamy will decrease. Conversely, if he belongs to a high education ethnic group, the same increase in schooling will make him relatively more similar to the average person in his ethnic group. Consequently, education leads to lower endogamy rates for people in low education ethnic groups but higher endogamy rates for people in high education groups. If marriage markets operate mostly at the metropolitan area level, then what actually matters is how the average education of same-ethnicity potential spouses in one's city compares to the general average education in that city. Thus, to identify the assortative matching effect, we exploit variation in the difference between average coethnic education in the metropolitan statistical area (MSA) and average education in the MSA as a whole.

The following probit model forms the empirical framework of our analysis:

$$\Pr(Y_{ijk} = 1) = \Phi\left(\beta_0 + \beta_1 S_{ijk} + \beta_2 S_{ijk}\left(\overline{S}_{jk} - \overline{S}_k\right) + \beta_3 P_{jk} + \beta_4 P_{jk}^2 + \mathbf{X_{ijk}}\beta_5\right)$$

where Y_{ijk} is an indicator variable equal to 1 if person i in ethnicity j living in metropolitan area k has an endogamous marriage and 0 otherwise. Years of schooling is denoted S. Average schooling in ethnic group j in city k is denoted $\overline{S}_{jk}$, while $\overline{S}_k$ measures the average schooling of the general population in metropolitan area k. Ethnic group size is denoted P, while $\boldsymbol{X}$ is a vector of characteristics measuring tastes for marrying within ethnicity, such as age, language ability, and ancestry. The standard normal cumulative distribution function is denoted Φ.

If education affects endogamy through the cultural adaptability mechanism, then we expect that β_1 is negative since regardless of ancestry, education should decrease endogamy by the cultural adaptability effect. If education affects endogamy through the assortative matching mechanism, then we expect that β_2 is positive. Just as implied by the assortative matching effect, for someone in a low education ethnic group, an increase in education will lead to a decrease in endogamy (since $\overline{S}_{jk} - \overline{S}_k < 0$), but for someone in a high education group, an increase in schooling will result in an increase in endogamy (since $\overline{S}_{jk} - \overline{S}_k > 0$). Although we do not have a direct measure of the enclave effect, we control for it by including P and its square term in the specification. Since a greater concentration of same-ethnicity potential spouses in one's MSA should lead to increases in endogamy, we expect that β_3 is positive.

[7] Alternatively, we can assume that marriage market participants always prefer more education in a spouse to less. In this scenario, equilibrium sorting in the marriage market will also result in assortative matching on education.

2.2 Relative importance of mechanisms in different groups

In this section, we make theoretical predictions about how the relative merits of the mechanisms linking education and endogamy differ across different populations. First, we compare the magnitudes of the cultural adaptability and assortative matching effects across groups that are more and less assimilated to the USA. Then, we compare them across different racial groups.

Assimilation, education, and endogamy One may expect that with more attachment to the USA, similarities in education with a potential spouse become relatively more important than similarities in ethnic traits. Thus, running the model on immigrants and natives separately, the coefficient capturing the assortative matching effect, β_2, should be greater for the native born than for the foreign born.

Even under the assumption that preferences for endogamy decrease with assimilation, predictions about the coefficient measuring cultural adaptability, β_1, are difficult to make. With more assimilation, ethnic preferences should decrease, making it more difficult for education to have any effect on them. Thus, we may expect that estimated β_1's will be closer to 0 for groups who are more assimilated. In the extreme case, for example, if people have no preference for marrying within ethnicity, education certainly cannot further decrease this preference. At the other extreme, however, if ethnic preferences are strong enough, they will not be sensitive to education, and again, β_1 will be very close to 0. Thus, the relationship between ethnic preferences and the cultural adaptability effect is likely to be U-shaped. Since there is no way to precisely measure tastes for endogamy, no clear predictions can be made about how the cultural adaptability effect differs by nativity.

Comparing the native born to the foreign born is a rather crude method for evaluating the effect of assimilation on marriage patterns. A more precise measure, available only for the foreign born, is age at migration. Friedberg (1992), Borjas (1995), and Schaafsma and Sweetman (2001) find that age at migration has a negative effect on earnings even after controlling for several demographic characteristics. There is also a large psychology literature that finds that because of physiological changes in the brain, age at arrival in a new country is critical for the language acquisition of immigrants (see Bleakley and Chin 2010 for references). Given the link between language ability and many other measures of assimilation (Chiswick 2009), it seems reasonable to use age at arrival as a proxy for assimilation.

We compare marriage patterns of immigrants who arrived in the USA when they were younger than or equal to the age of 5 years to the immigrants who arrived between the ages of 13 and 17 years, inclusively. Those who arrived as young children most probably value shared ethnicity with their spouses less than those who arrived as teenagers. Thus, our main hypothesis is that the assortative matching coefficient, β_2, is larger for the immigrants who arrived as young children. For reasons discussed above, it is not possible to make predictions about the cultural adaptability effect.

Race, education, and endogamy Race may also affect the mechanisms through which education influences endogamy decisions. The model sociologists typically use to explain interracial marriages is Merton's (1941) social exchange theory. Put simply, the theory is that whites bare a cost for marrying a lower status racial group and so will only intermarry if they are compensated with some other favorable characteristic in a spouse, such as income or education. One prediction of the theory is that black men with high socioeconomic status will marry white women with lower socioeconomic status. Gullickson (2006) finds only weak evidence supporting the social exchange theory for black–white couples, while Fryer (2007) interprets the finding that blacks who intermarry have less education than those who intramarry as evidence against the social exchange theory. Hispanic and Asian marriage patterns are even less consistent with the social exchange theory. In fact, there is more endogamy among high education Asians than low education Asians. Moreover, the white men who marry Asian women have higher levels of education than the Asian men who marry Asian women (Qian 1997).

Fryer (2007) finds Becker's theory of optimal matches in the marriage market to be the most consistent with the data on interracial marriages. Applying the marriage market model to interracial marriages, he concludes that if interracial marriage is costly and education in a spouse is important, then interracial marriages may be infrequent, but those who intermarry will be the highly educated. The additional education in a spouse is necessary in order to entice people to marry outside of their race. Using this basic framework, we make two main types of predictions about how the relationships between education and endogamy differ by race. First, we consider racial differences in the general responsiveness of marriage decisions to changes in education, and then, we compare the relative impacts of the cultural adaptability and assortative matching across races.

Because the majority of the US population is non-Hispanic white, it is easier for whites to find a spouse with the same race, but a different ethnic background, than it is for Hispanics and Asians. Thus, a decision not to marry within ethnicity for Hispanics and Asians often implies an interracial marriage. Given that marriage outside of one's race is more difficult than a same-race interethnic marriage, we may expect that the intermarriage decisions of whites are more sensitive to changes in education than those of minorities. In contrast, since Asians make up a significantly smaller fraction of the population, Asian endogamy decisions might be the least sensitive to changes in education. That is, they may choose endogamous marriages regardless of their schooling levels.

All else equal, a greater responsiveness to education implies stronger cultural adaptability and assortative matching effects, but it is also worth considering how race affects the two mechanisms relative to each other. Our main hypothesis is that members of racial groups who place greater emphasis on education value education in a spouse relatively more than ethnicity. Since the educational attainment of whites and Asians is typically higher than Hispanic attainment (Crissey 2009), this implies that assortative matching should be most influential for whites and Asians and least influential for Hispanics. Of course, if as discussed above, Asian marriage decisions do not respond very much to education, then we might not see this relationship in Asian marriages.

Predictions concerning the cultural adaptability effect are more difficult to make. As discussed in the previous section, the cultural adaptability effect may be small either because marriage market participants have very weak preferences for endogamy or because their strong preferences for endogamy are not sensitive to education. For example, among Asians, the impact of education on interracial marriage decisions is weakest for the Japanese, the most assimilated ethnic group, and the Southeast Asians, the least assimilated Asian group (Qian 1997). This is consistent with the Japanese having little preference for endogamous marriage, and so, education cannot have a substantial effect, while Southeast Asians have such a strong preference for endogamy that education does not have a strong effect. Given these types of difficulties, we do not feel comfortable in making any predictions about the magnitude of the cultural adaptability effect for different racial groups, even under the strong assumption of equal sensitivities of endogamy to education.

3 The data

Our empirical analysis uses the 5% Public Use Sample of the 2000 US Census as reported by the Integrated Public Use Microdata Series (Ruggles et al. 2008). This dataset is particularly well suited for our purposes because it allows us to get reasonably accurate estimates of the average education levels and number of people from specific countries of origin living within reasonably close geographic proximity.

The sample is restricted to married men with a spouse present, living within identifiable metropolitan statistical areas. Only legally married couples are considered since census data do not allow us to accurately identify cohabitating couples.[8] In order to examine the effect of completed schooling, only those over the age of 25 years and not enrolled in school are used in the analysis.[9] We also drop people over the age of 65 years. Only ancestries that can be

[8] As a specification check, we dropped from the same people over the age of 40 years in order to reduce any bias resulting from the possibility that endogamous marriages are less likely to end in divorce (Kalmijn 1998). Our results were robust.

[9] Concerned about reverse causality between education and endogamy, we would have liked to examine whether results were robust to excluding people who married young. Unfortunately, age at first marriage is not available from the 2000 Census. However, since most people have their first child shortly after marriage, we experimented with dropping from the sample those who had their first child younger than age 30 years. Again, results were robust. Moreover, even without putting any age restrictions on the data, only 15% of all married people acquire more education after marriage (Lewis and Oppenheimer 2000).

considered white, Hispanic, or Asian are considered in the analysis; those associated with English-speaking countries are not included in our sample. Ancestry groups with fewer than 1,000 observations are dropped from our

Table 1 Endogamy rate, size of ethnic group, and average education levels by ancestry

Ancestry	Observations	Endogamy	Size of ethnic group in MSA	Mean ethnic education in MSA	Mean education in MSA
White	182,046	31.4	9.9	14.2	13.5
Austrian	624	5.9	0.3	15.7	13.5
Dutch	3,578	21.5	4.2	14.2	13.4
Finnish	177	8.6	1.0	14.7	13.5
French	5,641	13.4	2.6	14.0	13.4
German	84,385	34.3	13.5	14.2	13.5
Greek	2,189	32.0	0.7	14.0	13.6
Italian	46,131	36.0	10.2	13.9	13.5
Norwegian	2,583	14.0	4.8	14.5	13.7
Portuguese	2,507	41.3	7.3	11.7	13.2
Swedish	2,226	9.9	2.1	14.7	13.6
Swiss	332	3.4	0.3	15.4	13.5
Albanian	91	70.2	0.3	11.9	13.4
Croatian	324	17.5	0.4	13.9	13.4
Czechoslovakian	831	7.2	0.4	14.9	13.5
Hungarian	1,781	10.5	0.9	14.5	13.4
Lithuanian	431	11.9	0.4	15.0	13.5
Polish	17,985	22.8	5.6	14.1	13.5
Romanian	397	14.8	0.2	14.6	13.4
Russian	6,512	32.8	1.8	16.1	13.5
Serbian	121	19.7	0.3	13.2	13.5
Ukrainian	1,178	14.3	0.6	14.8	13.5
Yugoslavian	129	18.8	0.1	13.1	13.3
Egyptian	59	45.9	0.2	15.5	13.2
Iranian	449	61.3	0.5	15.5	13.3
Israeli	103	29.4	0.2	14.7	13.4
Lebanese	418	25.0	0.3	14.4	13.4
Syrian	105	46.6	0.1	13.6	13.4
Armenian	539	47.2	0.8	14.1	13.1
Turkish	77	26.0	0.1	14.4	13.5
Palestinian	59	60.7	0.1	14.0	13.5
Assyrian/ Chaldean/ Syriac	84	69.9	0.6	11.5	13.3
Hispanic	28,451	73.7	0.19	10.5	12.8
Spaniard	252	41.1	0.9	13.1	13.2
Mexican	20,864	80.8	23.7	9.9	12.7
Guatemalan	152	42.5	0.7	9.1	13.1
Honduran	78	44.1	0.7	10.2	13.1
Nicaraguan	134	45.1	2.5	11.8	13.0
Salvadoran	393	55.4	1.3	8.8	13.2
Colombian	411	43.9	1.8	12.8	13.3
Ecuadorian	182	51.5	0.9	11.7	13.4
Peruvian	84	23.7	0.6	13.2	13.3
Venezuelan	30	38.7	0.6	14.7	13.1
Puerto Rican	3,288	56.6	3.5	11.9	13.4
Cuban	2,342	57.8	14.1	12.8	13.1
Dominican	241	60.3	2.6	11.0	13.4

Table 1 (continued)

Ancestry	Observations	Endogamy	Size of ethnic group in MSA	Mean ethnic education in MSA	Mean education in MSA
Asian	11,572	72.9	3.8	14.1	13.4
Asian Indian	1,024	78.5	1.3	15.6	13.5
Pakistani	120	76.4	0.3	14.6	13.4
Chinese	3,426	73.0	3.4	14.0	13.5
Filipino	2,449	69.4	4.8	14.2	13.4
Japanese	1,874	61.3	8.4	14.8	13.3
Korean	1,114	81.1	1.3	14.4	13.3
Thai	49	65.6	0.2	13.8	12.9
Taiwanese	166	54.2	0.5	16.0	13.3
Vietnamese	1,350	85.6	1.6	12.1	13.3

The sample consists of married men (spouse present) between the ages of 25 and 65 years who report an ancestry. We restrict the foreign born to those who arrived in the USA at age of 18 years or younger. All means in the table are computed using person weights

sample, as are subgroups of main ancestries (e.g., Sicilians are dropped because they are a subgroup of the Italian ancestry). Twelve additional groups are dropped because of uniform marriage decisions among members of these groups in at least one of the specifications in the paper. The final list of ancestry groups used in the analysis is provided in Table 1.

A marriage is considered endogamous if spouses share a common ancestry. Census respondents were allowed to write in as many as two ancestries. Our dependent variable takes the value of 1 if the first ancestry of the husband is the same as the first ancestry listed by the wife and 0 otherwise.[10]

In the 2000 Census, education is measured in academic qualifications and not in years of schooling. We construct a continuous-years-of-schooling variable by mapping educational qualifications into the average number of years it takes for people to complete them, following Chiswick and DebBurman (2004). The size of the ethnic group is obtained by dividing the number of people from that ethnic group residing in the MSA by the MSA population, taking into account census-provided person weights. To limit sampling error in the formation of these variables, observations are dropped if there are fewer than 50 people from a person's ethnic group living in his MSA.

The controls used in the analysis are language ability (measured by a dummy variable equal to 1 if the person speaks only English or speaks English very well), age and its square, residence in the center city, veteran status, region of residence, and race. The racial categories are based on self-responses to race and ancestry questions in the census. Although Hispanic was not listed as a race in the census form, we coded respondents' race as Hispanic if they answered yes to the Hispanic question, regardless of how they answered the race question. A person is coded as white if he self-identifies as white and names

[10] We also examined marriages of people who list only one ancestry, and results were robust.

Table 2 Descriptive statistics of selected variables by marriage type

	Exogamous couples	Endogamous couples	All
Years of education	14.6	13.5	14.2
Age	45.1	43.7	44.6
Size of ethnic group in MSA	8.7	13.9	10.7
Mean ethnic education in MSA	14.1	13.1	13.7
Mean education in MSA	13.5	13.3	13.4
Speaks English very well or only English	98.5	85.7	93.5
White	92.0	65.5	81.6
Asian	2.3	9.8	5.2
Hispanic	5.7	24.7	13.1
US born	91.6	72.4	84.1
Age of arrival (of immigrants)	8.3	12.6	11.2
Veteran	27.7	22.6	25.7
In metro area, central city	12.0	17.3	14.1
In metro area, outside central city	60.7	52.9	57.6
In metro, central city status unknown	27.3	29.8	28.3
Observations	135,543	86,511	222,054

See Table 1 notes for information on the sample. The English fluency variable takes the value of 1 if the individual speaks English very well or only English, 0 otherwise. The veteran dummy variable is equal to 1 if the individual served in the US armed forces, military reserves, or National Guard. For further details on the sample and variables, see the text. All means are computed using person weights

a white ancestry. Similarly, a person is coded as Asian if he self-identifies as Chinese, Japanese, or other Asian in the race question and names an Asian ancestry in the ancestry question. Lastly, a person is coded as Hispanic if he answers yes to the Hispanic question and names a Hispanic ancestry.[11] Only approximately 4% of the initial sample had races and ancestries that did not match, and these observations were dropped. People reporting multiple races were also dropped from the sample.

Table 1 shows endogamy rates, ethnic group sizes, and average education levels by ancestry. Endogamy rates are higher for racial minorities and for groups who are highly represented in the cities in which members of the group reside. Also note that Asians and Hispanics have substantially higher endogamy rates than whites, and Hispanics have significantly lower average education levels than whites and Asians. Table 2 presents descriptive statistics for males in endogamous and exogamous marriages separately. Exogamously married men have more years of schooling, belong to high-skilled ethnic groups, and live in cities with a smaller proportion of people with the same ancestry. They are more likely to be native born, speak English very well or only English, and to have fought in a war but are less likely to live in the central part of the city.

[11] Because approximately 93% of Spaniards self-identify as Hispanic, we consider Spaniard a Hispanic ancestry. For which ancestries are considered white, Hispanic, and Asian, see Table 1.

4 Empirical results

4.1 Baseline results

Table 3 presents estimates of the marginal effects of education on endogamy. Standard errors are adjusted for clustering within MSA-ancestry cells. All specifications include a set of controls to capture ethnic preferences. The

Table 3 Probit marginal effects of education on endogamy

Endogamy	1	2	3	4
Years of education	−0.012**	−0.007**	−0.009**	−0.009**
	(0.001)	(0.001)	(0.001)	(0.001)
Mean ethnic education	–	–	−0.029**	−0.024**
			(0.010)	(0.009)
Mean ethnic education − mean education	–	–	−0.072**	−0.056**
			(0.014)	(0.012)
Education × (mean ethnic education − mean education)	–	–	0.007**	0.006**
			(0.001)	(0.000)
Size of ethnic group in MSA	–	2.208**	2.301**	2.369**
		(0.180)	(0.178)	(0.203)
Square of ethnic group size in MSA	–	−1.918**	−2.124**	−2.292**
		(0.327)	(0.336)	(0.364)
Age	−0.008**	−0.009**	−0.008**	−0.008**
	(0.001)	(0.001)	(0.001)	(0.001)
Age squared/100	0.009**	0.011**	0.010**	0.010**
	(0.001)	(0.001)	(0.001)	(0.001)
Speaks English very well or only English	−0.254**	−0.258**	−0.222**	−0.222**
	(0.011)	(0.011)	(0.011)	(0.011)
Hispanic	0.309**	0.214**	0.175**	0.265**
	(0.031)	(0.015)	(0.032)	(0.068)
Asian	0.378**	0.419**	0.428**	0.593**
	(0.020)	(0.017)	(0.016)	(0.020)
US born	−0.112**	−0.187**	−0.180**	−0.167**
	(0.012)	(0.011)	(0.011)	(0.009)
Veteran status	−0.028**	−0.033**	−0.028**	−0.025**
	(0.003)	(0.003)	(0.003)	(0.003)
In metro area, central city	0.004	0.041*	0.040*	0.033*
	(0.020)	(0.017)	(0.017)	(0.016)
In metro area, outside central city	−0.028**	−0.002	0.001	0.001
	(0.010)	(0.005)	(0.005)	(0.005)
Region dummies	Yes	Yes	Yes	Yes
Ancestry dummies	No	No	No	Yes
Observations	222,054	222,054	222,054	222,054

See Table 1 notes for information on the sample. The dependent variable is equal to 1 if the individual is married to someone with the same ancestry, 0 otherwise. The omitted categories are speaks English less than "very well," white, native born, not in the armed forces, and unknown central city status. Size of ethnic group refers to proportion of the MSA population with the same ancestry. Mean ethnic education is equal to the average years of schooling in a person's ethnic group residing within the person's MSA, while mean education is the average years of schooling in the MSA. The robust standard errors in parentheses are clustered on MSA × ancestry cells. Estimates are weighted using the appropriate person-level weights. Significance levels are noted by the following: + significant at 10%; * significant at 5%; ** significant at 1%. "–" implies that the variable is not included in the specification marginal effects of the controls have the expected signs: English-speaking ability decreases endogamy as does being US born. Veterans are less likely to marry endogamously.[12] Age has a U-shaped relationship with endogamy, decreasing its probability up to age 40 years but then increasing it for later ages. This may reflect cohort differences in preferences for marriage within ethnicity throughout the past century. At least in models that control for the representation of the ethnic group in the MSA, residence in the central part of a city tends to increase endogamy relative to living outside of the central city or living in an area where central city status cannot be determined. Given that ethnic enclaves are typically located in the central part of the city, this should not come as a surprise since enclave residence makes it easier to meet potential spouses of the same ethnicity. Moreover, people with greater preferences for ethnic endogamy are more likely to live in ethnic enclaves. Racial minorities are more endogamous than non-Hispanic whites, with Asians marrying within ethnicity more than Hispanics. Although we do not report their marginal effects, eight region dummies are also included in all specifications.

The first column of Table 3 shows that despite this set of controls, a 1-year increase in schooling is associated with a 1.2-percentage point decrease in the probability of marrying someone with the same ancestry. In this model, the estimated marginal effect of education represents an average of the different mechanisms through which education affects endogamy decisions. By adding measures for the size of the ethnic group living in a person's city, we control for the possibility that people with more education are less likely to live in ethnic enclaves, and so, even by random matching, they become less likely to marry endogamously. Not surprisingly, increases in ethnic group size are associated with higher endogamy rates, but the strength of the relationship decreases as ethnic group size increases. Column 2 shows that the estimated effect of education is cut by over 40% when measures for the size of the ethnic group are added to the specification, providing suggestive evidence of the enclave effect.[13]

Column 3 adds to the specification the term interacting education with the difference between average ethnic education and average education in the person's city. When this measure of the availability of coethnics with a similar education is included in the analysis, the estimated marginal effect of education alone becomes more negative, and the marginal effect of the interaction has

[12] As suggested by Fryer (2007) as well as Chiswick and Houseworth (2008), the military forces its members to associate with individuals from many ethnic and racial backgrounds, and so, veterans may feel more comfortable with exogamous marriages. It may also be that veterans exhibit greater attachment to the host country relative to their home countries, which could also lead to lower endogamy rates.

[13] A possible concern with the size variables is that people choose whether to live amidst a large number of coethnics potentially as a result of whom they marry. We address this issue, at least for the native-born population, by calculating the size of the ethnic group in a person's state of birth as opposed to MSA of current residence. Since state of birth is chosen by one's parents, it is arguably less endogenous to marriage choice. Moreover, it is certainly not subject to reverse causality concerns. Qualitative results did not change when this different measure was used.

the expected positive sign. Taken together, our results suggest that although education has a generally negative effect on endogamy, schooling tends to decrease endogamy more for people living in areas where coethnics have lower education levels than others in the local population. Conversely, for people living in areas where ethnics have higher education levels than others, an increase in education leads to a smaller decrease in endogamy. In fact, for people in ethnic groups with very high average levels of education relative to the general population, an increase in education can lead to an increase in endogamy. We interpret this result as evidence of assortative matching on education in the marriage market.

For a variety of reasons, some ethnic groups may have fewer cultural differences with the average American making it easier for them to share a household with someone of a different ethnicity. Furthermore, some ethnic groups have a long history of immigration to the USA (for example, Mexicans), while others had a big wave of immigration at a certain time and then immigration stopped rather suddenly (for example, Italians). The history of immigration from a certain country could affect its social institutions in the USA, such as festivals and social clubs, which may make a finding an acceptable same-ethnicity spouse easier. In order to control for all of these effects, ancestry dummy variables are added in column 4. Instead of exploiting variation in average education levels across ethnic groups and across cities, this fixed effects model looks within ethnic groups but across cities to see how the effect of education responds to differences in relative education levels between ethnics and natives. Note that the estimated marginal effects of education alone and the interaction remain approximately the same.

We conclude that there is support for all three mechanisms through which education affects endogamy. In the final specification, regression results suggest that when average ethnic education equals average education for the general population, a 1-year increase in schooling results in about a 1-percentage point decrease in the probability of marrying endogamously. As the average ethnic education falls below the average for the general population by 1 year, education further decreases endogamy by 0.6 percentage points. On the other hand, if average ethnic schooling is above the general population average, then schooling will not decrease endogamy by as much. In fact, if the ethnic average is greater than the general average by more than a year and a half, then an increase in education will result in an increase in endogamy.

Although the magnitudes of these coefficients may appear small, they can imply rather large differences in endogamy rates because there is substantial variation in average ethnic education levels. For example, for a Guatemalan living in West Palm Beach, FL, where Guatemalans have on average 7.3 fewer years of schooling than the rest of the population (authors' own calculations), a 1-year increase in education leads to a 5.3-percentage point *decrease* in the probability of endogamy. Meanwhile, for an Indian living in Pittsburgh, PA, where the average education difference is 4.4, the same 1-year increase in education results in a 1.7-percentage point *increase* in the probability of endogamy.

Spouse searchers are not exposed exclusively to marriage market conditions in their MSAs. In fact, they can and often do import spouses from their countries of origin. This makes our results even stronger for the following reason. If it were true, for example, that all immigrants imported their spouses from abroad, our measures of marriage market conditions would have no impact on marriage decisions. In the more realistic scenario, spouse searchers will import wives when they fail to encounter large numbers of marriageable same-ethnicity potential spouses locally. The main point of this paper is that education changes the number of marriageable same-ethnicity spouses because preferences change, residential location in the US changes, or because the number of same education-same ethnicity potential spouses changes. If there are fewer marriageable same-ethnicity spouses living within close geographic proximity and having similar levels of education, then immigrants will have a tendency to either import a spouse, which is costly, or marry someone of a different ancestry. Our results suggest that many of them do indeed choose to marry someone of a different ancestry.

Tests for robustness Given the strong link between education and occupation, an increase in education may change the probability of marrying endogamously through its effect on the proportion of same-occupation workers sharing a person's ancestry. For example, given that such a large proportion of low-skilled Vietnamese immigrants work as manicurists (Federman et al. 2006), an increase in education for a Vietnamese immigrant may result in a change in occupation that would then decrease the number of Vietnamese people who the immigrant encounters on a regular on-the-job basis. To control for this, we add to the model a measure of the availability of potential same-ethnicity spouses at one's place of work. The specific measure we use is the proportion of people within one's occupation residing in one's MSA that shares the same ancestry. Although the coefficient on this variable was positive and significant as expected, the coefficients on our variables of interest did not change when this variable was added. We conclude that although immigrants who are more heavily exposed to same-ethnicity coworkers are more likely to marry endogamously, assortative matching on education has its own independent effect on endogamy decisions.

One may also believe that much of the assortative matching result is driven by college completion. We ran a specification adding an interaction between college completion and our assortative matching interaction. The estimated coefficient on this triple interaction was positive but insignificant, and the estimated coefficient on the original interaction remained about the same.

A potential problem with our analysis is that people choose where to live, and so, our average education variables, which are computed at the MSA level, might be endogenous. Presumably, average education in one's ethnic group in the entire country is more exogenous in that people cannot choose it. Thus, we ran a regression with the average education variables calculated over the entire country instead of over each individual MSA. Exploiting only differences across ancestries in this way did not significantly affect our results. This is not our preferred specification because it does not allow us to control for unobserved heterogeneity across ancestry. Nevertheless, although both methods of identification are imperfect, they are imperfect for different reasons, and so, the fact that results are robust is certainly comforting. Results from all of these robustness checks can be found in Table A1 in the Electronic Supplementary Material.

4.2 Results for different groups

Assimilation Table 3 shows how education affects marriage decisions for the general population. In Table 4, we present results separately for the native and foreign born, and among the foreign born, we compare early childhood migrants to teenage migrants. The assortative matching effect is more than three times higher for the native born than the foreign born suggesting that natives value similarities in education with their spouses more than immigrants.[14] The cultural adaptability effect appears equally as strong for the native and the foreign born.

Because the native-born sample consists of second-generation immigrants, whose parents may have arrived in the USA only shortly before they were born, as well as people whose families have been in the country for several generations, it is difficult to interpret our findings for the US born. To deal with this issue while exploring the role of assimilation, we limit the sample to the foreign born but examine how intermarriage decisions differ depending on age at arrival. Column 3 of Table 4 presents results for those who arrived at or before the age of 5 years, while column 4 limits the sample to those who arrived between the ages of 13 and 17 years, inclusively.

The assortative matching effect is five times stronger for immigrants arriving as young children than immigrants arriving as teenagers. The estimated marginal effect of the interaction term for the young arrivers is very similar to the point estimate in Furtado (2006). However, in contrast to Furtado (2006), there is statistically significant support for the cultural adaptability for both young and older arrivers. We conclude that the mechanisms through which education affects endogamy may have changed between 1970 and 2000, potentially because of changes in immigrant composition.

Race and nativity As can be seen in Table 5, the relationship between education and endogamy also differs by race. For both the native and foreign born, the marriage decisions of Asians do not appear to be sensitive to changes in education. In fact, in a baseline model of the type shown in the first column of Table 3, education had a small and insignificant impact on marriage choice for Asians (regression results available upon request). It is

[14]Our foreign born sample consists only of immigrants arriving in the USA before the age of 18 years. We also ran the regression using the entire foreign-born population. The coefficient on the interaction was almost the same.

Table 4 Probit marginal effects of education on endogamy by nativity and age of arrival

Endogamy	US born	Foreign born, arrived less than 18 years	Foreign born, age at arrival: 0–5 years	Foreign born, age at arrival: 13–17 Years
	1	2	3	4
Years of education	−0.009**	−0.009**	−0.005*	−0.005**
	(0.001)	(0.001)	(0.002)	(0.001)
Mean ethnic education	−0.020*	−0.025**	−0.048**	−0.011
	(0.009)	(0.010)	(0.018)	(0.009)
Mean ethnic education − mean education	−0.057**	−0.030**	−0.047	−0.021+
	(0.015)	(0.011)	(0.029)	(0.011)
Education × (mean ethnic education − mean education)	0.007**	0.002**	0.005**	0.001*
	(0.001)	(0.001)	(0.002)	(0.001)
Size of ethnic group in MSA	2.453**	1.607**	2.292**	0.897**
	(0.208)	(0.167)	(0.298)	(0.147)
Square of ethnic group size in MSA	−2.463**	−1.525**	−2.225**	−0.800**
	(0.373)	(0.307)	(0.521)	(0.248)
Age	−0.006 **	−0.009**	−0.017*	−0.005+
	(0.001)	(0.003)	(0.007)	(0.003)
Age squared/100	0.008**	0.012**	0.019*	0.006+
	(0.001)	(0.003)	(0.008)	(0.003)
Speaks English very well or only English	−0.182**	−0.169**	−0.233**	−0.104**
	(0.015)	(0.008)	(0.032)	(0.008)
Hispanic race	0.515**	0.237**	0.378+	0.157
	(0.084)	(0.077)	(0.206)	(0.101)
Asian race	0.440**	0.456**	0.437*	0.188**
	(0.133)	(0.027)	(0.171)	(0.051)
Veteran status	−0.018**	−0.045**	−0.063**	−0.014
	(0.003)	(0.009)	(0.018)	(0.012)
In metro area, central city	0.029+	0.018	0.034	−0.006
	(0.017)	(0.011)	(0.024)	(0.012)
In metro area, outside central city	0.002	−0.005	0.002	−0.011
	(0.005)	(0.007)	(0.016)	(0.009)
Region dummies	Yes	Yes	Yes	Yes
Ancestry dummies	Yes	Yes	Yes	Yes
Observations	187,264	34,790	7,747	13,722

See Table 1 notes for information on the sample. The dependent variable is equal to 1 if the individual is married to someone with the same ancestry, 0 otherwise. The omitted categories are speaks English less than "very well," white, native born, not in the armed forces, and unknown central city status. Size of ethnic group refers to proportion of the MSA population with the same ancestry. Mean ethnic education is equal to the average years of schooling in a person's ethnic group residing within the person's MSA, while mean education is the average years of schooling in the MSA. The robust standard errors in parentheses are clustered on MSA × ancestry cells. Estimates are weighted using the appropriate person-level weights. Significance levels are noted by the following: + significant at 10%; * significant at 5%; ** significant at 1%

difficult to precisely determine why Asian marriage choices do not respond to education, but the high endogamy rates among Asians (see Table 1) are suggestive of ethnic preferences that are too strong to respond to changes in schooling. As discussed previously, a potential explanation for this is that Asians are a relatively small racial group, and so, decisions to marry outside of ethnicity often imply interracial marriages. Cultural taboos against interracial marriages may explain both the high Asian endogamy rates and the lack of

Table 5 Probit marginal effects of education on endogamy by race and nativity

Endogamy	White natives	White foreign born	Hispanic natives	Hispanic foreign born	Asian natives	Asian foreign born
	1	2	3	4	5	6
Years of education	−0.008**	−0.015**	−0.014*	−0.004+	0.003	−0.002
	(0.001)	(0.002)	(0.006)	(0.002)	(0.005)	(0.002)
Mean ethnic education	−0.019*	−0.036*	−0.003	−0.004	−0.012	−0.030*
	(0.009)	(0.015)	(0.014)	(0.012)	(0.027)	(0.013)
Mean ethnic education − mean education	−0.037*	−0.064*	−0.094**	−0.048**	0.062	0.021
	(0.015)	(0.030)	(0.028)	(0.015)	(0.050)	(0.025)
Education × (mean ethnic education − mean education)	0.006**	0.005**	0.005**	0.002**	−0.001	0.000
	(0.001)	(0.002)	(0.002)	(0.001)	(0.003)	(0.001)
Size of ethnic group in MSA	3.109**	3.415**	2.244**	1.003**	3.229	4.214**
	(0.354)	(0.509)	(0.167)	(0.107)	(2.788)	(0.904)
Square of ethnic group size in MSA	−4.618**	−6.212**	−1.892**	−0.792**	−9.272	−19.321**
	(0.837)	(1.384)	(0.220)	(0.184)	(12.054)	(5.190)
Age	−0.006**	−0.020**	−0.011*	−0.004	−0.028**	0.002
	(0.001)	(0.005)	(0.005)	(0.003)	(0.010)	(0.005)
Age squared/100	0.007**	0.024**	0.014**	0.004	0.035**	0.001
	(0.001)	(0.006)	(0.005)	(0.003)	(0.011)	(0.006)

Table 5 (continued)

Endogamy	White natives	White foreign born	Hispanic natives	Hispanic foreign born	Asian natives	Asian foreign born
	1	2	3	4	5	6
Speaks English very well or only English	−0.098**	−0.256**	−0.178**	−0.104**	−0.310**	−0.151**
	(0.021)	(0.019)	(0.016)	(0.009)	(0.038)	(0.012)
Veteran status	−0.016**	−0.063**	−0.039**	−0.032**	−0.016	−0.015
	(0.003)	(0.014)	(0.009)	(0.011)	(0.026)	(0.018)
In metro area, central city	0.025	0.062**	0.018	0.006	0.084*	0.008
	(0.019)	(0.022)	(0.023)	(0.011)	(0.038)	(0.015)
In metro area, outside central city	0.003	−0.002	−0.011	−0.011	−0.009	0.027*
	(0.005)	(0.014)	(0.021)	(0.010)	(0.022)	(0.013)
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes
Ancestry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	170,090	11,948	13,225	15,219	3,949	7,623

See Table 1 notes for information on the sample. The dependent variable is equal to 1 if the individual is married to someone with the same ancestry, 0 otherwise. The omitted categories are speaks English less than "very well", white, native born, not in the armed forces, and unknown central city status. Size of ethnic group refers to proportion of the MSA population with the same ancestry. Mean ethnic education is equal to the average years of schooling in a person's ethnic group residing within the person's MSA, while mean education is the average years of schooling in the MSA. The number of observations across all columns in this Table sum up to the number of observations reported in Table 1. The robust standard errors in parentheses are clustered on MSA × ancestry cells. Estimates are weighted using the appropriate person-level weights. Significance levels are noted by the following: + significant at 10%; * significant at 5%; ** significant at 1%

responsiveness of Asian marriage decisions to changes in education. Because Asian marriage patterns are not sensitive to education, meaningful cross-race comparisons of the cultural adaptability and assortative matching effects can only be made between whites and Hispanics.

In line with the results in Table 4, assortative matching effects, measured by the education interaction terms, tend to be smaller for the foreign born than the native born for both whites and Hispanics. Table 5 also shows that for both the foreign and native born, assortative matching appears more influential for whites than Hispanics. This is consistent with the hypothesis that racial groups with lower average levels of education have weaker preferences for matching on education with a spouse.

Cross-race comparisons of the cultural adaptability effect, measured by the coefficient on the education term, are less straightforward. The cultural adaptability effect is more influential for Hispanic natives than white natives, but the relationship is reversed for immigrants. It is difficult to interpret this result, but we suspect that the seemingly conflicting results stem from a plausibly U-shaped relationship between ethnic preferences and the cultural adaptability effect: Education will have no impact on tastes for endogamy of people whose preferences are too strong to be affected by education as well as people with no inclination towards same-ethnicity spouses to start. Hispanic natives may have a larger marginal effect of education than white natives because they have stronger preferences for endogamy making them more susceptible to changes in education. At the same time, immigrant Hispanics may have such strong tastes for endogamy relative to foreign born whites who their marriage choices do not respond to changes in education.

5 Conclusions

This paper examines three mechanisms through which education affects one aspect of immigrant assimilation, namely, interethnic marriage. On average, education decreases endogamy for all people who identify with a specific ancestry. However, in accordance with the idea that people with more education are less likely to live in or near ethnic enclaves, the negative relationship is not quite as strong after controlling for the proportion of the metropolitan area's population that shares a person's ancestry. We also show that the availability of coethnics with a similar level of education is a significant determinant of interethnic marriage decisions, pointing to the role of assortative matching on education.

The importance of these mechanisms differs across populations. Assortative matching on education appears to be less influential for people who are more culturally attached to their ethnic groups. Specifically, the native born seem to value similarities in education more than similarities in ethnicity relative to the foreign born. Similarly, our results suggest that assortative matching is more important for childhood migrants than immigrants arriving as teenagers. There are also racial differences in the relationship between education and endogamy. The assortative matching effect appears to be slightly stronger for whites than for Hispanics, while the relative role of the cultural adaptability effect depends crucially on nativity. Asian marriage decisions do not appear to be sensitive to education, and so, it is not possible to decompose their education effect into cultural adaptability and assortative matching.

If we assume that marriage to someone with a different ancestry is a measure of a person's assimilation more generally, then several policy implications might be drawn from this analysis. Assortative matching on education implies that in low education ethnic groups, more education leads to less association with coethnics, while in high education ethnic groups, more education results in more association with coethnics. This suggests that if promoting assimilation is a policy goal, then education funds might be most effective if directed toward low-skilled members of low education ethnic groups and least effective if spent on high-skilled members of high education ethnic groups. Since we find stronger assortative matching effects for the native born and immigrants arriving as young children, this is particularly the case for policies encouraging the social integration of more assimilated groups. Our results also suggest that education-focused policies might be least effective for encouraging the social integration of Asians and most effective for Hispanics and whites.

Several important topics are left for future research. First, we note that our foreign-born sample consisted only of immigrants arriving in the USA before the age of 18 years. This sample was chosen because we wanted to include only those immigrants exposed to US marriage markets, and we do not have information on age at marriage in our dataset. Future work may consider whether older arriving immigrants display the same marriage patterns as those who arrive young. Second, our analysis of men does not allow us to draw any conclusions for women. A potentially fruitful avenue for future research is to examine whether there are sex differences in the relationship between education and endogamy. Lastly, future research may explore how the marriage patterns of immigrants and their descendants affect other dimensions of assimilation such as fertility, employment, and education levels of children.

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