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UNIVERSITY OF CALIFORNIA,
IRVINE

Immigrant Integration:
Assessing Education, Health, and Social Ties
by Migration Status and Immigrant Generations

DISSERTATION

submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

In Sociology

By

Thoa V. Khuu

Dissertation Committee:
Emeritus Professor Frank D. Bean, co-chair
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2022

TABLE OF CONTENTS

LIST OF TABLES	iii
LIST OF FIGURES	iv
ACKNOWLEDGEMENTS	vi
VITA	vii
ABSTRACT OF THE DISSERTATION	xi
CHAPTER 1 Introduction	1
CHAPTER 2 Refugee Status, Settlement Assistance and the Educational Integration of Migrants' Children in the United States	5
CHAPTER 3 The Healthy Immigrant Effect and its Erosion: Differences between Refugee and Non-Refugee Immigrants, and the U.S.-Born in Self- Rated Health and Work-Limiting Disability across Duration of Residence	42
CHAPTER 4 Who are Socially Integrated? Evidence from Network Analyses of the Breadth and Depth of Youth's School Friendship Networks by Immigrant Generation	72
CHAPTER 5 Conclusion	110
REFERENCES	114

LIST OF TABLES

Table 2.1	Means and Standard Deviations for Years of Schooling and Other Research Variables by Migration Status and Arrival Period, Adult Foreign-Born Children of U.S. Migrants Arriving from 1980-1995	34
Table 2.2	Regressions of Years of Schooling on Migration Status and Control Variables, Adult Foreign-Born Children of U.S. Migrants, separately for OLS, Country-of-Origin (CFE) and Arrival-Year Fixed Effects (YFE) Models	35
Table 2.3	Regressions of Years of Schooling on Migration Status (MS), Arrival Period (AP), and the Interaction of MS and AP, Adult Foreign-Born Children of U.S. Migrants, Country-of-Origin Fixed Effects Models	36-37
Table 3.1	Descriptive Statistics by Immigrant Background	67
Table 3.2	Logistic Regressions of Poor/Fair Self-Rated Health and Work-Limiting Disability on Immigrant Background and Control Variables	68
Table 3.3	Logistic Regressions of Poor/Fair Self-Rated Health and Work-Limiting Disability on Refugee Status, Duration of residence, and Control Variables (Foreign-Born Sample Only)	69
Table 4.1	Descriptive Statistics by School and Immigrant Generation	98-99
Table 4.2	Exponential Family Random Graph Model Results for Reciprocated Friendship	100
Table 4.3	Exponential Family Random Graph Model Results for All Friendship Nominations	101-102
Table 4.4	Predicted Friendship Nomination Probabilities for Same Ethnic and Same Generation	103
Table 4.5	Odds of a Friendship Nomination by Generation Pairing, Results Derived from ERGM model of All Friendship Nominations	104

LIST OF FIGURES

Figure 2.1	Level of Governmental Assistance for Refugees from 1980 to 1995	38
Figure 2.2	U.S. Refugee Admissions from 1980 to 1995	39
Figure 2.3	Refugee Adjustment to LPR Status by Arrival Period and National Origin	40
Figure 2.4b	Refugees' and Non-Refugees' Children's Years of Schooling Adjusted for Differences in Other Variables (Table 3, Model 2)	41
Figure 2.4a	Refugees' and Non-Refugees' Children's Years of Schooling Adjusted for Differences in Other Variables, and Naturalization and English Proficiency (Table 3, Model 3)	41
Figure 3.1a	Probability of a Poor/Fair Self-Rated Health by Refugee Status and Duration of U.S. Residency, Adjusted for Differences in Other Controls (Table 3.3, Model 1a)	70
Figure 3.1b	Probability of a Poor/Fair Self-Rated Health by Refugee Status and Duration of U.S. Residency, Adjusted for Differences in Healthcare Access, and Other Controls (Table 3.3, Model 1b)	70
Figure 3.2a	Probability of a Work-Limiting Disability by Refugee Status and Duration of U.S. Residency, Adjusted for Differences in Other Controls (Table 3.3, Model 2a)	71
Figure 3.2b	Probability of a Work-Limiting Disability by Refugee Status and Duration of U.S. Residency, Adjusted for Differences in Healthcare Access, and Other Controls (Table 3.3, Model 2b)	71
Figure 4.1a	Mean Friendship Nominations by Generational Status at Midwest High	105
Figure 4.1b	Mean Friendship Nominations by Generational Status at Southwest High	105
Figure 4.2	Mean Proportion of Reciprocated Friendships that are Same- versus Cross-Ethnic by Immigrant Generation	106
Figure 4.3	Mean Proportion of Reciprocated Friendships that are Same- versus Cross-Generation by Immigrant Generation	107
Figure 4.4a	Reciprocated Friendship at Midwest High by Students' Ethnoracial Status and Immigrant Generation	108

Figure 4.4b Reciprocated Friendship at Southwest High by Students' Ethnoracial Status and Immigrant Generation

109

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ABSTRACT OF THE DISSERTATION

Immigrant Integration: Assessing Education, Health, and Social Ties by Migration Status and

Immigrant Generations

By

Thoa Khuu

Doctor of Philosophy in Sociology

University of California, Irvine, 2022

Dr. Frank D. Bean and Dr. Susan K. Brown, co-chairs

The U.S. immigrant-origin population is diverse not only in their sociodemographic characteristics and auspices of migration, but also in their integration outcomes. Each of the empirical studies that make up this dissertation focuses on how migration status, with its accompanying policies and social dynamics, affect the education, health, and social ties of immigrants and their descendants. The first empirical study, Chapter 2, explores how refugee status and levels of governmental assistance at arrival affect refugee children's adult educational outcome by comparing the years of schooling completed by refugees and non-refugee immigrants who arrived as children across three periods that cover the years between 1980 and 1995. The second study, Chapter 3, explores differences in health status between refugees and non-refugee immigrants in comparison to the U.S.-born, how health trajectories change across duration of residence, and whether healthcare access mediates the relationship between duration of residence and health. The last study, Chapter 4, examines the school friendship networks of youth to better understand whether and how immigrant generations affect friendship choices and intergroup dynamics. Findings from the first two studies suggest that immigrants, both refugees

and non-refugees, experience better integration outcomes when they receive sufficient governmental assistance and healthcare access. The last study finds immigrant-origin population demonstrates greater social integration across immigrant generations, but this process may be limited by patterns of friendship segregation demonstrated among more long-standing native-born groups. Chapter 5, the conclusion chapter, highlights the theoretical and policy implications of the research findings by re-emphasizing how reception factors at both the policy and social levels may shape pathways to integration for the U.S. immigrant-origin population.

CHAPTER 1

INTRODUCTION:

IMMIGRATION AND IMMIGRANT INTEGRATION IN THE UNITED STATES

Immigration has been the main driver of U.S. population growth and demographic change since the passage of the 1965 Immigration and Nationality Act (i.e., the Hart-Celler Act). In 2015, exactly half a century after this watershed immigrant reform, the population of post-1965 immigrants and their descendants reached 72 million, accounting for 22% of the U.S. population and more than half of its growth during this period (Lopez, Passel, and Rohal 2015). The share of the U.S. population that is immigrant-origin is expected continue to rise throughout the next half a century.¹ The 1965 Act and other subsequent immigration reforms increased the number of categories of legal admission to the United States, including an official category for refugees and asylees, changes that ironically also coincided with larger flows of unauthorized migrants (National Academies of Sciences 2015). Thus, today's U.S. immigrant-origin population is both socioeconomically and ethnoracially diverse. Some immigrants are highly educated and arrived via employment sponsorship, some are lower-skilled unauthorized workers, some are low-resource survivors of conflicts and disasters, and still many others immigrated to reunite with families. Compared to earlier waves, post-1965 immigrant waves hail less from Europe and more from Latin America and Asia, thus increasing the ethnoracial diversity of the overall U.S. population.

¹ For the purpose of this research, immigrant-origin individuals refer to those who are immigrants or the children and grandchildren of immigrants who arrived in the United States after the passage of the 1965 Immigration Act.

Given the size and diversity of the U.S. immigrant-origin population, understanding how well immigrants and their descendants fare and the extent to which they are integrated into U.S. society is a critical topic of research. Integration describes the process by which immigrants and their descendants become more active participants in the major institutions of and receive greater social acceptance from the society they have joined over time (Bean et al. 2015; National Academies of Sciences 2015). Research has generally found that the immigrant-origin population in the United States has experienced changes over time that are indicative of greater integration on a variety of dimensions, from civic to spatial, socioeconomic, sociocultural and health (Bean et al. 2015; Kasinitz et al. 2009; National Academies of Sciences 2015). Still, a significant degree of heterogeneity exists among immigrant subgroups. Some groups, such as unauthorized migrants and ethnoracial minorities, may be facing particularly difficult political or social challenges that may slow their integration (Bean et al. 2015; Portes and Zhou 1993; Telles and Ortiz 2008). Also, integration on certain dimensions, such as sociocultural, is not inevitable; some individuals may choose to retain certain parts of their pre-migration cultural practices that may continue to benefit them (Lee and Zhou 2015). Nevertheless, it is generally the case that greater immigrant integration implies increasing parity with long-standing native-born groups and better outcomes in various life domains (National Academies of Sciences 2015). Thus, understanding the factors that sustain heterogeneity within the immigrant-origin population, along with changes that occur across the life course and immigrant generations leading to integration, are of particular importance.

Immigration as a process, with its rules and regulations, affects who immigrates to the United States under what admission categories, as well as the kinds of receptions they received upon arrival. The first two empirical chapters of this dissertation explore differences in the

education and health outcomes between refugees and non-refugee migrants in specific. The aims of the comparative studies are to better understand how differences in immigrant selection and reception context, denoted by refugee status versus other immigrant admission categories, affect newcomers' long-term integration and well-being. Refugees are involuntary migrants who have experienced persecution or have a well-founded fear of persecution on account of their race, religion, nationality, membership in a particular social group, or political opinion (United Nations 1951).² Upon arriving in the United States, they receive various governmental assistances that are often not readily available to other newcomers. The nature of refugees' displacement and reception after arrival suggests the opportunities and challenges facing refugees may differ from those facing non-refugee immigrants. Yet, due to a dearth of comparative research on refugee and non-refugee integration, the question of how refugee status affects integration remains unclear.

Integration also takes time. Many studies on immigrant integration, especially refugee integration, focuses on measurable outcomes occurring early in the resettlement process. There is less attention paid to outcomes that occur later across the life course or across multiple generations. While it is valuable to gauge how immigrants fare during the precarious initial stages of resettlement, many of the effects of immigration deepen over time and/or are not even visible until later in life. Various dimensions of integration may not be complete within one generation after arrival. Thus, in each of the three separate but related studies that make up this dissertation, I adopt a long-term approach to the study of immigrant integration by examining the

² For the purpose of this research, I refer to both refugees and asylees as refugees. Refugees and asylees resettled in the United States under the same category of admission and are eligible for the same kinds of resettlement assistance. The one major difference is refugees applied for refugee status outside of the United States while asylees applied for the same status *after* having entered the country (ORR 1980, INS 1980).

adult education attainment of immigrant children, immigrant health trajectory across duration of U.S. residence, and youth's social ties across immigrant generations.

In the first two empirical chapters, I analyze nationally representative survey samples of the U.S. population, collected by the U.S. Census Bureau across multiple decades, to examine immigrant education and health. Chapter 2 explores how levels of resettlement assistance upon arrival and their decline across arrival periods affect refugee children's educational attainment later in adulthood, especially in comparison to non-refugee children whose families were not eligible for resettlement assistance. Chapter 3 not only compares the health status of refugees and non-refugees to that of the U.S.-born but also examines whether and how health status differentially changes across duration of residence for the two immigrant groups. In the last empirical chapter, Chapter 4, I apply social network techniques to examine friendship data collected at two immigrant-diverse high schools in the United States in order to gauge the extent to which students of different immigrant generations are socially integrated in school.

One common thread that cuts across the findings of the three studies is the importance of context of reception in immigrant integration. This includes public assistance in the forms of resettlement and public health policies as well as the kinds of intergroup dynamics and structures that exist within a given social context. Such factors may shape how immigrants and their descendants are received and supported after arrival, with implications for their long-term integration and well-being. In Chapter 5, I summarize the findings of the three empirical chapters, discuss their contribution to the study of immigrant integration in general, and note the studies' research limitations and possible future directions.

CHAPTER 2

REFUGEE STATUS, SETTLEMENT ASSISTANCE, AND THE EDUCATIONAL INTEGRATION OF MIGRANTS' CHILDREN IN THE UNITED STATES

INTRODUCTION

Initial relations between immigrants and host societies seem likely to matter for immigrant integration, with favorable host-society perceptions of migrants and generous support for their settlement assistance facilitating integration processes (Motomura 2021). Thus, countries, such as the United States, that have provided concrete settlement assistance to refugees, but not consistently to other migrants (Haines 2007), would seem more likely to evince greater and faster integration among refugees. However, research on refugees in the United States has yielded inconsistent findings concerning whether they experience integration advantages compared to non-refugee migrants. Some immigration scholars view US refugee policy as successfully facilitating economic integration (Jimenez 2011; Waters and Pineau 2015; Hooper, Zong, Capps, and Fix 2016; Tran and Lara-García 2020). Others, however, have challenged this conclusion by suggesting that systemic problems in the reception many refugees have received in the United States curtail integration (Brown and Scribner 2014; Fee 2018; Kyriakides et al. 2018; US Senate Committee on Foreign Relations 2010). We suggest here that these seemingly contradictory findings may appreciably owe to refugees having arrived at different time periods and under different auspices that offer varying degrees of settlement support (Zolberg 2006, Motomura 2021). The present article seeks to shed light on this integration anomaly by focusing on refugees coming after passage of the 1980 Refugee Act, which standardized US refugee admission criteria and introduced legal and comprehensive

provisions supporting refugee resettlement (Bruno 2016). As we show, however, the degree of this support diminished over time. Thus, we hypothesize that refugees will evince greater integration compared to migrants not receiving such support, all else equal, but that this integration advantage will shrink with reductions in levels of refugee settlement assistance over time.

The United Nations defines refugees as persons who are “outside their own country and who are unable or unwilling to return because of persecution or a well-founded fear of persecution on account of race, religion, nationality, membership in a particular social group, or political opinion” (Tichenor 2002: 147). Since the 1980 Refugee Act, the US government has used this *de jure* definition to adjudicate applications for refugee status, although it has been critiqued for inconsistencies in practice.³ In this article, we focus on refugees in the official legal sense of the term (i.e., those who have been granted refugee status by the US government) because since 1980, such persons have, by law, received tangible governmental support of various kinds to facilitate their settlement.⁴ Our specific research aims are to gauge empirically (a) whether the sheer availability of such support appears to boost the education of refugees’ children, compared to children of migrants who do not receive such assistance (from this point on, we refer to such migrants as “non-refugees”) and (b) the degree to which variation in the

³ During the Cold-War period, the United States accepted refugees from majority-communist countries while often rejecting the asylum claims of those from other countries, especially from Central America (Esbenshade 2011; Lennox 1993; Menjivar 2006; Motomura 2020; Zolberg 1988).

⁴ For this reason, we do not include in the refugee category persons who migrated for reasons of disaster or persecution but did not receive protection under US refugee status. Although many observers justifiably view such migrants as “refugees,” their lack of official legal standing as refugees often means that they do not receive tangible governmental settlement assistance and must fend for themselves as unauthorized entrants (e.g., a case in point would be migrants who fled political conflicts in Central America in the 1970s). Because of our interest here in assessing settlement policy’s effects, we do not classify such persons as refugees.

availability of settlement assistance over time affects the educational attainment of refugees' children.⁵

Empirical investigations of such research questions are challenging for several data and measurement reasons. First, comparing the effects of settlement assistance on integration requires examining refugees who arrived in periods with varying levels of assistance and under various contexts of departure (e.g., differing national origins and socioeconomic backgrounds). Second, comparing refugee and non-refugee migrants on important integration measures (like educational attainment) is challenging because the schooling of adult entrants has already occurred in origin countries. We, thus, focus here on migrant's children's educational attainment. Third, research requires samples large enough to provide adequate bases for detecting differences in children's education resulting from variation in levels of settlement assistance. By using large US datasets compiled from the US Census and the American Community Survey across multiple years, we can adequately detect possible differences in educational integration by variation in degree of settlement assistance, thus shedding new light on whether and to what degree the provision of such assistance to refugees boosts their children's educational attainment compared to that of their non-refugee counterparts. If our findings reveal higher educational attainment for refugees' children, all else being equal, and if the degree of settlement assistance over time is positively associated with the size of such advantage over time, the results would imply that adopting adequate settlement-assistance policies for *all* migrants, not just refugees, would benefit immigrant integration in general.

⁵ Accompanying (i.e., foreign-born) children are more likely to directly and immediately experience the benefits of any governmental aid that their parents received, compared to US-born children of immigrants. For this reason, and for other reasons discussed later, we focus only on the educational attainment of these individuals, whom we refer to as refugees' and non-refugees' children.

The rest of this article consists of six sections. First, we introduce theoretical perspectives on migrant integration that emphasize how the nature of initial host society/migrant relationships affect integration. Second, we apply these perspectives to the case of refugees coming to the United States since 1980, including the development of specific research hypotheses about expected relationships between settlement assistance and refugee children's integration. Third, we describe in detail the data sources we use and the measurement of key independent and control variables. Fourth, we present and discuss the findings. Fifth, we present and discuss the results of several robustness checks carried out to assess the adequacy of our findings. Finally, we discuss the implications of our analysis for both US refugee and immigration policies.

RELATIONAL THEORETICAL PERSPECTIVES ON IMMIGRANT INTEGRATION

The ways host societies and migrants define their initial relationships and responsibilities toward one another carry important implications for integration (Motomura 2021). Such dynamics are often suggested in definitions of integration and provide useful bases for understanding possible differences in the educational attainment of refugees' and non-refugees' children (Brown and Bean 2006; Jimenez 2017; Waters and Pineau 2015). Emphasis on host-society/migrant relations has emerged from two separate, but complementary, approaches that envision immigrant integration (whether social, political, economic, or spatial) as intertwined with institutional and other aspects of the host society that mirror the society's perceptions, expectations, and receptions of migrants (Reitz 2002). The first approach, most emphasized by Jimenez (2017), highlights the importance of viewing assimilation (or integration) as a "two-way street" that involves migrants coming to resemble the members of host societies and host societies taking on migrants' features and tendencies over time. A second approach, articulated

by Motomura (2006; 2021), emphasizes that host-society initial expectations about eventual immigrant citizenship matter greatly for instigating settlement assistance to facilitate newcomer integration.

Initial governmental expectations that migrants deserve and ultimately will become full-fledged members of society are likely to facilitate the provisions of governmental economic and social support for immigrants (Motomura 2006). Thus, during much of the 19th-century, US migrants were generally expected, in due course, to qualify for and obtain citizenship, an orientation that undergirded the view that newcomers deserved tangible and intangible settlement support.⁶ This view, coupled with the recognition that the nation needed migrants to fuel its growth, led to the enactment of the 1862 Homestead Law, which allowed migrants who filed a declaration of intent (to become a citizen) to take advantage of land grants from the US government (Zolberg 2006). This reception, along with the governmental assistance that characterized US immigration policy until the mid-19th century, stands in stark contrast to more *laissez faire* (i.e., neutral) views of migrants prevalent in the late-19th and early-20th century (US Commission on Immigration Reform 1997). The earlier, more favorable perceptions of newcomers presaged greater acceptance of new entrants and the provision of more positive, inclusive reception contexts that included settlement assistance, which was generally unavailable to early-20th-century newcomers, who were often perceived in more hostile, nativist-oriented terms (Higham 1955), thus creating challenges to their eventual integration.

⁶ Some might think this broad pro-immigrant orientation did not characterize the Chinese immigrant experience. But initially, around the time of the California Gold Rush in the 1840s and culminating in the 1868 Burlingame Treaty, Chinese immigrants were often sought and welcomed on the West Coast. This tendency, however, eventually dissipated with the emergence of labor market competition and strife accompanying the construction of the first intercontinental railroad, which was one of the factors leading to the Chinese Exclusion Act of 1892 (Ngai 2004).

Recent cross-national studies have shown that positive relations between the host society and migrants, at the country level, matter for the adoption of policies to attract and support specific groups of migrants, actions that also induce higher levels of political engagement among newcomers (Bloemraad 2006; Poros 2010). At the individual level, researchers have also found that favorable relational contexts foster more migrant/native friendships, more contact between natives and newcomers, and, subsequently, greater warmth of welcome experienced by migrants (Fussell 2014; Kotzur, Tropp, and Wagner 2018; Leszczensky and Pink 2019; Tropp et al. 2018). Regarding US reception of refugees, Portes and Rumbaut (2001, 2014) note that Southeast Asian refugees in the United States experienced more favorable contexts of reception compared to other migrants, resulting in levels of economic integration that cannot be explained by their human capital endowments alone. In an inverse vein, the authors' segmented assimilation theory suggests that unwelcoming receptions in the form of hostile governmental actions and legal strictures facing migrants, especially unauthorized migrants, severely hamper immigrant integration, with such processes constituting the flip side of positive integration dynamics.

Host-Society/Refugee Relational Dynamics in the United States

This article focuses on comparing legal permanent resident entrants and refugees. The latter sometimes have faced more positive reception factors (i.e., the initial provision of assistance at reception stemming from the host society's willing to assist newcomers' resettlement), thus fostering more favorable contexts for integration (Motomura 2021). In 1980, for example, the United States, for the first time, passed permanent refugee legislation (Martin, 2011). Called the Refugee Act of 1980, the legislation served two major purposes: 1) to make general and systematic the procedures for admitting refugees to the United States and 2) to

provide uniform federal assistance to resettled refugees to facilitate their economic self-sufficiency (Brown 2011; Bruno 2011; 2016).⁷ In essence, it is the only US immigration-governing policy that includes specific provisions for immigrant *integration*.

The 1980 Act established the Office of Refugee Resettlement (ORR) to oversee the distribution of cash, medical, and supplemental income assistance (for refugees with special needs and disabilities), as well funds for a host of support services, including English training, employment services, and citizenship preparation education (Bruno 2016). Beyond such direct benefits and services made available to newly arrived refugees, the US federal government funded voluntary agencies and school districts serving a significant proportion of the refugee population (US ORR 1980). Finally, according to the US Immigration and Naturalization Service (INS),⁸ refugees were granted an expedited pathway to citizenship equivalent to legal permanent resident (LPR) status at entry (INS 1988; Martin 2011). Unlike other LPRs, who had to wait at least five years to apply for US citizenship, refugees who adjusted to LPR status (usually one year after arrival) could apply their time as refugees to fulfill the 5-year requirement for immigrant naturalization (INS 1980). This benefit is considerable, given that most migrants receiving LPR status (52 percent) do so after having lived in the United States for quite some time under a different legal status (Waters and Pineau 2015). In general, the more positive relational treatments for refugees in the form of greater resource accessibility created an environment in which they and their children were more likely to attain higher levels of integration than non-refugee migrants, all else being equal.

⁷ Groups eligible for the same benefits and services as refugees include “asylees, Cuban/Haitian Entrants, Amerasians, victims of severe forms of trafficking, and Iraqi and Afghan Special Immigrants” (GAO 2011).

⁸ In 2003, the US Immigration and Naturalization Service dissolved and was superseded by three new entities (the US Citizenship and Immigration Services, the US Immigration and Customs Enforcement, and the US Customs and Border Protection).

Although the 1980 Act was intended to be comprehensive and long lasting, the levels of actual settlement assistance it provided soon started to erode in both the dollar amounts allocated by Congress for the purpose of refugee support and the length of time newly arrived refugees were eligible to receive cash and medical assistance (Bruno 2011; GAO 1990). Based on data from the ORR's annual reports to Congress, Figure 2.1 shows the declines in funding and length of eligibility available to refugees from 1980 to 1995, the time period examined in this article (ORR 1980-1995). A report by the US General Accountability Office (1990) noted that between 1985 and 1989, the average absolute dollar amount that each refugee received declined 48 percent, from \$6,921 to \$3,600. Also, a greater portion of the cost of support was shifted from the federal government to individual states, which, unsurprisingly, resulted in cutbacks in important support services in many states (GAO 1990). Although the federal government justified these changes as a way to incentivize newcomers to more quickly become self-reliant, studies and reports from researchers and governmental committees alike pointed to insufficient funding as a challenge for refugee integration in the United States (US Senate Committee on Foreign Relations 2010; Bruno 2011; Brown and Scribner 2014; Fee 2018).

[Figure 2.1 about here]

Such changes suggest that refugees' children's educational attainment would reach its peak for those who arrived during the early 1980s, when governmental assistance for refugees was at its highest levels, and that any margin in educational attainment for refugees' children, compared to non-refugees' children, would diminish across the late 1980s and into the 1990s. Thus, drops in schooling gaps between refugees' children and non-refugees' children would

result from changes in the former's education, not from shifts in non-refugees' children's schooling. Additionally, financial support for both English language education and citizenship training was prominent in the tangible assistance provided to refugees in the 1980 Act. Such tangible support reflected the host society's investment in refugees because becoming naturalized and attaining English proficiency increase structural access to economic opportunities and facilitate social participation (Portes and Rumbaut 2014; Tran and Lara-García 2020). Naturalization and greater English proficiency, thus, would be expected to account for (i.e., mediate) a large portion of refugees' children's education advantage over non-refugees' children, who did not receive such benefits.

Research Hypotheses

Based on the above conceptual and theoretical considerations, we formulate the following hypotheses about how educational attainment varies across categories of migration status and by three arrival periods. *Hypothesis 1*: Because refugees receive more tangible governmental support than non-refugee migrants, we expect refugees' children to show higher educational attainment than their non-refugee counterparts, all else being equal. *Hypothesis 2*: Because the levels of support provided refugees in the 1980 Refugee Act began to diminish after its passage, we expect any educational attainment advantage for refugees' children to diminish across arrival periods (i.e., from 1980-1984 to later periods). *Hypothesis 3*: We expect any diminishing gap in educational attainment between the two groups to result from declines in the educational attainment of refugees' children across the arrival periods, not from changes in the education of non-refugees' children. *Hypothesis 4*: We expect naturalization and English proficiency to mediate a notable part of any positive effects of refugee status on educational attainment.

DATA, MEASURES, AND METHODS

Data Sources

The lack of information on either refugee status or parents' socioeconomic characteristics, or both, in large surveys, along with our need to identify refugees and obtain usable information on the completed education of adult migrants who arrived in the United States as children, requires that we pull together and work with multiple data sources. To obtain all the information and kinds of migrants needed, we employ three sources of official governmental data. The first provides much of the data for our main analytic sample and consists of pooled information on respondents from the American Community Surveys (ACS), 2011-19, conducted by the US Bureau of the Census (Ruggles et al. 2020). Each ACS provides individual-level information on educational attainment and other variables for adults who arrived in the United States between 1980 and 1995, inclusive of or before the age of 18, *and* who had reached at least age 24 by the time of the particular ACS survey in which they participated.

The second data source involves information from the 1990 and 2000 Integrated Public Use Microdata samples (IPUMs) from the US Bureau of the Census (Ruggles et al. 2020). These data enable us to develop aggregate information on the characteristics of arrival cohorts of migrants coming during the 1980s and 1990s. These cohorts contain the parents of the migrants from the ACS data analytic sample, whom we connect with the ACS respondents, using corresponding arrival years and national origins. The third data source, compiled by the agency formerly called the Immigration and Naturalization Service (INS), contains administrative information on the numbers of refugees and other persons becoming LPRs in the United States from specific countries from 1980 through 1995 (see INS 1980-1995).

Our focus on educational attainment as a key indicator of immigrant integration derives from its vital importance for socioeconomic mobility (Breen and Muller 2020). Here, we examine the education of migrants who arrived in the United States between ages 0 to 18 and who were ages 24 or older by the time period under study. We do not analyze the schooling of migrants who arrived as adults because their education would largely have taken place outside the United States and, thus, would not have been a function of their destination-country integration experiences (Hirschman, Kasinitz, and DeWind 1999). We also focus on those who came during the period 1980 to 1995, allowing us to capture as much of the force of official refugee status on migrants' children's educational attainment as possible. Additionally, many entrants coming to the country after 1995 were still too young to have completed their schooling.

Two pathways exist to apply for refugee status. One involves applying from abroad and the other from within US territories (INS 1980-1995). Successful applicants in the former case are referred to as refugees and in the latter, as asylees (INS 1980-1995). Both kinds qualify for financial and medical assistance, as well as support services, from the US government and an expedited pathway toward citizenship, although the timeline from when they are eligible for assistance varies due to differences in when and where they applied for status (ORR 1980-1995; INS 1980-1995). In this analysis, we often rely on governmental statistics from INS, which sometimes places refugees and asylees in the same category. During the time period studied, however, asylees comprised only 5 percent of the total applications approved (INS 1995). Given this small number and given that our main research goal is to shed light on how official refugee status affects immigrant integration, we do not distinguish between those gaining refugee status abroad (i.e., refugees) and in the United States (i.e., asylees) and refer to them collectively as refugees.

Measures of Dependent and Independent Variables

Educational attainment. We measure educational attainment by the number of years of schooling completed by respondents. The ACS reports respondents' highest education level completed. There are a total of 24 categories, ranging from "no schooling completed" to "doctoral degree," which we recode into a numerical continuous variable by assigning each education level the standard number of years of schooling required to complete it.⁹

Initial host-society/migrant relational factors. The nature of initial relationships between the host society and migrants matter for integration, especially host-society expectations and support for immigrant integration (Motomura 2020). Here, we examine how and to what degree two relational factors influence migrant children's educational attainment. The first is *migration status*, consisting here of refugee and non-refugee entrants. We identify refugee status, using a proxy measure, as described in detail in the Online Appendix. Essentially, we use individuals' self-reported national origins and migration years to calculate their likelihood of being admitted to the United States as refugees. Tangible governmental assistance for refugee resettlement and integration has been available for refugees since 1980, but not for non-refugees. To be sure, some members of certain refugee groups (e.g., Hungarians, Cubans, Southeast Asians) were admitted and sponsored by the federal government prior to 1980, but only under temporary refugee programs enacted on an ad-hoc basis (e.g., the Displaced Person Act and the Cuban and Indochinese Refugee Adjustment Acts) and characterized by inconsistency in administration and federal support (INS 1988). Thus, we examine comparisons of assistance for refugees and non-refugees starting in 1980.

⁹ Research comparing the performance of continuous and categorical estimation show that these estimates are very nearly identical when using variables with five categories or more (Rhemtulla, Brosseau, and Savalei 2012).

The second factor that reflects variation in relational support is *arrival period*. As detailed above, the amount of federal aid and length of support for refugees were highest during the early 1980s, when the Refugee Act was first passed. Later in the 1980s and into the 1990s, support levels notably declined. When the Cold War came to an end in 1990, the US geopolitical orientation also shifted, which had the effect of further reducing governmental incentives to maintain assistance levels (Martin 2011). We capture these changes in the degree of support and the nature of reception by grouping migrant arrival times into three periods: early (1980-1984), middle (1985-1989), and late (1990-1995) arrival periods.

Control Variables:

Sociodemographic Background. Other variables are controls that adjust for sociodemographic differences that may affect educational outcomes, including age at entry, arrival year, and gender. We calculate age at entry by subtracting the respondent's self-reported year of immigration from birth year. This variable captures early developmental exposure to the United States and would be expected to relate to integration negatively, with older arrivals experiencing less integration than younger arrivals (Myers, Gao, and Emeka 2009; Lee and Edmonston 2011; Beck, Corak, and Tienda 2012). The year a respondent reported arriving in the United States is measured from 1980 (the earliest arrival year included in this analysis) and is used to account for a temporal trend of increasing tendencies to pursue higher education in the United States that may affect migrants' children's educational attainment (Snyder 1993). We also control for gender because it is a known correlate of educational outcomes, especially among the children of migrants (Bean, et. al. 2011; Feliciano and Rumbaut 2005).

Ethnoracial status. Because ethnoracial status is related to educational attainment, we also adjust for it in the regression models. We use four ethnoracial groups: Hispanics, Asians, Blacks, and Whites. We sort foreign-born respondents in the ACS into one of these mutually exclusive groups based on their answers to two questions, one asking for their race and the other for whether they were of Hispanic origin. A small number of cases (268) were dropped from the analysis because respondents did not specify a race beyond “other” and reported being non-Hispanic.

Socioeconomic background. Because parental socioeconomic status (SES) is known to be a strong predictor of educational attainment, it is important to control for it in the analysis (Portes and MacLeod 1999). Due to the lack of individual-level indicators of parental SES in ACS data, we employ a measure of the average SES for the annual cohorts of arrivals with the same national origin and immigration year as the migrants’ children (see Online Appendix for more details). We use three other indicators: maternal year of schooling, family size, and family income as a percentage of poverty. Together, these country/year cohort averages are used as controls in regressions of educational attainment on host/migrant relational factors.

Resources after migration. Two factors that may potentially shape migrants’ children’s educational outcomes and may themselves be influenced by host/migrant relational factors are English proficiency and naturalization (Portes and Rumbaut 2014; Tran and Lara-García 2020). We code respondents as English proficient if they reported speaking English as their only language or speaking English well or very well. We also note whether the respondent had obtained US citizenship. Including these variables in the analyses makes it possible to assess one of our hypotheses: whether and to what extent governmental support serving to facilitate refugees’ pathway to English proficiency and citizenship (e.g., English and citizenship trainings)

mediates any educational differential observed between the children of refugees and those of non-refugees.

Analytic Model and Plan of Analysis

To model the direction and degree of relationships between host-society/migrant relational factors and migrants' children's educational attainment, we use ordinary least squares regression, controlling for other factors and including mediating factors. To additionally account for the influences of differences in national origin, we employ origin-country fixed effects models, which adjust for unmeasured differences among respondents associated with their having come from particular origin countries. We anticipate several patterns to emerge from the data. First, we expect refugee status to have a positive effect on educational outcome, even after accounting for sociodemographic and socioeconomic background factors, as well as origin-country differences. Second, we expect educational attainment to decrease across the three arrival periods among refugees, thus diminishing the educational differential between the children of refugees and non-refugees. Finally, we expect naturalization and English proficiency to mediate a notable portion of any positive effect of refugee status on educational attainment.

FINDINGS

Descriptive Patterns

According to US government statistics, the highest refugee flow after the 1980 Refugee Act was enacted occurred in that year, when over 200,000 refugees were admitted to the United States (see Figure 2.2; INS 1980-1995). Subsequently, declines in refugee admission set in until 1983, when the admission rate leveled off at 60,000 to 70,000 per year. From 1989 until 1995,

admissions remained at or above 100,000 per year, an increase coinciding with the end of the Cold War and the Soviet Union’s collapse. The stacked bar graph in Figure 2.3 shows the national origins of the top five refugee groups that gained LPR status in the United States for the three arrival periods distinguished here.¹⁰ In 1980 to 1984, the overwhelming majority of refugees who gained LPR status (about 70 percent) arrived from Southeast Asian countries (i.e., Cambodia, Laos, and Vietnam). Across the latter two periods, fewer Southeast Asians arrived, and the numbers of refugees from Iran, Cuba, and the “other” category grew, reflecting increasing diversity in refugees’ national origins. Also, from 1990 to 1995, a sudden influx of refugees from countries that had been a part of the Soviet Union arose, suggesting a ripple effect at the end of the Cold War. Overall, the changing rates of admission and shifting national origins among refugees shown in Figures 2 and 3 indicate the importance of controlling for differences in arrival period and national origin in our statistical analyses.

[Figure 2.2 about here]

[Figure 2.3 about here]

We obtain information on refugees’ and non-refugees’ adult children, using pooled data from the 2011 to 2019 ACS. The sample includes a total of 73,642 observations, 34,216 of whom we identify as arriving as part of a majority-refugee migration flow based on arrival-year/origin-country data, as explained above. We classify these individuals as refugees’ adult children. Another 34,631 observations are classified as non-refugees’ children because the migration flows based on their origin country and arrival year contained fewer than 5 percent

¹⁰ Refugees may adjust to LPRs after 1 year of residence in the United States.

refugees.¹¹ Table 2.1 displays descriptive statistics by migration status (i.e., for refugees and non-refugees) and arrival period. Two patterns stand out. First, refugees' and non-refugees' children exhibit different levels of educational attainment, as well as differences in ethnoracial, sociodemographic, and socioeconomic status. Second, while SES composition for non-refugees' children varies little across the three arrival periods (maternal years of schooling = 10.0-10.1, family size = 4.8-4.9, and family income = 181.8-215.6), the SES composition for refugees' children varies considerably (maternal years of schooling = 8.8-12.9, family size = 5.2-4.2, and family income = 155.2-284.2), reflecting the shifting national origins of refugees across arrival periods.

[Table 2.1 about here]

At ages 24 or older, refugees' children show higher educational attainment than non-refugees' children (1.5 years, 1.4 years, and 2.4 more years of education during the early, middle, and late arrival periods, respectively). Hispanics constitute an ethnoracial majority in all periods among non-refugees' children (with their proportions in the samples ranging from 0.63 to 0.67), while among refugees' children, the large proportion of Asians in the early-arrival period (0.88) decreases as the proportions of Whites and Hispanics rise in the latter two periods. In the late-arrival period, Asians comprise only about a quarter of the refugee group. Corresponding to reported US government statistics on refugees' national origins, we find that the vast majority of Asian refugees' children in the ACS sample came from four Southeast Asian countries:

¹¹ Note that the number of cases classified as non-refugee children is a 15-percent sample from the original number of cases qualified as non-refugees and that we use this dichotomous classification for descriptive purposes only. In our later regression analysis, migration status is based on refugee likelihood probability.

Cambodia, Laos, Thailand, and Vietnam. Hispanic refugees' children are mostly Cuban, although there is a small but notable proportion of Nicaraguans. Most White refugees' children arrived from countries in Eastern Europe, with the exceptions being Afghanistan and Iraq. The proportion of Blacks is lowest across all arrival periods and migration statuses, and most Black refugees' children came from Haiti and Ethiopia. Regarding socioeconomic background, very little variation emerges among the non-refugee group across arrival periods, but the refugee group evinces a bifurcated pattern. Refugees' children who arrived during the later-arrival period exhibit the highest levels of parental human capital (with an average maternal year of schooling of 12.9, a family size of 4.2, and a family income 284.2 percent above the poverty threshold), while refugees' children who arrived during the early period were generally the most disadvantaged except on family income (showing a maternal schooling of 8.8 years and a family size of 5.2).

Overall, these results suggest that variation in migration status and arrival period are likely to influence migrants' integration patterns. The differences across and within migration-status groups in ethnoracial background and parental human capital profiles indicate the need to control for background factors in analyses of differences in children educational attainment. Also, refugees' children, regardless of arrival period, show decisively higher rates of naturalization and somewhat higher levels of English proficiency than non-refugees' children. This pattern, too, is consistent with the idea that refugees' children will show higher educational integration than non-refugees' children. We later assess the extent to which these factors mediate such education differentials.

Multivariate Analyses of Refugee Status and Control Variables

Table 2.2 shows results for multivariate analyses from ordinary least squares (OLS) regression. We first examine the zero-order relationship between refugee status and educational attainment shown in the first column ($b = 1.85$, $p < .01$). Without controlling for any other factors, refugees' children attain 1.85 years more schooling than non-refugees' children. This difference is reduced to 0.62 ($p < .01$) in the model containing controls (column 2), where we adjust for ethnoracial, sociodemographic, and socioeconomic differences between the two groups. Table 2.2 also includes results from two fixed effects (FE) models that each control for heterogeneities across arrival year and origin country. While the effect of refugee status remains almost the same in the arrival-year FE model (column 3: $b = 0.67$, $p < .01$) compared to the preceding model, it decreases by a fourth in the origin-country FE model (column 4: $b = 0.43$, $p < .05$), suggesting that country-level heterogeneity, but not arrival-year heterogeneity, accounts for some of the remaining educational advantage among refugees' children. Overall, however, results from the origin-country FE model show that even after controlling for measurable background differences across origin countries between refugees' and non-refugees' children, a 0.43 year-of-schooling advantage associated with children's refugee status remains, supporting Hypothesis 1 that refugees' children show a positive net increment in educational attainment.

[Table 2.2 about here]

The results also reveal the expected relationships between the control variables and educational attainment. The second column in Table 2.2 shows that ethnoracial status is a particularly strong predictor of education, with Asians ($b = 0.95$, $p < .01$) and Blacks ($b = 0.53$, $p < .01$) demonstrating significantly more and Hispanics demonstrating significantly fewer ($b = -$

1.23, $p < .001$) years of schooling than Whites, all else being equal. However, these statistically significant differences in ethnoracial composition on educational attainment are reduced substantially when we control for origin-country differences. The positive effect for Asians shrinks by almost half ($b = 0.49$, $p < .01$), whereas it reverses direction (but is not statistically different) for Blacks. The negative effect for Hispanics is also reduced by more than half to -0.47 ($p < .01$). Controlling for origin-country differences between ethnoracial groups, thus, makes a considerable difference in schooling levels. Stated in substantive terms, about half of Asian migrants' and all of Black migrants' schooling advantage over White migrants results from their coming from countries with more highly educated populations (or from countries in which more highly educated individuals were more likely to migrate). For Hispanics, almost three-fifths of their disadvantage is associated with their coming from countries with less-educated populations.

Differences in sociodemographic background also play an important role in educational attainment, but these effects are generally independent of country-level differences (with the exception of arrival year). As expected, age at entry has a negative effect on education ($b = -0.15$, $p < .01$). For each year older that migrants (i.e., refugees and non-refugees) arrive in the United States, the education penalty is about one-sixth of a year's schooling. We find a small but positive effect for arrival year ($b = 0.02$, $p < .01$) after taking origin-country fixed effects into account, suggesting that, among those who immigrated from the same country, those who arrived later experience slightly higher educational attainment, all else being equal. The effect of arrival year may reflect the overall rise in the education level among the US population over time (Snyder 1993). We also find that male migrants show lower levels of educational attainment than females ($b = -0.37$, $p < .01$), which is consistent with the results in the literature on gendered differences in schooling (Bean et al. 2011; Feliciano and Rumbaut 2005).

Finally, we turn to the arguably most important set of control factors: parental SES and family factors, which are here measured at the parental arrival-year/origin-country cohort level because, at the time the ACS surveys data were collected, respondents were adults who generally no longer lived with their parents, making it impossible to obtain individual-level parental SES and family measures. The findings shown in Table 2.2 (column 2) reveal that, at a cohort level, individuals' educational attainment is positively related to maternal education ($b = 0.32, p < .01$) and negatively related to family size ($b = -.70, p < .01$) and family income ($b = -0.34, p < .01$). Including origin-country fixed effects (column 4), the effect sizes of the parental SES factors are all reduced (to $b = 0.23, p < .01$ for maternal education, $b = -0.14, p < .1$ for family size, and $b = -0.21, p < .05$ for log family income) but remain significant.

[Table 2.3 about here]

Multivariate Analyses of the Refugee Status Effect across Arrival Periods

The next analyses rely on origin-country FE models to assess the effect of refugee status on educational attainment across the three arrival periods (Table 2.3). Model 1 shows that arrival period itself has a positive effect on educational outcome. In general, the children of migrants who arrived during either the early period ($b = 0.34, p < .01$) or middle period ($b = 0.31, p < .01$) attained more schooling than those who arrived during the late period.¹² To test the second hypothesis that the education advantage associated with refugee status diminishes across the three arrival periods due to decreasing governmental support for refugees, we include interaction

¹² Note that these arrival-*period* effects that aim to capture shifting support and reception for immigrants are different from the arrival-*year* effect, which is meant to capture year-to-year temporal changes in economic demands for higher education in the United States.

terms for refugee status and arrival period in Model 2. The interaction terms are significant. The educational advantage associated with refugee status decreases from 0.42 ($b = -0.05 + 0.47$) for the early period to 0.15 ($b = -0.05 + 0.20$) for the middle period, and by the late period, it has completely disappeared (with the main effect of refugee status not significant). Figure 2.4a graphs the adjusted educational attainment of refugees' and non-refugees' children across the three arrival periods, based on the Model 2 equation. The gap between the adjusted educational attainments of refugees' and non-refugees' children diminishes over the three arrival periods, illustrating diminishing refugee educational attainment with declining refugee settlement assistance, thus supporting Hypothesis 2.

[Figure 2.4a about here]

We base Hypothesis 3 on the same reasoning. Due to decreasing governmental support for refugees across arrival periods, we expect a concomitant decline in educational attainment for refugees' children. Focusing on arrival periods, we find evidence of this decline in Model 2. Refugees' children who arrived during the early period, when the support level was high, do significantly better than those who arrived during the late period, when the support level was lower (diff. = 0.70 [$0.23 + 0.47$]), and refugees' children who came during the middle period also do significantly better than those from the late period, but to a lesser extent (diff. = 0.49 [$0.29 + 0.20$]). Figure 2.4a illustrates this pattern clearly, showing steady declines in adjusted educational attainment among refugees' children across the three periods. Arrival period also has an effect on the educational attainment of non-refugees' children. However, rather than a steady decline across the three periods, the drop-off in education occurs only during the late period.

Finally, to assess Hypothesis 4, we estimate a model that introduces binary variables for naturalization and English proficiency to test whether and to what extent acquiring these resources mediates the effects of refugee status for those who arrived during the late and middle period. Model 3 shows that the educational differentials between refugees' and non-refugees' children are 0.47 for the early period (diff. = $-0.18 + 0.65$) and 0.18 for the middle period (diff. = $-0.18 + 0.36$). The results are nearly identical to the educational differentials calculated in Model 2 of Table 2.3. Overall, results from Model 3 suggest that although naturalization ($b = 1.45$, $p < .01$) and English proficiency ($b = 2.95$, $p < .01$) each exert strong and positive effects on education for migrants' children, they do not appear to mediate the interaction effects between refugee status and arrival period.

[Figure 2.4b about here]

Interestingly, however, including naturalization and English proficiency serve to mediate some of the arrival-period effects for non-refugees. Comparing the non-refugee changes in educational attainment owing to arrival period in Models 2 and 3, we note that the education gain for non-refugees' children who arrived during the early period, compared to the late period, becomes non-significant in Model 3. The gains for those arriving in the middle period compared to the late period also drops appreciably ($b = 0.15$, $p < .01$ in Model 3 versus $b = 0.29$, $p < .01$ in Model 2), suggesting that for non-refugees, different rates of naturalization and English proficiency notably explain some of the educational differentials by arrival period. Late-arrival non-refugees' children experience an educational disadvantage compared to their early- and middle-arrival non-refugee peers, due in part to lower English proficiency and naturalization

rates. If we examine Figure 2.4b, which graphs adjusted educational attainment by migration status and arrival period, based on the equation of Model 3, the mediation effect on arrival year among non-refugees' children is more apparent. We no longer see a significant difference in educational attainment among non-refugees' children who arrived during the early 1990s compared to the previous two periods.

Robustness Assessments

The ACS and IPUMS datasets used in this analysis are not without limitations. For example, they are cross-sectional, not longitudinal, thus necessitating that we construct later panels of children who could be linked to parents only by cohort. Also, the datasets, while indicating whether respondents were foreign born, do not provide information about initial migration status, hence the need to use a third data source from INS to impute refugee status. As large-scale national surveys, the ACS and US census offer major advantages, however. Chief among them is that they provide sufficiently large, randomly selected samples of migrants that 1) enable our utilization of a comparative research design, 2) estimate relationships among variables that achieve considerable stability, and 3) support generalizability of findings. Moreover, to our knowledge, no other data alternatives contain enough cases to assess the hypotheses set forth here. But given the data limitation, we undertook a number of robustness checks. First, we checked the adequacy of our method for refugee identification by comparing the ACS population estimates to governmental statistics on the foreign-born population arriving from countries with high refugee concentrations (see below for more details). We also used origin-country fixed effects models to account for educational differences due to national origins. Additionally, we replicated our analyses, using a smaller, more geographically localized dataset

on migrants' children. Lastly, we assessed sampling errors. None of these assessments affected the results. The procedures used in the assessments can be found below and are elaborated in the Online Appendix.

Origin-country fixed effects. The results of the origin-country FE analyses show that, even after controlling for country-level differences, refugee status is associated with higher educational attainment for the foreign-born children of migrants. Some recent analyses note that controlling for origin country eliminates any positive effects of refugee status on children's educational attainment (Fitzgerald and Arar 2018). We find that such is not the case, although our target population here is more limited (i.e., those coming under the auspices of the 1980 Refugee Act *and* during the arrival period that extends from 1980 to 1995). As expected, refugee status differences do *not* disappear in our origin-country FE models, suggesting that a part of the refugee status effect cannot be accounted for by differences in background characteristics between refugees and non-refugees alone.

The adequacy of refugee identification. To gauge the extent to which the 2011-2019 ACS samples used to assess educational attainment are satisfactorily representative of the numbers of migrants arriving from 1980 to 1995, especially those coming from refugee-sending countries, we compared the country-specific, year-specific numbers of foreign-born persons in the ACS samples (adjusted to population totals, using person weights) to the numbers in the admission statistics published by the INS (see Online Appendix Table A for an extensive list of admission statistics). We would expect some attrition in the numbers of arrivals in the ACS, due to mortality, return migration, and errors in reporting, but overall, the ACS numbers should show only slight deviations from INS statistics if attrition is not large, which is indeed the case (see

Online Appendix Table B).¹³ The ACS numbers are, on average, 10 percentage points below those indicated by the Yearbook, as one would expect, given a not-unreasonable rate of attrition. The ACS country-specific entry numbers are generally consistent in showing reasonably lower figures compared to the INS county-specific admission statistics.

DISCUSSION AND CONCLUSION

The view that host-society expectations and treatment affect how well migrants thrive in their new societies is a common perspective that emerges from relational understandings of immigrant integration (Motomura 2006; 2021; Portes and Rumbaut 2001). Migration scholars have generally characterized US host-society/migrant relations in the modern era as “laissez faire” or even hostile in nature (Higham 1955; U.S. Commission on Immigration Reform 1997; Zolberg 1988). One notable exception, however, is the US governmental provisions for refugee resettlement, established by the 1980 Refugee Act, which some scholars have pointed to as a rare policy that facilitates integration (Bloemraad 2006; Hooper, et al. 2016; Jimenez 2011; Tran and Lara-García 2020; Waters and Pineau 2015). Nonetheless, the extent to which integration has occurred for new refugee arrivals has been questioned (Brown and Scribner 2014; Fee 2019). Results from our analysis suggest that many of the problems for refugee integration are rooted in the governmental disinvestment that began a few years after the inception of the 1980 Refugee Act itself. Although intended to be comprehensive and enduring (Bruno 2016), support for refugee resettlement (in dollars as well as length of eligibility) has repeatedly declined since the early 1980s, creating increasing challenges for refugee integration.

¹³ We did not include former Soviet countries, due to inconsistencies in origin-country identification over time, which may lead to inaccurate population projection.

This article has pulled together data from multiple sources and time periods to develop findings that are suggestive for future immigrant integration policies. Focusing on the children of refugees and other migrants who arrived to the United States some 25-40 years ago enables us to not only begin our analyses at the time when the historic 1980 Refugee Act was passed but also capture the integration experiences of now-adult children of migrants who accompanied them in their migration several decades ago. This long-term view is critical for being able to compare refugees' children's educational attainment to that of their counterparts coming under other migration regimes.

The existing literature on US refugee admissions demonstrates that national origins and race, along with other geopolitical considerations, have affected whose applications for refugee status are approved by the US government, especially during the Cold-War era, and how newcomers are treated upon arrival (Espenshade 2011; Menjivar 2006; Lennox 1993; Zolberg 1988). Although this article's goal is to assess how refugee status and the degree of governmental assistance affect integration, rather than to investigate ethnoracial and other selection biases in refugee admissions, we do control for ethnoracial and other background factors in our analyses. Results show that controlling for race and national origins, along with other factors, somewhat, but not totally, accounts for the educational advantage attained by refugees' children over that of non-refugees' children. Overall, we find that refugees' children fare better educationally than non-refugees' children, particularly if they arrived shortly after the 1980 Act was passed and implemented and when its benefits were at the highest level. Our findings, thus, suggest that the integration of refugees' children can be enhanced by governmental provision of settlement assistance, especially when such assistance reaches the levels provided in the early 1980s.

In summary, the results obtained in this article suggest not only that tangible governmental financial and social support generate economic stability for migrants in the short run, as previous research on refugees has shown (see Capps et al. 2015; Evans and Fitzgerald 2017; Fix, Hooper and Jong 2017), but also that better host-society/migrant relations make for longer-term positive effects on the integration of the next generation. The decreasing assistance for refugees during the past 25 years helps explain why studies examining more recent refugee groups find more integration challenges facing refugees (Fee 2019; US Senate Committee on Foreign Relations 2010). The Welfare Reform Act of 1996, for example, further squeezed refugees' sources of support by cutting funding for public welfare programs, for which refugees were eligible (on top of refugee assistance), and restricting length of eligibility for noncitizens, including refugees (Bruno 2011). Capturing how the dynamics of general social welfare policy affects the integration of newcomers of different migration statuses may be a worthwhile endeavor for future research.

More broadly, this article's findings suggest that the United States and possibly other nations could benefit from modifying their longstanding *laissez-faire* approaches toward newcomers. Although the reason often given for the US government's disinvestment in refugee assistance is to encourage refugees to become economically self-reliant (Brown and Scribner 2014; Bruno 2016; Martin 2011), the evidence presented here for refugees arriving in the United States in the 1980s and early 1990s suggests that immigrant socioeconomic integration is enhanced in the long run through settlement assistance and social support. This takeaway is particularly relevant today, when many nations grapple with finding and implementing policies that might effectively deal with global refugee crises (Haas, Castles and Miller 2020; Weiner 1997). Research on public opinion about refugees has found that, in the United States, the public

has become more receptive to admitting and providing more support to refugees and some other migrants overall (Sana 2020). While such positive changes in intangible host-society/migrant relations are encouraging, immigrant integration policies that provide tangible settlement assistance can substantially raise migrant integration, thus benefitting the overall society.

Table 2.1. Means and Standard Deviations for Years of Schooling and Other Research Variables by Migration Status and Arrival Period, Adult Foreign-Born Children of U.S. Migrants Arriving from 1980-1995

	Arrival Period											
	Early (1980-84)				Middle (1985-89)				Late (1990-1995)			
	Refugees		Non-Refugees		Refugees		Non-Refugees		Refugees		Non-Refugees	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<u>Integration</u>												
Years of schooling	13.5	3.9	12.0	4.4	13.6	3.7	12.2	4.1	14.4	3.2	12.0	4.1
<u>Ethnoracial Status (proportion)</u>												
White	0.11	0.31	0.09	0.29	0.26	0.44	0.07	0.25	0.59	0.49	0.07	0.26
Asian	0.88	0.32	0.20	0.40	0.63	0.48	0.21	0.41	0.24	0.43	0.20	0.40
Hispanic	0.00	0.05	0.63	0.48	0.07	0.25	0.65	0.48	0.15	0.36	0.67	0.47
Black	0.01	0.09	0.08	0.27	0.04	0.20	0.07	0.25	0.02	0.14	0.05	0.23
<u>Sociodemographic Characteristics</u>												
Age-at-entry	10.4	5.2	10.7	5.8	10.5	5.2	10.7	5.9	10.0	5.1	11.5	5.3
Male	0.54	0.50	0.53	0.50	0.51	0.50	0.52	0.50	0.50	0.50	0.51	0.50
<u>Parental Cohort SES</u>												
Maternal years of schooling	8.8	2.3	10.1	2.5	9.6	2.8	10.1	2.3	12.9	2.9	10.0	2.7
Family size	5.2	0.6	4.9	0.6	5.0	0.7	4.8	0.6	4.2	0.7	4.8	0.6
Family income as % of poverty	211.4	53.9	213.7	78.0	155.2	49.5	181.8	65.0	284.2	67.5	215.6	76.2
<u>Mediating Variables</u>												
Naturalization	0.90	0.30	0.67	0.47	0.87	0.34	0.61	0.49	0.87	0.33	0.50	0.50
English proficient	0.90	0.30	0.83	0.37	0.91	0.28	0.84	0.36	0.95	0.21	0.82	0.39
Sample size (n)	14,249		11,226		9,292		12,648		10,675		15,552	

Source: Authors' calculations from pooled 2011-2019 ACS data (see Ruggles, et al. 2020).

Table 2.2. Regressions of Years of Schooling on Migration Status and Control Variables, Adult Foreign-Born Children of U.S. Migrants, separately for OLS, Country-of-Origin (CFE) and Arrival-Year Fixed Effects (YFE) Models

	OLS	OLS + Controls	YFE	CFE
<u>Migration Status</u>				
Refugee	1.85*** (0.03)	0.62*** (0.04)	0.67*** (0.04)	0.43** (0.18)
Non-Refugee	--	--	--	--
<u>Ethnoracial Status</u>				
Asian	--	0.95*** (0.05)	0.92*** (0.05)	0.49*** (0.15)
Hispanic	--	-1.23*** (0.06)	-1.15*** (0.06)	-0.47*** (0.17)
Black	--	0.53*** (0.07)	0.54*** (0.07)	-0.29 (0.18)
White	--	--	--	--
<u>Sociodemographic Background</u>				
Age-at-entry	--	-0.15*** (0.00)	-0.15*** (0.00)	-0.15*** (0.00)
Arrival year	--	-0.00 (0.00)	--	0.02*** (0.00)
Male	--	-0.37*** (0.03)	-0.37*** (0.03)	-0.37*** (0.03)
<u>Parental Cohort SES</u>				
Maternal years of schooling	--	0.32*** (0.01)	0.29*** (0.01)	0.23*** (0.03)
Average Family Size	--	-0.70*** (0.04)	-0.67*** (0.05)	-0.14* (0.08)
Log family income as % of poverty	--	-0.34*** (0.07)	0.06 (0.10)	-0.21** (0.08)
Constant	12.15*** (0.02)	16.44*** (0.50)	14.33*** (0.63)	13.81*** (0.70)
Observations	73,642	73,642	73,642	73,642
R-Squared	0.038	0.261	0.261	0.276

Source: Authors' calculations from pooled 2011-2019 ACS data (see Ruggles, et al. 2020).

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

Table 2.3. Regressions of Years of Schooling on Migration Status (MS), Arrival Period (AP), and the Interaction of MS and AP, Adult Foreign-Born Children of U.S. Migrants, Country-of-Origin Fixed Effects Models

	Model 1	Model 2	Model 3
<u>Migration Status</u>			
Refugee	0.43** (0.18)	-0.05 (0.20)	-0.18 (0.19)
Non-Refugee	--	--	--
<u>Arrival Period</u>			
Early (1980-84)	0.34*** (0.10)	0.23** (0.11)	0.03 (0.10)
Middle (1985-89)	0.31*** (0.08)	0.29*** (0.08)	0.15** (0.07)
Late (1990-95)	--	--	--
<u>Interaction Terms</u>			
Refugee Status * Early Period	--	0.47*** (0.09)	0.65*** (0.09)
Refugee Status * Middle Period	--	0.20** (0.10)	0.36*** (0.09)
Refugee Status * Late Period	--	--	--
<u>Ethnoracial Status</u>			
Asian	0.49*** (0.15)	0.49*** (0.15)	0.34** (0.14)
Hispanic	-0.47*** (0.17)	-0.48*** (0.17)	-0.44*** (0.16)
Black	-0.30 (0.18)	-0.31* (0.18)	-0.39** (0.17)
White	--	--	--
<u>Sociodemographic Background</u>			
Age at entry	-0.15*** (0.00)	-0.15*** (0.00)	-0.11*** (0.00)
Arrival year (since 1980)	0.05*** (0.01)	0.05*** (0.01)	0.05*** (0.01)
Male	-0.37*** (0.03)	-0.37*** (0.03)	-0.35*** (0.02)

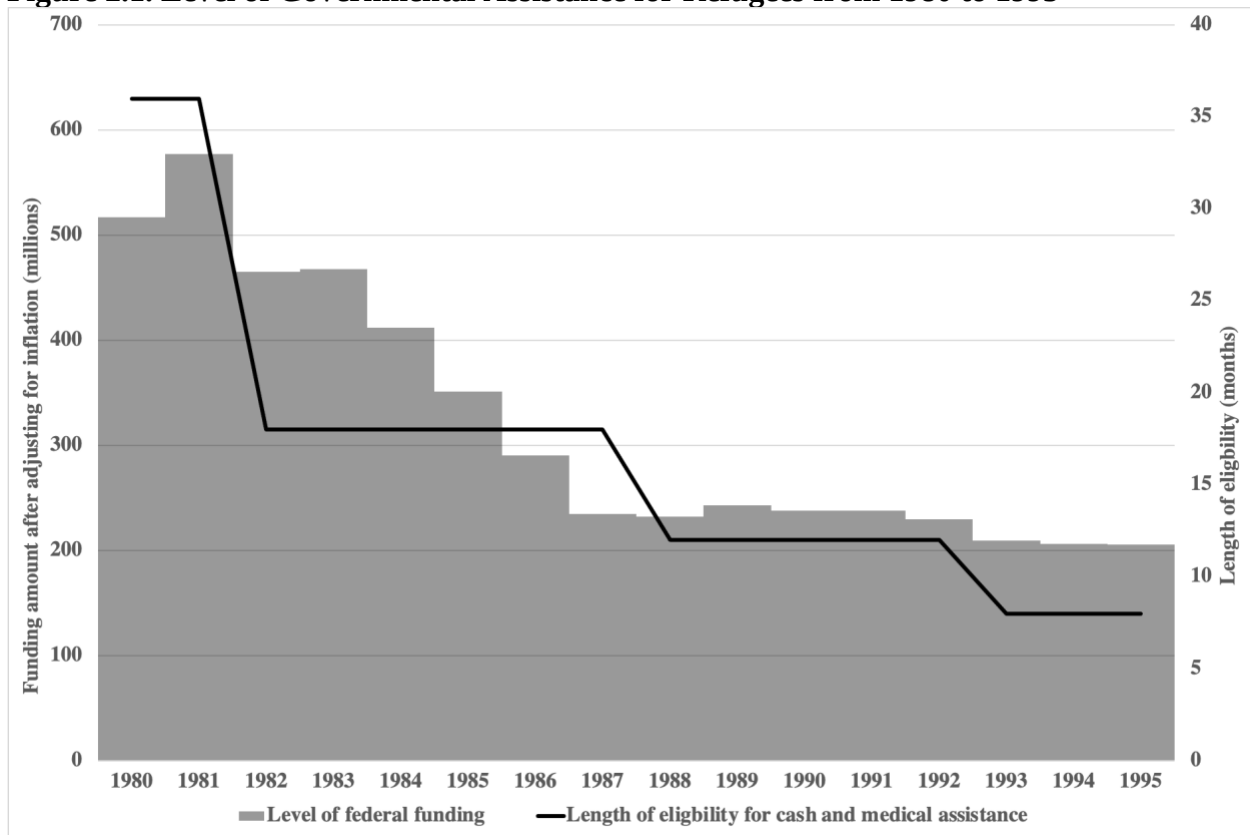
Table 2.3 (con't.)

<u>Parental Cohort SES</u>			
Maternal years of schooling	0.20*** (0.03)	0.19*** (0.03)	0.09*** (0.03)
Average Family Size	-0.09 (0.08)	-0.02 (0.08)	-0.07 (0.08)
Log family income as % of poverty	0.16 (0.13)	0.22 (0.14)	0.30** (0.13)
<u>Mediating Variables</u>			
Naturalization	--	--	1.45*** (0.03)
English proficient	--	--	2.95*** (0.04)
Constant	11.46*** (0.91)	11.03*** (0.99)	7.96*** (0.93)
Observations	73,642	73,642	73,642
R-Squared	0.276	0.276	0.357

Source: Authors' calculations from pooled 2011-2019 ACS data (see Ruggles, et al. 2020).

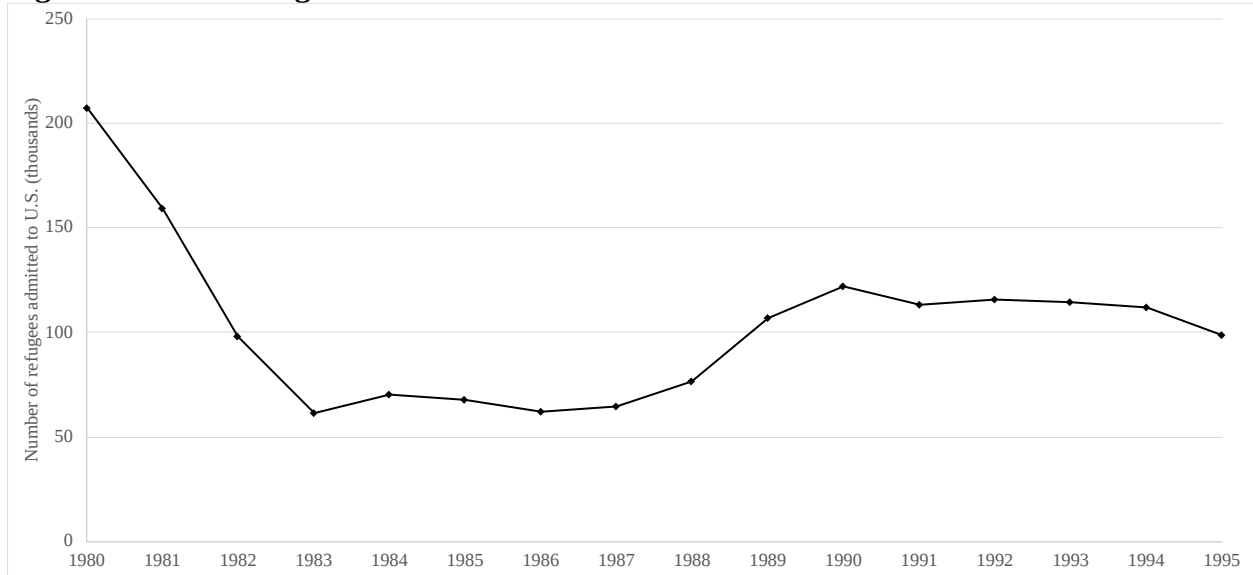
*** p<0.01, ** p<0.05, * p<0.1

Figure 2.1. Level of Governmental Assistance for Refugees from 1980 to 1995



Source: Authors' calculations from the U.S. Office of Refugee Resettlement's *Annual Report to Congress* (1980-1995).

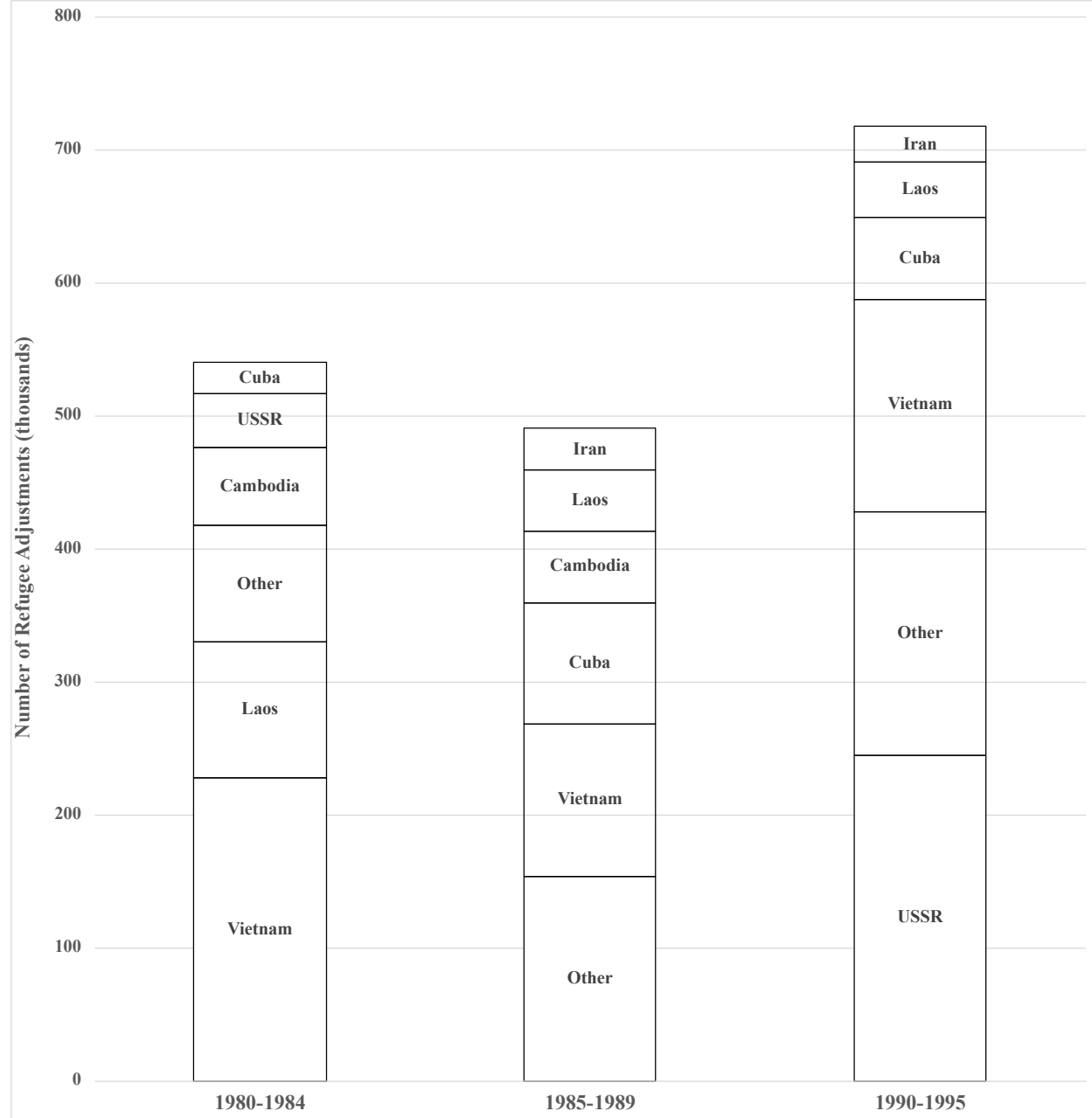
Figure 2.2: U.S. Refugee Admissions from 1980 to 1995



Source: Authors' calculations from U.S. Immigration and Naturalization Service's *Yearbooks of Immigration Statistics* (1980-1995).

Note: These numbers include asylee adjustments.

Figure 2.3: Refugee Adjustment to LPR Status by Arrival Period and National Origin



Source: Authors' calculations from U.S. Immigration and Naturalization Service's *Yearbooks of Immigration Statistics* (1980-1995).

Figure 2.4a. Refugees' and Non-Refugees' Children's Years of Schooling Adjusted for Differences in Other Variables (Table 3, Model 2)

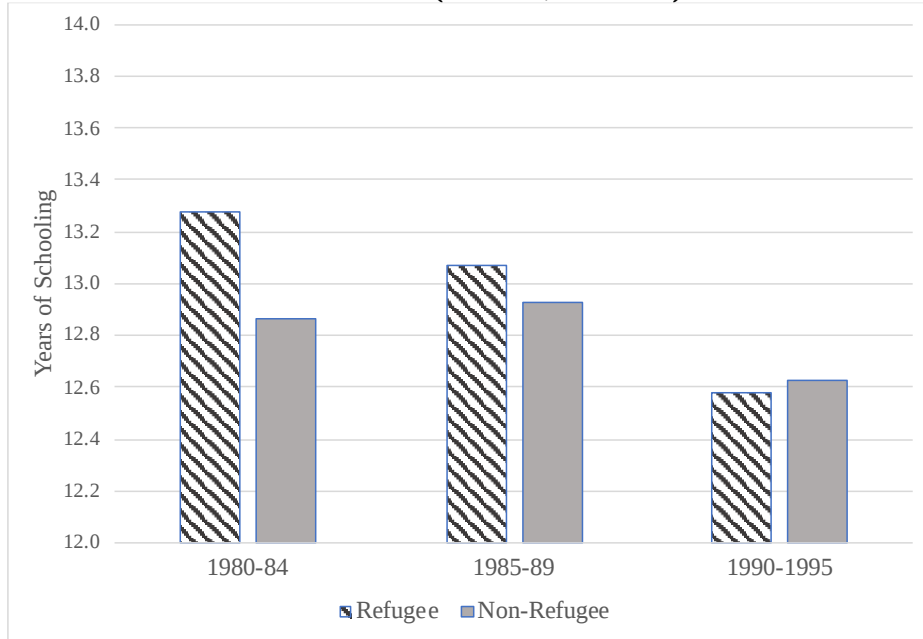
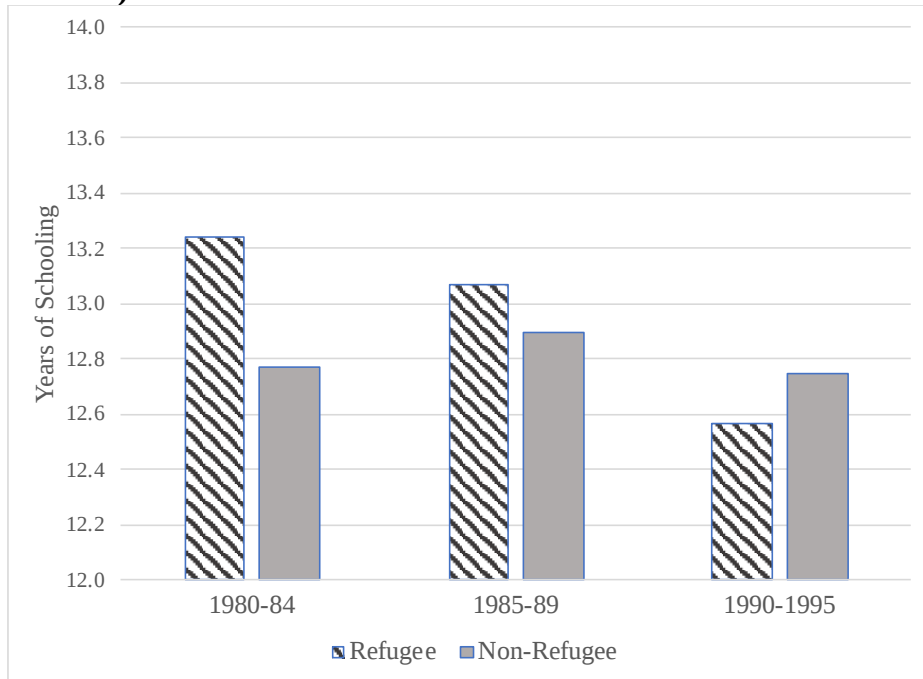


Figure 2.4b. Refugees' and Non-Refugees' Children's Years of Schooling Adjusted for Differences in Other Variables, and Naturalization and English Proficiency (Table 3, Model 3)



CHAPTER 3

THE HEALTHY IMMIGRANT EFFECT AND ITS EROSION: DIFFERENCES BETWEEN REFUGEE AND NON-REFUGEE IMMIGRANTS, AND THE U.S.-BORN IN SELF-RATED HEALTH AND WORK-LIMITING DISABILITY ACROSS DURATION OF RESIDENCE

INTRODUCTION

Research on health disparities based on nativity status has coalesce around two common empirical findings. First, immigrants generally experience better health than native-borns, despite their more disadvantaged socioeconomic position and more limited access to healthcare (Dey and Lucas 2006; Markides and Rote 2015; National Academies of Sciences 2015; Treas and Gubernskaya 2016). This finding is often referred to as the healthy immigrant effect (HIE), although its perplexing nature has given rise to the coinages of other terms such as the “immigrant health paradox” or the “epidemiological paradox.” A second major finding in the immigrant health literature is that HIE declines for immigrants across duration of residence in the receiving society, leading to a convergence in health between the immigrant and native-born groups.

Theoretical explanations for the two findings abound, but they are plagued by empirical anomalies that hint at more complex immigrant health patterns and underlying mechanisms. First, research on HIE results in more mixed findings when considering a range of health measures. Although HIE is most evident in comparative research on life expectancy by nativity status, research on chronic health conditions, including disabilities, and on self-rated health presents a more complex picture of immigrant health. Second, there remains relatively few empirical tests of underlying mechanisms for HIE and its decline over time (Markides and Rote

2015), especially as it relates to disparities in healthcare access. Finally, findings of HIE often overshadows the health heterogeneity that exists within the immigrant population, especially between newcomers who arrived via different classes of admission (Reed and Barbosa 2017). In fact, research suggests that immigrants who arrived as refugees experience a health effect opposite in nature from HIE (Kumar et al. 2021; National Academies of Sciences 2015), and it remains unclear how refugee health changes across duration of residence.

This study makes an empirical contribution to the state of research on immigrant health by examining the following research questions: 1) whether and how self-rated health and rates of work-limiting disability differ between refugee foreign-borns, non-refugee foreign-borns, and native-borns living in the United States; 2) whether and how health changes over duration of residence for the two foreign-born groups; and 3) whether and to what degree these changes can be explained by health access. The two health measures used jointly in this study (self-rated health and work-limiting disabilities) provide an important understanding of how immigrant/nativity groups differentially experience their own health while not losing sight of health conditions that may directly impact their ability to work and support their livelihood. Using a nationally representative survey sample of the U.S. population via the Current Population Survey to analyze health status by nativity status and (imputed) refugee status among the foreign-borns, I find positive health for foreign-borns, although the magnitude of the effect differs by refugee status. I also find diverging health trajectories between refugee and non-refugee foreign-borns across duration of residence. Healthcare access, as measured by private insurance, public insurance, and citizenship, mediates a significant proportion of the changing health trend across duration of residence for immigrants. I discuss the implications of such

findings for understanding how immigration, as a selection process, and its many accompanying challenges shape the health demography of a large share of the U.S. population.

COMPARATIVE RESEARCH ON IMMIGRANT HEALTH

Evidence of HIE among U.S. immigrants has emerged across a range of comparative studies, although the degree of the effect varies depending on the health measure. A large-scale study, using eight major U.S. federal data sources, found that the overall health of U.S. foreign-borns exceeds that of their same-age native-born peers across a variety of health measures, including life expectancy, rates of disability, morbidity, and self-assessment of health (Singh, Rodriguez-Lainz, and Kogan 2013). Other research, some originating in Canada, corroborates some of the HIE-supported findings (Acevedo-Garcia et al. 2010; Kobayashi, Prus, and Lin 2008; Newbold and Simone 2015), especially in regard to life expectancy. U.S. foreign-borns, who represent about 14% of the total U.S. population, are among some of the longest-lived people in the world (Dupre, Gu, and Vaupel 2012; Hendi and Ho 2021). They are also responsible for the majority of (pre-COVID) life expectancy gains occurring in the United States in the last decade or so (Hendi and Ho 2021).

Yet, life expectancy does not always reflect quality of health. Thus, for certain chronic health conditions and self-rated health, the evidence for HIE is more mixed, showing more heterogeneity among immigrant subgroups. In fact, there is evidence of a disability *disadvantage* among Hispanic immigrants and older Asian immigrants (Hayward et al. 2014; Markides et al. 2007; Markides and Eschbach 2011). In regard to work disability specifically, Huang and colleagues (2011) found that foreign-borns generally reported higher rates of work disability than their U.S-born counterparts. In another study, foreign-borns also reported worse self-rated health

than the U.S.-born (Jasso et al. 2004). A large-scale study in Europe found that, among those who are 50 years or older, immigrants reported worse self-rated health and suffered from depression more often than native-borns (Lanari and Bussini 2012). Overall, health heterogeneity among immigrants and across different health measures suggest various mechanisms may be at play affecting immigrant health.

Furthermore, it seems likely that how the underlying mechanisms driving immigrant health operate and interact may change across duration of post-migration residence (Edberg, Cleary, and Vyas 2011). This would explain a second empirical trend in the research literature, that is HIE diminishes in magnitude across duration of time since migration. Markides and Gerst (2011) and Elo and colleagues (2011) both found that immigrants who had lived longer in the United States were more likely to become disabled and to lose their health advantage over same-age U.S.-born peers. A U.S. national health statistics report (Dey and Lucas 2006) reveals that after only 5 years of residence, rates of obesity, diabetes, hypertension, and cardiovascular diseases among immigrants increased.

Theoretical Explanations for the Healthy Immigrant Effect and its Decline over Time

Scholars have proposed different mechanisms responsible for HIE, including various notions about why the effect exists and why it diminishes over time. The most dominant view on why HIE exists points to health selective migration (Akresh and Frank 2008; Jasso et al. 2004; Markides and Rote 2015). This view posits that, due to self-selection and contextual selection factors, which may arise from stringent requirements for immigrant admission and economic pull factors, healthier individuals tend to be more likely to immigrate. Circumstantial evidence in support of this perspective have accumulated among studies that have leveraged differences in

degrees of health selectivity among immigrant subgroups to explain patterns of health heterogeneity among them. Markides and Gerst (2011), for example, found that Puerto Ricans, who hold U.S. citizenship from birth and thus experience no migration selection, also show no health advantage upon moving to the United States. Foreign-borns who immigrated as children and as older adults are less likely to reveal a positive health effect compared to native-borns (Elo et al. 2011). This is consistent with the idea that positive selection may be stronger among the working-age population, thus generating a strong HIE among the group.

Riosmena and colleagues (2017) took a different approach in their study on health selective migration by comparing the height and smoking behavior of U.S. immigrants to those of their non-migrant peers from their origin countries. They found immigrants were significantly taller and less likely to smoke than non-migrants of the same national origin. This is especially true among men. The findings provide further support for health selective migration as the mechanism underlying HIE. Although return-migration for health reasons and sociocultural differences between immigrants and native-borns are two other common explanations for HIE, these explanations have not received robust empirical support (Markides and Rote 2015; Turra and Elo 2008).

Immigration may not only select who moves, but as a major life transition it may also reshape individuals' life trajectories after moving, including health trajectories. Immigration-related factors may be responsible for declines in HIE across duration of residence. One perspective attributes the decline to acculturation forces that lead to unhealthy behaviors. This perspective assumes that native-borns adopt more unhealthy behaviors (e.g., in diet and exercise), which gradually influence immigrants in a process known as acculturation. Negative acculturation thus can lead to reductions in immigrant health and convergence with the U.S.-born

over time (Antecol and Bedard 2006; Lara et al. 2005). But some scholars argue that not only is acculturation an elusive concept that is difficult to empirically test but, by focusing on individual behaviors, the explanation detracts from the important roles that social institutions play in creating and perpetuating health inequalities among groups (Hunt, Schneider, and Comer 2004; Viruell-Fuentes, Miranda, and Abdulrahim 2012). A second perspective thus would attribute the decline in HIE to systemic sources of stress associated with being an immigrant, such as accruing less institutional knowledge, living in resource-poor neighborhoods, experiencing actual and perceived discrimination, and encountering hostile immigrant policy (Edberg et al. 2011; Martinez et al. 2015; Mirza et al. 2014; National Academies of Sciences 2015; Viruell-Fuentes et al. 2012).

Furthermore, immigrants are at a distinct disadvantage compared to the U.S.-born when it comes to accessing adequate and appropriate healthcare (Derose, Escarce, and Lurie 2007; Kandula, Kersey, and Lurie 2004; Khullar and Chokshi 2019; Singh et al. 2013), with a lack of or inadequate health insurance coverage constituting a primary source of disadvantage (National Academies of Sciences 2015). To further complicate matters, studies have found that quality of care varies between individuals with public versus private health insurance (Bethell et al. 2011) and across types of insurance coverage, with these differentially affecting with health status (Bittoni et al. 2015; Quesnel-Vallée 2004). All of this suggests that, in the U.S. context at least, quality of healthcare access and health outcomes are tied to type of health insurance. Yet, only recently has research begun to empirically examine how disparities in healthcare access affects immigrant health (Reed and Barbosa 2017; Stafford et al. 2022). More research is necessary, especially to understand how quality of healthcare and access affect immigrant health trajectories after migration.

Refugee Status and Health

Examining the heterogeneity that exists among immigrant subgroups in health outcomes and trajectories thus may provide a fuller understanding of the mechanisms driving HIE. Prior research has mostly focused on health differentials among immigrants of different national origins (Huang et al. 2011), ethnoracial backgrounds (John et al. 2012; Kobayashi et al. 2008) and, to a lesser extent, admission-class background (Jasso et al. 2004). To extend this line of inquiry further, this study examines the health outcomes of refugees compared to non-refugee immigrants and U.S.-born individuals.

To be admitted as a refugee into the United States, displaced persons must meet the criteria outlined by the 1951 U.N. Refugee Convention. That is they must demonstrate they have experienced persecution or face a well-founded fear of persecution on account of their race, religion, nationality, membership in a particular social group, or political opinion (United Nations 1951). It is worth noting that not all displaced persons who apply for admission and meet this definition are successfully admitted. Still, those who permanently resettle in the United States as refugees are, by definition, individuals who have experienced some form of prolonged physical, emotional, and/or mental trauma prior to migration. Refugees thus generally arrive in their receiving countries with higher prevalence of physical and mental health problems and high rates of mortality relative to the native-borns and other immigrants. This has been true in the United States (Jasso et al. 2004; Kumar et al. 2021; Pampati et al. 2018; Reed and Barbosa 2017; Taylor et al. 2014; Yun, Fuentes-Afflick, and Desai 2012) and in other countries (DesMeules et al. 2005; Hollander et al. 2012). In contrast with non-refugee migrants, refugees thus are likely to constitute a negatively selected group with respect to health.

What remains less clear is whether and how refugee health trajectories change over time. While immigrants in general may experience more negative health across duration of residence, is this also the case for refugees, who may already start out with a health disadvantage? If they indeed experience net declines in health across duration of residence, in addition to an initial health disadvantage, it would be particularly important for health practitioners and policymaker to know and craft better interventions and policies to meet their needs. If they experience no health change or even better health over time, however, this would suggest are not affected to the same degree by the factors that reduce the health of non-refugee immigrants over time. It is possible the context from which they immigrated was so toxic to their health that resettlement represents a net reprieve, allowing their health to rebound despite the new stressors introduced through immigration.

The current state of the literature provides no clear answer to what direction refugee health trajectories may take partly because few studies have examined refugees' health trajectories separate from those of other immigrants, especially within the U.S. context. Two studies focusing on refugees who resettled in Sweden and Australia, respectively, found that the risk of developing a mental health disorder such as PTSD decreased across duration of residence (Björkenstam et al. 2020; Steel et al. 2002). Norredam and colleagues (2014) found the opposite effect, however, with regards to the physical health of refugees who resettled in Denmark. The authors found that the risk of developing a chronic health condition increased over time. In a U.S. study focusing on refugees who resettled in one city in Georgia, the authors found no relationship between duration of residence and refugee health (Feinberg et al. 2020). The scant research on refugees' long-term health in the United States is thus perplexing given the

theoretical and empirical understanding that refugees are a health at-risk group the moment they arrived in their new society.

CURRENT STUDY

An expansive research literature on immigrant health has converged on two major findings: immigrant status is associated with a positive health effect, and this effect diminishes across duration of residence. Nevertheless, heterogeneity within immigrant subgroups and in health outcomes and questions regarding the mechanisms underlying HIE and its decline over time demand greater research attention. The findings of the current study shed light on three main issues within the literature. First, studies that focus on health measures beyond life expectancy, such as physical health and self-assessment of health, have not shown a consensus regarding the existence of HIE. To better understanding the quality of health U.S. immigrants experience in their long-lived lives post-migration, this study examines a nationally represented survey sample taken from the Current Population Survey to investigate how immigrant background and duration of residence affect rates of work-related disability and self-assessment of health.

Second, for a group that is often considered negatively selected with respect to health, refugees are not often distinguish from other immigrants in research that examines immigrant health and health trajectory over time. This study aims to shed light on whether and how health selective migration and other factors affect refugee health differently than that of non-refugee migrants and the U.S.-borns. Due to the very reason of their immigration, one might expect refugees to be negatively selected in terms of health and thus their health outcomes to be worse than other immigrants and the U.S.-born. This study also investigates whether the decline in

health characteristic of other immigrants' health trajectories also characterizes refugees' and, if so, to what extent?

A third issue examined is how healthcare access affects immigrant health trajectories across duration of residence. Healthcare access is a key determinant of individual health and, within the U.S. context, health insurance coverage is especially important for accessing affordable preventative and medical health services (McWilliams 2009; Williams 2022). Yet, it is also well-documented that the rate of insurance coverage is low among the foreign-born (Deroose et al. 2007; Singh et al. 2013). In this study, I use citizenship status and health insurance coverage as measures of healthcare access. Citizenship sometimes enable healthcare access (Gubernskaya, Bean, and Van Hook 2013; Hacker et al. 2015). Because private and public health insurance each relates to health differently (Quesnel-Vallée 2004), I make a further distinction regarding insurance type to explore more nuanced dimensions of healthcare access.

DATA AND ANALYTICAL STRATEGY

The analytic sample is derived from pooled information on respondents from the Annual Social and Economic (ASEC) Supplement of Current Population Survey (CPS). The ASEC CPS is a nationally representative probability sample survey of U.S. households conducted by the U.S. Census Bureau and the Bureau of Labor Statistics. The survey includes two self-reported measures of health: self-rated health status and work-limiting disability. The self-rated health measure was introduced in the CPS ASEC in 1996 and the work-limiting disability measured in 1998. Hence, the pooled CPS ASEC samples used in this study spans the years 1996 to the most recent survey of 2021. I include both U.S. born and foreign-born adult respondents who are ages 22 or older. For the foreign-born sample, I include only respondents who immigrated in or after

1980 because that year marks the start of the U.S. refugee resettlement program, when refugee admission to the United States officially began.

Measures

Health: To assess health, I use two survey questions. The first health question asked respondents to rate their health on a 5-point scale (i.e., “poor”, “fair”, “good”, “very good”, and “excellent” health). I code the survey responses into a dichotomous self-rated health variable, wherein a report of “poor” or “fair” health is coded as 1, while “good” to “excellent” health are coded as 0. This coding scheme allows for ease of comparison between the present study and previous studies on immigrants’ self-rated health that also used a dichotomous variable for self-rated health (Jasso et al. 2004; Reed and Barbosa 2017). A second health-related question asked if the respondent had “a health problem or a disability which prevents him/her from working or which limits the kind or amount of work.” I coded responses as a dichotomous variable which measures disability by assigning a score of 1 to all who responded “yes” to the question, and 0 otherwise.

Immigrant Background: The analysis involves comparing the health outcomes between U.S.-born individuals and foreign-born individuals of refugee and non-refugee status. I estimate immigrant background using three survey questions. The first question asked respondents’ nativity status, which allows me to identify U.S.-born versus foreign-born persons. Among the foreign-born, I further estimate their initial migration status (i.e., refugee versus non-refugee) using their answers to two survey questions: country of birth and year of migration. This estimation method requires usage of the 1980-2020 *Yearbook of Immigration Statistics* published by the U.S. Department of Homeland Security. The yearbook published annual statistics on the

number of total immigrants and the number of refugees/asylees who were admitted to the United States by country of birth and year of admission. Using this information, I calculate the fraction of immigrants from a country/year pair who arrived as refugees and assign that fraction to individuals in the ACES CPS sample who reported arriving from the same country/year pair. This estimation method has been employed in previous research that uses U.S. governmental survey data, which usually provides no direct information on foreign-born individuals' initial migration status (Capps et al. 2015; Evans and Fitzgerald 2017; Khuu and Bean 2021). Respondents who arrived from a country/year pair with 0.05 or smaller proportion of refugees within the overall immigrant stream are coded as *non-refugees*. Those who arrived from a country/year with 0.75 or greater proportion of refugees are coded as *refugees*. Hence, the three categories of immigrant background are: 1) U.S. born, 2) non-refugee, foreign-born, and 3) refugee, foreign-born.¹⁴

Duration U.S. Residence: I calculated the number of years a foreign-born individual has lived in the United States by subtracting their self-reported year of migration from the survey year. Because I limited the foreign-born sample to those who arrived in or after 1980, the year the Refugee Act was passed and established refugee/asylee officially as an admission class, U.S. residence subsequently ranges from 0 to 40.

Health-Access Factors: Health is related to citizenship (Gubernskaya et al. 2013) and having health insurance (Quesnel-Vallée 2004) in complex ways, reflecting both selection and influence effects. *Citizenship* is a binary variable with 1 indicating that a respondent hold citizenship or not. All U.S.-born persons automatically have citizenship, while foreign-born individuals are generally not citizens unless they have self-naturalized or inherited citizenship

¹⁴ Those who arrived from a country/year pair with a fraction ranging from 0.06 to 0.74 are coded as being from a *mix-stream* group. They are used for robustness checks.

through parental naturalization. There are two health insurance variables: one indicates having *private insurance* (i.e., employment-based or self-purchased) and the other indicates having *public insurance* (i.e., Medicare, Medicaid, and military insurance). It is worth noting that individuals can have both public and private insurance and indeed 12.43 percent of the respondents have both.

Socioeconomic Status: I account for educational attainment and relative family income. *Educational attainment* is measured as the number of years of schooling a respondent has completed. *Relative family income* indicates respondents' family income quantile rank, which ranges from 1 (the lowest quantile) to 10 (the highest quantile).

Sociodemographic Factors: Other variables I include as controls are respondents' age, gender, and ethnoracial status. Ethnoracial status is measured using responses to two survey questions: one asks about the ethnoracial background of an individual and the other asks whether an individual is Hispanic or not. I combine these responses to create an ethnoracial status variable with five categories: Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian, Non-Hispanic Other, and Hispanic.

Plan of Analysis

The analytical plan is comprised of two parts. The first focuses on exploring net health differences across immigrant background (i.e., refugee, foreign-born; non-refugee, foreign-born; and U.S.-born). The second focuses on differences between refugees and non-refugees specifically in their health trajectories across duration of residence, and how these may be attenuated by healthcare access. First, I estimate two logistic regression models to model the relationship between immigrant background and health. The first model estimates the effect of immigrant background on self-rated health, while controlling for the effects of other measurable

contextual factors relevant to health. The second model estimates the effect of immigrant background on the likelihood of having a work-limiting disability while also including other controls. Second, I estimate four additional logistic regression models to examine whether and how changes in self-rated health and work-limiting disability across years of U.S. residency vary by refugee status for foreign-born individuals, and whether these changes are mediated by healthcare-access variables. Model 1a regresses self-rated health on refugee status and years of U.S. residency, their interaction, and other control factors. Model 1b employs the same specification, but also includes health-access variables. Models 2a and 2b use the same model specifications as 1a and 1b to estimate effects of work-limiting disability.

RESULTS

Descriptive Results

The analytical sample includes a total of 2,964,234 respondents, 89% of whom are U.S.-born. Of the remaining 11% who are foreign-born, 94% are non-refugees and 6% are refugees. The descriptive statistics in Table 3.1 show non-refugees have the lowest rates of poor/fair self-rated health (.10, SD = .30) and work-limiting disability (.04, SD = .20). Refugees have the highest rate of poor/fair self-rated health (.17, SD = .38), but lower a rate of disability than the U.S.-borns. The latter's disability rate is the highest among the three groups (.11, SD = .31).

INSERT TABLE 3.1 HERE

With regard to healthcare access, non-refugees occupy the least favorable position. Non-refugees have the lowest rate of citizenship (.35, SD = .48) and health insurance coverage, both

private (.52, SD = .50) and public (.17, SD = .38). Among refugees, a majority has citizenship (0.58, SD = 0.49) and their insurance coverage rates are higher, both for private (.55, SD = 0.50) and public (0.29, SD = 0.45). The U.S.-born have a substantially higher rate of private insurance coverage (.72, SD = .45) and a higher rate of public insurance coverage (.30, SD = .46) than the foreign-born groups.

With regard to socioeconomic background, non-refugees again occupy the least favorable position among the three groups. They are the least educated (11.9 years of schooling, SD = 4.18) and generally occupy lower positions in the family income distribution (5.02 quantile, SD = 4.18). They are followed closely by refugees (12.5 years of schooling, SD = 4.05; 5.05 quantile, SD = 2.9). The U.S.-borns completed the most years of schooling on average (13.6 years of schooling, SD = 2.60) and occupy the highest position in the family income distribution (5.57 quantile, SD = 2.87).

With regards to sociodemographic factors, non-refugees are the youngest group (41.42 mean age; SD = 13.08) and a majority are Hispanics (.60, SD = .49). refugees are relatively older (46.72 mean age, SD = 15.04) and have a more even ethnoracial distribution (0.28 non-Hispanic, White; 0.37 non-Hispanic, Asian and Pacific Islander; and 0.48 Hispanic). The two groups have an even and small proportion of non-Hispanic Blacks (.05). U.S.-borns are the oldest on average (47.94 mean age; SD = 16.32) and are majority non-Hispanic White (.76, SD = .43). Differences in socioeconomic and sociodemographic factors between the U.S.-born, non-refugees, and refugees can drive disparity in health outcomes and thus they are controlled when assessing the relationship between immigrant background and health in the subsequent regression analyses.

Modeling Health Outcomes by Immigrant Background

Table 3.2 shows two logistic regression models, one for each health outcome used here (i.e., poor/fair self-rated health and work-limiting disability). Negative parameter estimates in these models suggest a protective effect on poor health. Model 1 shows the non-refugee effect is $-.572$ ($se = 0.008$), which indicates that non-refugee, foreign-borns are only half as likely to rate their health as poor or fair ($\exp[-.572]$) compared to the U.S.-born. Refugees are also less likely rate their health as poor or fair compared to the U.S.-borns, but the magnitude of this difference is smaller ($b = -0.071$, $se = 0.022$). Model 2 show that both non-refugees and refugees are substantially less like to report a work-limiting disability compared to the U.S. borns (non-refugees: $b = -1.075$, $SD = .011$; refugees: $b = -.409$, $SD = .028$). Non-refugees' odds of reporting a disability are .34 times ($\exp[-1.075]$) that of the U.S.-borns or two-times less likely, while refugees' odds are about .66 times ($\exp[-.409]$) that of the U.S.-borns. These results support the healthy immigrant effect for non-refugees and, to a lesser extent, for refugees as well.

INSERT TABLE 3.2 HERE

Other control variables added to the model reveal interesting effects on health outcomes. Consistent with the research literature, I find that higher education and relatively higher positions on the family income distribution are negatively associated with poor/fair self-rated health (education: $b = -.117$, $se = 0.001$; relative family income: $b = -.185$, $se = 0.001$) as well as with work-limiting disability (education: $b = -.112$, $se = 0.001$; relative family income: $b = -0.234$, $se = 0.001$). In addition, the other ethnoracial groups are more likely to report poor/fair self-rated health than non-Hispanic Whites. Non-Hispanic Blacks and Non-Hispanic others are also more likely to report a work-limiting disability than non-Hispanic whites, while the opposite is true for

Non-Hispanic Asian and Pacific Islander and Hispanic, two of the largest recent immigrant groups.

Modeling Health Outcomes Amongst the Foreign-Born by Immigrant Background and Length of U.S. Residency

In the next part of the analysis, I examine how health measures differ across duration of residence for the foreign-born population. In the models in Table 3.3, I include years of U.S. residency as a variable and interact it with refugee status to determine whether and how refugees' health trajectories differ from non-refugees'. In Model 1a, the main effect of refugee status on poor/fair self-rated health is positive and significant ($b = .52$, $se = .043$), indicating that refugees are 1.68 times ($\exp[.52]$) more likely than non-refugees to assess their health negatively. The main effect of years of residency on self-rated health is small but positive ($b = .011$, $se = .001$), which indicates that increasing duration of U.S. residency increases the risk of a negative self-assessment of health. The negative interaction between refugee status and duration of residence ($b = -.009$, $se = .002$) suggests that refugees' self-rated health is less affected by duration of residence compared to non-refugees. Figure 3.1a shows the self-rated health trajectories of refugee and non-refugee immigrants after adjusting for differences in other background factors. The increasing risk of a poor/fair self-rated health across years of residency is clear among non-refugees, but for refugees there is little difference across time.

INSERT TABLE 3.3 HERE

INSERT FIGURE 3.1a + FIGURE 3.1b HERE

Healthcare access variables are added in Model 1b. The parameter estimates here show that private health insurance coverage reduces the risk of a poor/fair self-assessment of health ($b = -.251$, $se = .015$) while public health insurance coverage increases the risk by two-fold ($b = .703$, $se = .015$; odd ratio = $\exp[.703] = 2.02$). Citizenship has no significant effect on self-rated health. Accounting for healthcare access reduces the magnitude of the duration of residence effect, from $.011$ ($se = .001$) in Model 1a to $.009$ ($se = .001$). Figure 3.1b visualizes the relationship between duration of residence and self-rated health after accounting for healthcare access. Compared to Figure 3.1a, the slope for non-refugees is clearly less steep in Figure 3.1b, which shows that the increased risk of poor/fair self-rated health across duration of residence is not as strong after accounting for healthcare access. Additionally, the magnitude of the effect of refugee status on self-rated health decreases from $b = .52$ ($se = .043$) in Model 1a to $b = .404$ ($se = .043$) in Model 1b. This suggests that healthcare access can partially explain the decline in health over time for non-refugees and the differences in health status between refugees and non-refugee immigrants.

INSERT FIGURE 3.2a + FIGURE 3.2b HERE

Model 2a and 2b estimate the risk of developing a work-limited disability. Model 2a again shows a significant and positive effect of refugee status on work-limiting disability ($b = .842$, $se = .056$). Refugees' odds of having a work-limiting disability are 2.3 times ($\exp [.841]$) that of non-refugees. Duration of residence also has a significant and positive effect on work-limiting disability ($b = .023$, $se = .0237$). Each year of residency increases the odds of having a disability by 1.02 times ($\exp[.023]$). The longer the foreign-born individual has lived in the

United States, the higher the risk of developing a disability. The increased risk of a disability is much less steep for refugees ($b = -.012$, $se = .003$) to the point of being not significant. Figure 3.2a visualizes these trends.

Model 2b shows the changes in the main effects of refugee status, duration of residence, and their interaction on work-limiting disability after accounting for healthcare access. Private insurance coverage is negatively associated ($b = -.049$, $se = .022$) and public insurance coverage positively associated ($b = 1.388$, $se = .021$) with the risk of a work-limiting disability.

Citizenship has a positive and significant effect ($.111$, $se = .021$), meaning a citizen is more likely than a non-citizen to experience a work-limiting disability. Accounting for healthcare access reduces the duration of residence effect from $.023$ ($se = .001$) in Model 2a to $.015$ ($se = .001$) in Model 2b. Comparing the slope for non-refugee in Figure 3.1a to that in Figure 3.1b again shows the extent to which healthcare access mediates the effect of duration of residence on work-limiting disability. The refugee status effect also decreases from $b = .842$ in Model 2a to $b = .57$ ($se = .057$) in Model 2b.

Some significant trends among the control variables are worth noting. First, the association between gender and health changes direction when examining the entire sample versus the sample of foreign-borns only. In Table 3.2, being female is not significant for self-rated health and is in fact negatively associated with a work-limiting disability. In contrast, in Table 3.3, being female is positively associated with both poor/fair self-rated health (Model 1a: $b = .205$, $se = .012$) and work-limiting disability (Model 2a: $b = .122$, $se = 0.18$). This finding is consistent with the idea expressed in prior research that health selectivity migration is stronger among male than female migrants (Jasso et al. 2004; Riosmena, Kuhn, and Jochem 2017). Other

sociodemographic and socioeconomic variables have the same effects on health in the analysis of the foreign-born as they do in the analysis of all respondents.

DISCUSSION

The United States is increasingly becoming a “nation of immigrants,” at least in the statistical sense. About 14% of the U.S. population is foreign-born, which is a level unseen in the last hundred years (Camarota and Zeigler 2022). As the nation’s health becomes more stagnant in recent decades in comparison to other peer nations (Woolf and Aron 2013), newcomers are injecting vitality into the nation by maintaining higher life expectancy and generally better health (Markides and Rote 2015). Yet, this healthy immigrant effect is short-lived as immigrant health deteriorates across duration of residence, although heterogeneity exists across different measures of health and immigrant subgroups. Evidence of HIE and its decline also extends to peer countries that maintain similar immigration policies to the United States, such as Canada and Australia (Kennedy, McDonald, and Biddle 2006). More nuanced understandings of immigrant health thus have important policy implications, providing practitioners and policymakers with information on how to improve population health in general. They also have theoretical implications regarding how immigration as a process shapes the health profile of those who move through both selection factors and influence factors after migration.

This study advances empirical understanding of immigrant health by examining two dimensions of health that have not been well researched (i.e., subjective well-being and work-related functionality). One important contribution of the study is to examine whether and how heterogeneity exists and changes across duration of stay for refugee versus non-refugee immigrants. The former group stands out as a uniquely health at-risk group due to the nature of

its immigration, yet it remains largely unknown how this group's health status may change over time. Comparing the health and health trends of the two immigrant groups provides better leverage for understanding the underlying factors driving immigrant health. Another important contribution the study makes is to explore how factors related to healthcare access affect immigrant health trajectories. It makes an important distinction between having private versus public health insurance coverage as the two types that may differentially relate to immigrant health.

The findings of the study thus provide some support for HIE and its decline, but they also extend the conversation regarding health selectivity migration and healthcare access as mechanisms driving immigrant health. First, I find that non-refugee foreign-borns were significantly less likely to give a negative assessment of their health and to report a work-limiting disability compared to U.S.-borns, which is consistent with HIE-supported findings in prior research. A surprising finding, however, is that HIE extends also to refugees. That is refugees were less likely to assess their health negatively and to report a work-limiting disability compared to the U.S.-borns, although the health differentials are smaller than the health differentials between non-refugee, foreign-borns and U.S.-borns.

This finding is thus not consistent with previous research that suggests refugees are negatively selected with respect to health. I find no evidence in support of this expectation, at least not with respect to subjective health and work-limiting disability. An alternative explanation is that immigration and the immigrant integration experience unique to refugees may change how they perceive their well-being and capacity to work. With regards to self-rated health, it is possible that refugees judge their subjective well-being using a baseline for comparison that reaches back to their pre-migration experiences, when their lives and livelihoods were likely

under extreme trauma and stress. As such, they may view their health in the United States more positively than the U.S.-borns. The U.S. refugee resettlement program also places a strong emphasis on gainful employment for refugees after arrival. This institutional socialization may affect the kinds of disabilities that refugees perceive as being an impediment to their ability to work. Future research direction would benefit from further research on how refugee status relates to a diversity of health measures. It is possible that refugees may experience negative health on some dimensions but also protection on others due to their immigration experience.

Another important finding of this study is that a decline in HIE was felt most strongly by non-refugee immigrants, and not so much for refugees. In general, non-refugee immigrants' subjective sense of well-being and ability to work worsens the longer the time since migration, such that the risks of poor/fair health self-assessment and disability rates of refugees and non-refugees converge after longer lengths of residency. Previous research does not predict a healthy immigrant effect for refugees, let alone why they may experience a slower pace of health decline (if at all) compared to non-refugees. The findings from this study provides some direction for future research on refugee health trajectory but explaining the differential rates of change between the two groups is beyond the scope of this current study.

I find that accounting for healthcare access, including health insurance and citizenship, partially explains the decline in health among the foreign-borns. Immigrants' healthcare access, including health insurance coverage, is less comprehensive than that of the U.S.-born (Singh et al. 2013). As expected, this study shows rates of health insurance coverage for immigrants are substantially lower than the U.S.-borns, especially with respect to private insurance coverage. It is possible that disparities in healthcare access have a compounding negative impact on

immigrant health the longer the length of residency, thus leading to a decline in immigrant health overtime.

An interesting result that is not a part of the initial questions this study set out to investigate is the fact that accounting for healthcare access mediates some of the effect of refugee status on immigrant health. Among the foreign-born, refugees had a substantially higher rate of public health insurance coverage than non-refugees, which may be due to policies that govern who can apply for public health assistance immediately upon arrival (i.e., new legal permanent residents, except for those who converted from refugee status, must wait five years before they are eligible). Yet, public insurance is negatively associated with health: those who were covered by public health insurance were more likely to have a poor/fair self-assessment of their health and were more likely to report a work-limiting disability. Thus, accounting for the high rates of public insurance in specific accounts for some of the negative effect refugee status has on health.

Limitations and Robustness Checks

One limitation of this study is that it cannot tease out whether the relationships between the healthcare-access factors and health outcomes arose due to influence or selection. It is reasonable that a lack of citizenship and lack of insurance coverage may prevent individuals from accessing affordable and proper healthcare, hence eroding their health over time. However, some previous studies have found that people in poor health may select into citizenship (Gubernskaya et al. 2013) and public health insurance coverage (Quesnel-Vallée 2004). In future research, the use of longitudinal data may be necessary to tease out the direction of the associations between healthcare access and health outcomes.

Another limitation of this study is the use of imputed refugee status. The U.S. government generally does not track the integration and well-being of refugees after their first year of their arrival, and many nationally representative surveys do not report the initial visa statuses of immigrant respondents. Thus, it is difficult to study and compare the long-term health trajectories of refugees and non-refugees. Given the lack of data, I choose to impute refugee status to enable a comparative research design. This method has been used in previous research to study and compare different dimensions of integration between refugees and non-refugees (Capps et al. 2015; Khuu and Bean 2021).

To check the validity of the refugee status estimation method used in this study, I conducted a follow-up analysis of immigrant health that includes the mix-stream migrants. Because mix-stream migrants are those who immigrated from a country/year pair with a large mix of both non-refugees and refugees, I expect their health outcomes to saddle the outcomes between those in the non-refugee and refugee categories. And indeed, I find this to be case in both parts of the logistic regression analyses (see Appendix Table 3.1 and 2). The mix-stream group are less likely to report poor/fair self-rated health ($b = -.33$, $se = .015$) and a work-limiting disability ($b = -.694$, $se = .02$) than the U.S.-born. The magnitudes of the effects are between the magnitudes of effects for non-refugee immigrants and refugees. In analyses of changes in health outcomes across years of residency, the trends for the mix-stream group (i.e., the interaction between mix stream status and duration of residence) also manifest as a moderately decline that is not as steep as that experienced by the non-refugees (Model 1a: $b = -.004$, $se = .002$; Model 2a: $b = -.006$, $se = .002$). These results lend confidence to the estimation method used here is a meaningful measure of refugee status.

CONCLUSION

Researchers have been perplexed by the healthy immigrant effect and its decline across duration of residence for the U.S. immigrant population. A focus on these trends has detracted from research on the rich heterogeneities that exist within the immigrant population. Not all immigrant subgroups experience HIE and not all health measures show an immigrant health advantage. Research that focuses on such slippage may advance a better understanding of the challenges facing immigrant health. This research takes up this challenge. One important finding is that, contrary to expectations, refugees also experience a health advantage in comparison to the U.S.-borns. Although the advantage is not as strong as that experienced by non-refugee immigrants, refugee health declines at a much slower (non-significant) rate compared to non-refugee immigrant health. Instead of assuming that refugees experience a positive health selective migration, I suggest that the immigration experience itself, one that is unique to refugees, extending from before the immigration process to after they have resettled, may impact their health in complex ways. This perspective focuses on immigration as both a product of life-changing events *and* a catalyst for more life-changing events, event that have substantial impacts on individual health. One kind of life-changing event relevant to health that immigration shapes is healthcare access. Being immigrant is associated with various disadvantages with regards to healthcare access. As results from this study show, healthcare access has significant health effects and itself can explain some of the decline in immigrant health over time. Future research aiming to better understand immigrant health and the diversity that exist within the population should focus on aspects of pre- and post- immigration that could affect different dimensions of health.

Table 3.1: Descriptive Statistics by Immigrant Background

	Total		U.S.-born		Non-refugees		Refugees	
	mean/prop.	SD	mean/prop.	SD	mean/prop.	SD	mean/prop.	SD
Health outcomes								
Self-rated health (poor or fair)	0.14	0.35	0.15	0.36	0.10	0.30	0.17	0.38
Disability	0.10	0.30	0.11	0.31	0.04	0.20	0.09	0.28
Healthcare Access								
Has citizenship	0.92	0.27	1.00	0.00	0.35	0.48	0.58	0.49
Has private insurance	0.70	0.46	0.72	0.45	0.52	0.50	0.55	0.50
Has public insurance	0.28	0.45	0.30	0.46	0.17	0.38	0.29	0.45
Socioeconomic background								
Education (years of schooling)	13.38	2.89	13.56	2.60	11.91	4.18	12.51	4.05
Family income distribution quantiles (1 lowest – 10 highest)	5.50	2.87	5.57	2.87	5.02	2.86	5.05	2.90
Sociodemographic background								
Gender (female)	0.53	0.50	0.53	0.50	0.52	0.50	0.51	0.50
Age	47.17	16.11	47.94	16.32	41.42	13.08	46.72	15.04
Ethnoracial Status								
Non-Hispanic White	0.68	0.47	0.76	0.43	0.11	0.32	0.28	0.45
Non-Hispanic Black	0.11	0.32	0.12	0.32	0.05	0.23	0.05	0.22
Non-Hispanic Asian/PI	0.05	0.21	0.02	0.13	0.23	0.42	0.37	0.48
Non-Hispanic Other	0.02	0.15	0.03	0.16	0.00	0.07	0.00	0.04
Hispanic	0.13	0.34	0.08	0.27	0.60	0.49	0.30	0.46
Years of U.S. residency	--		--		14.93	9.14	16.61	10.08
N	2,964,234		2,634,372		310,430		19,432	

Table 3.2: Logistic Regressions of Poor/Fair Self-Rated Health and Work-Limiting Disability on Immigrant Background and Control Variables

	Model 1: Self-Rated Health		Model 2: Work-Limiting Disability	
Immigrant background				
Non-refugee	-0.572***	(0.008)	-1.075***	(0.011)
Refugee	-0.071***	(0.022)	-0.409***	(0.028)
U.S.-born	--		--	
Socioeconomic background				
Education (years)	-0.117***	(0.001)	-0.112***	(0.001)
Family income dist. (10 quantiles)	-0.185***	(0.001)	-0.234***	(0.001)
Sociodemographic background				
Gender (female)	-0.001	(0.004)	-0.087***	(0.004)
Age	0.039***	(0.000)	0.030***	(0.000)
Ethnoracial Status				
Non-Hispanic Black	0.432***	(0.005)	0.319***	(0.006)
Non-Hispanic Asian & PI	0.252***	(0.011)	-0.086***	(0.015)
Non-Hispanic Other	0.466***	(0.010)	0.464***	(0.011)
Hispanic	0.118***	(0.007)	-0.202***	(0.008)
Non-Hispanic White	--		--	
Constant	-1.431***	(0.012)	-1.117***	(0.013)
Observations	2,964,234		2,964,234	
Pseudo R-squared	0.15		0.15	

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

Table 3.3: Logistic Regressions of Poor/Fair Self-Rated Health and Work-Limiting Disability on Refugee Status, Duration of Residence, and Control Variables (Foreign-Born Sample Only)

	Self-Rated Health				Work-Limiting Disability			
	Model 1a		Model 1b		Model 2a		Model 2b	
Refugee	0.520***	(0.043)	0.404***	(0.043)	0.842***	(0.056)	0.571***	(0.057)
Non-refugee	--		--		--		--	
Years of residency	0.011***	(0.001)	0.009***	(0.001)	0.023***	(0.001)	0.015***	(0.001)
Years of residency * Refugee	-0.009***	(0.002)	-0.005**	(0.002)	-0.021***	(0.003)	-0.012***	(0.003)
Healthcare access								
Has any private health insurance			-0.251***	(0.015)			-0.049**	(0.022)
Has any public health insurance			0.703***	(0.015)			1.389***	(0.021)
Has citizenship			0.014	(0.014)			0.112***	(0.021)
Socioeconomic background								
Education (years)	-0.060***	(0.002)	-0.054***	(0.002)	-0.047***	(0.002)	-0.043***	(0.002)
Family income dist. (10 quantiles)	-0.130***	(0.002)	-0.093***	(0.003)	-0.166***	(0.004)	-0.117***	(0.004)
Sociodemographic background								
Gender (female)	0.205***	(0.012)	0.164***	(0.012)	0.122***	(0.018)	0.035*	(0.018)
Age	0.052***	(0.000)	0.043***	(0.000)	0.044***	(0.001)	0.027***	(0.001)
Ethnoracial status								
Non-Hispanic Black	0.056*	(0.032)	0.065**	(0.032)	0.075*	(0.041)	0.085**	(0.041)
Non-Hispanic Asian & PI	0.097***	(0.023)	0.087***	(0.023)	-0.197***	(0.031)	-0.224***	(0.032)
Non-Hispanic Other	0.177*	(0.100)	0.150	(0.100)	0.300**	(0.123)	0.235*	(0.124)
Hispanic	0.059***	(0.022)	0.074***	(0.022)	-0.392***	(0.029)	-0.311***	(0.030)
Non-Hispanic White	--		--		--		--	
Constant	-3.615***	(0.038)	-3.467***	(0.039)	-4.064***	(0.054)	-3.901***	(0.055)
Observations	329,862		329,861		329,862		329,861	
Pseudo R-squared	0.15		0.15		0.15		0.15	

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

Figure 3.1a: Probability of a Poor/Fair Self-Rated Health by Refugee Status and Duration of U.S. Residency, Adjusted for Differences in Other Controls (Table 3.3, Model 1a)

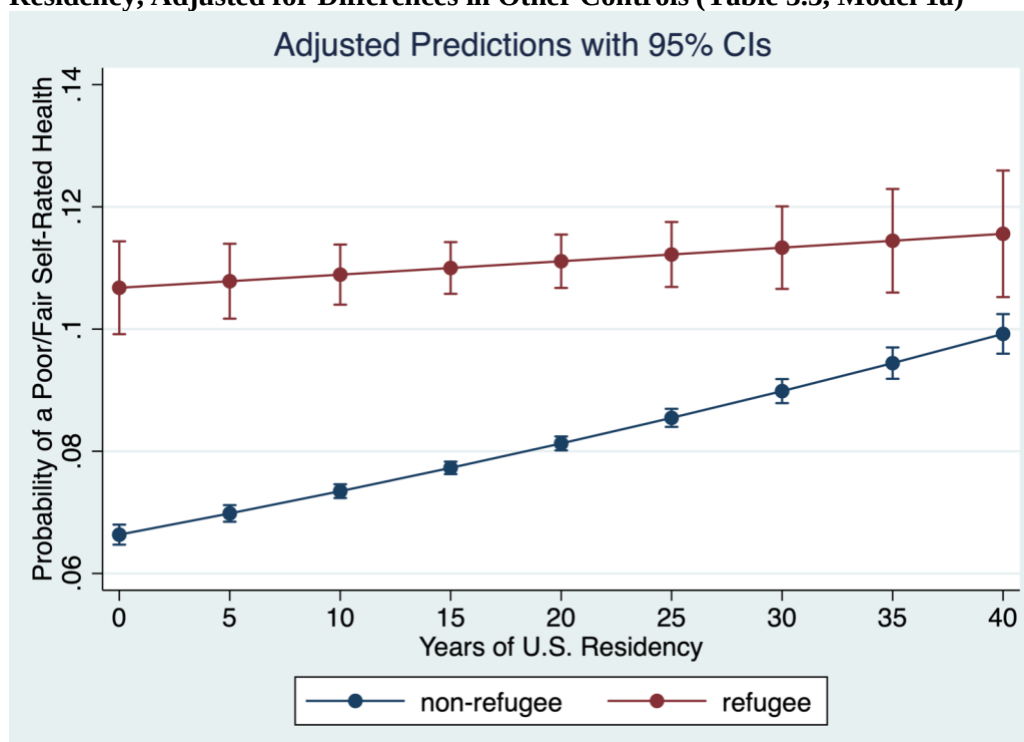


Figure 3.1b: Probability of a Poor/Fair Self-Rated Health by Refugee Status and Duration of U.S. Residency, Adjusted for Differences in Healthcare Access, and Other Controls (Table 3.3, Model 1b)

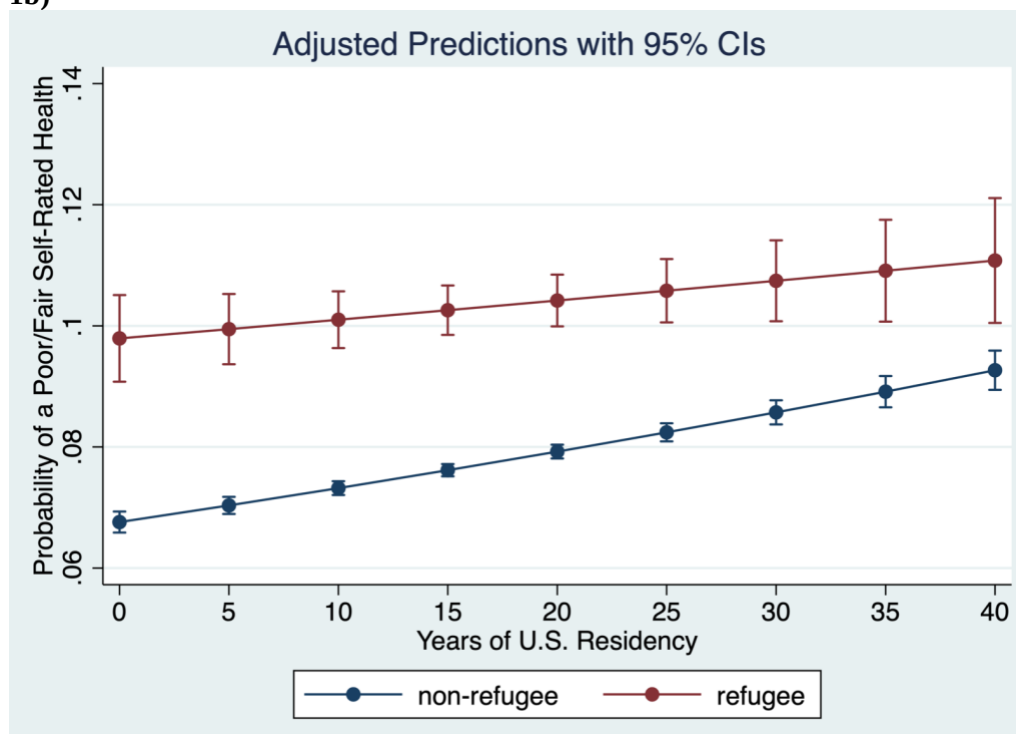


Figure 3.2a: Probability of a Work-Limiting Disability by Refugee Status and Duration of U.S. Residency, Adjusted for Differences in Other Controls (Table 3.3, Model 2a)

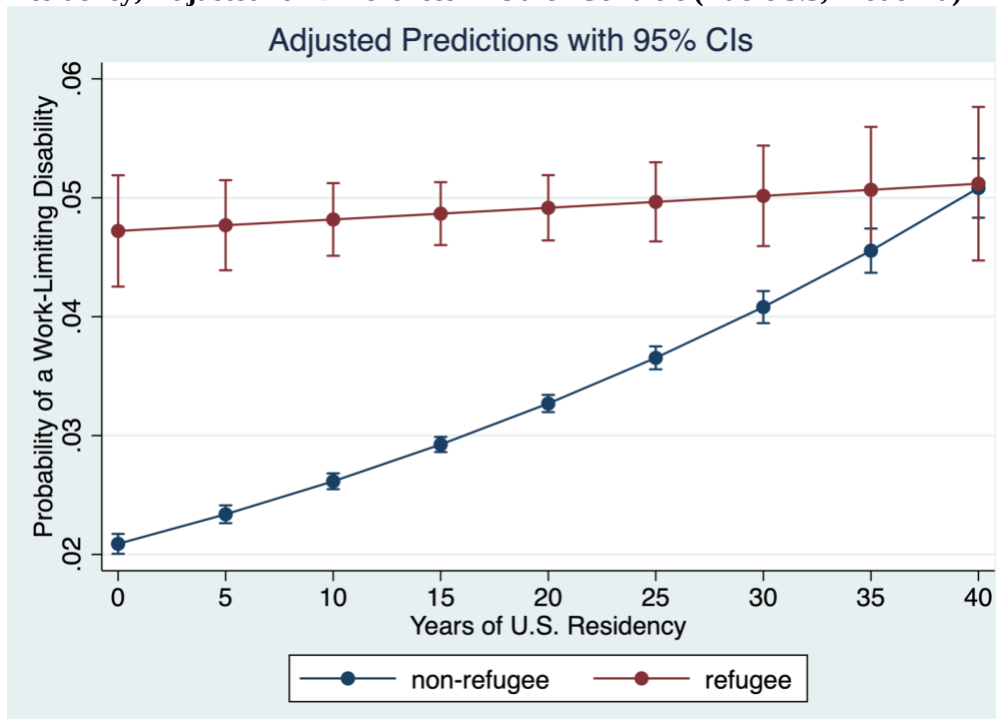
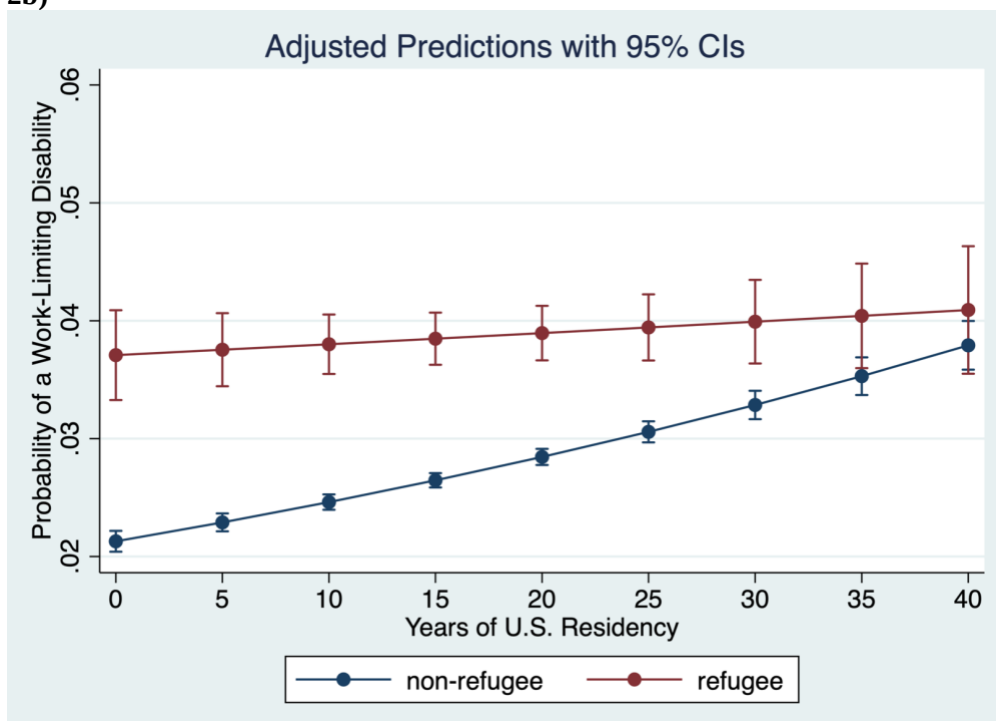


Figure 3.2b: Probability of a Work-Limiting Disability by Refugee Status and Duration of U.S. Residency, Adjusted for Differences in Healthcare Access, and Other Controls (Table 3.3, Model 2b)



CHAPTER 4

WHO ARE SOCIALLY INTEGRATED? EVIDENCE FROM NETWORK ANALYSES OF THE BREADTH AND DEPTH OF YOUTH'S SCHOOL FRIENDSHIP NETWORKS BY IMMIGRANT GENERATION

INTRODUCTION

To understand how migrants and their descendants fare in their new destinations, researchers typically compare them to long-standing, native-born majority groups on a variety of measurable outcomes. Immigrant integration is thus defined as the process by which migrant groups converge with majority groups on these measures over time (National Academies of Sciences 2015). One key dimension of integration describes the extent to which migrants and their descendants are incorporated into the social structure of their new societies (Gordon 1964). It is typically measured by examining the magnitude and content of individuals' non-kin social networks (e.g., friend group). Expectations consistent with assimilation-based theories are that migrants and their descendants become more well-connected with other members of society over time (or generations) and for the connections to expand beyond group boundaries delineated by ethnoracial status and immigrant generation (Alba and Nee 1997; Gordon 1964). Yet, studies that investigate whether and how both friendship likelihood and content vary by immigrant generations remain relatively, and the few that exist are often based on one data collection effort made over two decades ago.

The limited research on social integration belies its theoretical importance. That Gordon (1964) calls this process "structural" integration, which hearkens back to Georg Simmel's school of thought that views social relationships between individuals as the basic building block of

society (Simmel 1950). At the societal level, meaningful relationships established between members of recent migrant groups and other members of the receiving society act as an indicator of social cohesion (Eve 2002). At the individual or group level, social integration is considered an important catalyst for integration on other life dimensions and for achieving parity in critical life outcomes for members of recent migrant groups (Brown 2006; Gordon 1964; McMillan 2019). Due to both data and methodological limitations, however, research on social integration remains rare. There are currently few in-depth data that can identify an individual's immigrant generational status beyond their nativity (e.g., foreign- versus native-born), and fewer still that include friendship information. Methodologically, many studies have analyzed friendships as an attribute of the individual, which does not take into consideration co-dependency in friendship development. That is, whether two individuals become friends may depend on the availability of peers and whether other friendships exist.

The purpose of this research is to investigate whether social integration is occurring across immigrant generations with respect to both friendship likelihood and content, and whether differences in the integration measures between generation groups originate from a lack of social participation by individuals or social acceptance by peers. To answer these questions, I use social network methods to analyze the individual attributes and friendships of students who attended two migrant-diverse high schools, one each in the Midwest (N = 1336) and Southwest (N = 2207) of the United States. One advantage to studying social integration in diverse school contexts is it provides students with contact opportunities to befriend those from different social groups, thus creating the necessary conditions to investigate social integration processes. The survey data I use comes from the Teen Identity, Development and Education Study (TIDES), which includes information on respondents' familial migration history, allowing me to

distinguish generational status from first to fourth-plus (i.e., immigrants, the children of immigrants, and grandchildren of immigrants, and the grandchildren of native-born, respectively).

Because post-1965 immigration waves brought about a more socioeconomically and ethnoracially diverse immigrant-origin population in the United States, questions about social integration are often targeted at this population with theoretical comparisons often made between them and those who have lived in the United States prior to 1965. The latter are theoretically conceived as the long-standing, native-born majority. To make comparisons across immigrant generations and between post-1965 migrants and native-born majority members today, it is important that immigrant generations are distinguished up to the fourth-plus generation (i.e., the current grandchildren of native-born). Due to data limitations, most studies on the immigrant-origin population rarely make distinctions beyond nativity status (i.e., immigrant versus native-born), let alone distinguishing a fourth-plus generation. This study thus allows for a nuanced comparison by immigrant generations that is necessary to advance theoretical understanding of immigrant social integration. I use network models to test for and control different individual- and network-level processes that may shape the overall school friendship network and drive differences in friendship engagement across the four generation groups. Implications of these results on immigrant integration and the state of intergroup relations in the United States are further discussed.

THEORETICAL PERSPECTIVES AND HYPOTHESES

Changes Across Generational Status as a Measure of Immigrant Integration

Theoretical perspectives on immigrant integration in the United States are largely assimilation based. These coalesce around that idea that, across successive generations, migrants and their descendants should become more incorporated into American society such that differences between migrant groups and the native-born majority should gradually disappear (Alba and Nee 1997; Park and Burgess 1921; Warner and Srole 1945). Within this framework, Milton Gordon (1964) enumerated different interdependent dimensions of integration and placed particular emphasis on social or structural integration, which he defined as the widespread entrance of new immigrants and their descendants into the social networks of the receiving society at a primary-group level (pg. 71). Gordon believed social integration reduces prejudice and acts as the catalyst for more complete integration on other dimensions, and indeed intergroup contact theory have similar predictions for intergroup contact between majority and minority members of society (Allport 1954). Although Gordon was wary that ethnoracially organized institutions in the United States would obstruct social integration, the idea that generational changes move in the direction of assimilation remains the central maxim of classic assimilation and the dominant view across most of the 20th century (Warner and Srole 1945; Gans 1992).

A new era in U.S. immigration, marked by the passage of the 1965 Hart-Celler Act, began to challenge scholars to reconsider the assimilation framework. The Hart-Celler Act abolished the national-origin quota system that prioritized migration from Europe, which kept the rate of immigration to the United States from the 1920s to 1960s at a historic low. The flow of migration into the United States became more robust after comprehensive immigration reform was passed, and most of the new migrant groups came from Latin America and Asia. As the focus of immigration research shift toward these more ethnoracially and socioeconomically diverse new groups, new theoretical perspectives emerged, pushing back on the assumptions of

cross-generational integration and articulating new challenges facing these groups. From segmented assimilation to racialization, many of the new perspectives entertained the possibility that members of migrant groups may remain marginalized even after generations of living in the United States due to the effects of ethnoracial discrimination (Portes and Zhou 1993; Telles and Ortiz 2008). Proponents of neo-classic assimilation argue, however, that by and large cross-generational integration is still the de facto process experienced by new arrivals (Alba and Nee 1997; Kasinitz et al. 2009).

This research extends the theoretical discussion on the state of social integration for post-1965 migrants and their descendants by accessing whether and how friendship patterns vary by different immigrant generations, from first to fourth-plus generation. Given the passage of time, the descendants of post-1965 migrants should make up the third-generation or lower-order generation youth of today. The fourth-plus-generation should generally be the descendants of those who have lived in the United States prior to the 1965 immigration reform. They represent the theoretically conceived U.S. native-born majority within the immigration literature. Although the fourth-plus generation is a geopolitically and theoretically significant group, few studies on U.S. immigrant integration separate them from lower-order generations, especially the third or second generation. By examining how friendship patterns vary across all four immigrant generational groups, this research can better clarify the pace and extent of social integration and test the expectations of different theoretical perspectives.

School Friendships and Cross-Generational Integration

Few relationships are as intimate and voluntary in nature as friendship. The intimacy helps satisfy individual instrumental and psychosocial needs via resource sharing and group

belonging (Bukowski and Sippola 2005) while also acting as a moderator for peer influence (Brechwald and Prinstein 2011). Peer processes are formational to individual social identity and needs during adolescence. The voluntary nature of friendship allows for testing of social processes that could affect individual friendship choices, including the saliency of social group boundaries. Because school is a major site of social activities among adolescents, assessing the extent to which school friendship patterns are stratified by immigrant generational status can shed light on the process of social integration among youth.

Studies on youth's social integration have usually focused on the breadth and depth of their school friendship network. At a fundamental level, conversations about social integration must begin with the simple question of whether an individual has any friends and whether the likelihood of friendship varies by immigrant generations. In the section below, I discuss at length how the answer to this question is complicated by inconsistencies in how friendship is defined and measured in the literature (Bukowski and Sippola 2005). If friendship exists, the next question to ask is, what is the content of that friendship? Does the friendship involve individuals who share the same or different group memberships? Having no friends is an indicator of low integration. At the same time, having only same-group friends in a social environment that offers ample opportunities for cross-group friendships also reveals limited social integration.

Friendship Likelihood and Complications Arising from Defining and Measuring Friendship

What counts as a friendship? Implicit in sociological conceptualization of friendship is a sense of reciprocity (Coleman 1988; Newcomb 1956; Wolff 1950). Reciprocated friendship is one in which both individuals involved recognize each other as a friend. Research has shown that reciprocated friendship is more stable (Gershman and Hayes 1983) and provides a stronger sense

of belonging than friendships that are not reciprocated (Block 2015; Vaquera and Kao 2008). Reciprocity in friendship has special theoretical significance in the immigrant integration literature as integration is conceived as a two-way process of changes that bring members of migrant groups and the native-born majority closer together. Vaquera and Kao (2008), using data from the 1994-1995 National Longitudinal Study of Adolescent Health (ADD Health), found that U.S. immigrant youth are less likely to have their self-reported friendship reciprocated compared to their native-born peers (i.e., second generation or higher). Reynold and Crea (2017), analyzing the same ADD Health dataset, further found that first generation youth are less likely to have their best friend nomination reciprocated compared to second-generation and third-plus generation peers. Using data collected more recently and analytical methods that can more comprehensively account for individual and network processes that may affect friendship development, I reassess the likelihood of reciprocated friendships across immigrant generations.

Hypothesis 1a: The likelihood of reciprocated friendship should increase across successive immigrant generations.

Many studies use friendship reports, wherein reciprocity is unverified, to study social integration. Plenty and Jonsson (2017), for example, assessed social isolation among Swedish youth by counting the number of times a youth is named as a friend by one of their classmates. In contrast, Cherng, Turney and Kao (2014) used individuals' self-report friendships to assess social isolation. Both studies came to similar conclusions that immigrants (or the first generation) are less likely to engage in friendships than their native-born peers. Yet, the different ways the two studies measured friendship (i.e., being named as a friend versus naming a friend) expose different dynamics underlying friendship stratification, dynamics that have been theorized but

often not empirical tested. How much of social integration (or lack thereof) is a consequence of (little) social acceptance and/or (little) social participation?

Segmented assimilation and racialization perspectives present the possibility that new migrant groups may experience slow or deterred integration due to a lack of *social acceptance* or even active discrimination by the native-born majority (Portes, Fernández-Kelly, and Haller 2005; Telles and Ortiz 2008). To test this theoretical expectation, I examine variations across immigrant generations in the likelihood of *being named* as a friend.

Hypothesis 1b: The likelihood of being named as a friend should increase across successive immigrant generations.

On the other hand, some scholars suggest that a lack of *social participation* is a likely cause of deterred integration in school for immigrant youth. Kao and colleague (1995; 2006) argue, for example, that first and second-generation youth are pressured by their families to prioritize investing in kin network over peer network. Relatedly, first-generation youth are also less likely to engage in school clubs and sports (Cherng et al. 2014; Makarova and Herzog 2014; Okamoto, Herda, and Hartzog 2013), which may reduce their opportunities to develop friendship with other peers (Schaefer et al. 2021). Ethnographic accounts also suggest that the first-generation in particular may fear social rejection or discrimination by native-born peers due language and cultural differences, leading to avoidance of friendship (Tsai 2006; Yeh et al. 2008). I assess whether a lack of social participation drives social integration by testing whether variations exist between immigrant generations in their likelihood of naming a friend (see Hypothesis 1c below). It is worth noting that H1b and H1c are not mutually exclusive. Given that integration is a two-way process, both a lack of social acceptance and social participation can together affect the extent and pace of social integration across immigrant generations.

Hypothesis 1c: The likelihood of naming a friend should increase across successive immigrant generations.

Friendship Content and Homophily

Beyond the question of who are more likely to have friends is the question of who are more likely to befriend whom, which exposes the content or depth of youth's friendship network. Research on intergroup relations has focused on one specific aspect of friendship content: whether the friendship occurs between members of the same social group. Friendship patterns highly stratified by group memberships suggest certain group boundaries are particularly salient in individual friendship choices, resulting in high segregation and low integration (Alba 2005). It is worth noting that homophily or the tendency to befriend those who share one's own salient background and interests is a normative process well-documented within the social network literature (McPherson, Smith-Lovin, and Cook 2001). And homophily based on ethnoracial status and nativity status are strong (Hallinan and Smith 1985; McPherson et al. 2001; van Zalk et al. 2013). Yet, what remains less clear is whether and how homophily varies by immigrant generation. This question is critical for evaluating different models of assimilation.

From the perspective of classic assimilation, ethnoracial homophily should decrease across successive immigrant generation as migrant groups become more exposed to members of the receiving society and form relationships with members of the native-born majority. Segmented assimilation and racialization models, on the other hand, expects ethnoracial homophily to remain strong across immigrant generations as migrant groups stay racialized in the receiving society. In analyses at the individual level, researchers have found evidence consistent with classic assimilation. Brown (2006) found that, among the Mexican-origin

population living in Los Angeles, those who are native-born were more likely to report a cross-group relationship with non-Hispanic individuals than those who are foreign-born (i.e., the first generation). Using data from ADD Health, Kao and Joyner (2006) also found that in general, first- and second-generation Hispanic and Asian youth, compared to their third generation peers, are less likely to choose cross-race friendship over same-race friendship, especially if the friendship is also same-ethnic.

McMillan (2019), one of the first to study social integration by applying network analysis to ADD Health data, find that generational homophily (i.e., the tendency to form same-generation over cross-generation friendship) is strongest among first generation youth and reduces across successive generations. Given that ethnoracial status and generation is often highly correlated, with post-1965 migrant groups being more likely to be non-White compared to the native-born majority group (National Academies of Sciences 2015), the finding raises questions about how much of homophily on one dimension is a product of the other. If there is a decrease in tendencies to form same-group friendship across generations, does it suggest it is the boundaries around ethnoracial status that become less salient or the boundaries around immigrant generation? To answer these questions, it is important to examine homophily by both ethnoracial status and generational status when assessing social integration in friendship patterns.

Hypothesis 2a: Ethnoracial homophily should decrease across successive immigrant generations.

Hypothesis 2b: Generational homophily should decrease across successive immigrant generations.

CURRENT STUDY

One major shortcoming from individual-level analysis of friendships, which makes up the majority of studies on social integration, is that they cannot account for higher-level processes or other sources of homophily that may produce similar relationship patterns. Goodreau, Kitts and Morris (2009) outline several mechanisms that can drive stratification by group memberships in friendship patterns. One mechanism is heterogeneity across groups in their likelihood to engage in a friendship, which itself is a measure of social integration. When groups are less likely to engage in friendships, certain network-processes can contribute to more in-group homophily in their friendship networks (see Schaefer, Kornienko, and Fox 2011). Another mechanism at the network level is the tendency for friends of friends to become friends, which is referred to as a triadic closure effect in social network research. Triadic closure can amplify the friendship patterns produced by homophily. Finally, there may be high correlations between individual characteristics such as ethnoracial background, immigrant generation, and socioeconomic status. Thus, effects of these different kinds of homophily can overlap to produce similar friendship patterns. Much of past research on social integration among youth is also based on data collected more than two decades ago such as ADD Health and the 2002 Educational Longitudinal Study. This raises questions about the abilities of findings based on such studies to speak to the intergroup dynamics that are occurring now.

In this research, I assess the state of cross-generation social integration by applying social network analytical methods to more recently collected data on school friendship networks to examine how friendship likelihood and friendship content vary across immigrant generations. First, I compare the (reciprocated) friendship likelihood of different immigrant generations to gauge whether and to what extent integration is occurring across successive generations (H1a). To further distinguish whether any differences in friendship likelihood between generations arise

from differential rates of social acceptance and/or social participation, I assess whether differences exist between immigrant generations with regards to their likelihood of being named as a friend (H1b) and of naming a friend (H1c). Second, I investigate friendship content to gauge whether there are differential tendencies to engage in same-race (H2a) and same-generation friendship (H2b) by immigrant generations, with higher rates of each representing lower integration and more segregation. Little research has examined homophily on both ethnoracial background and immigrant generation simultaneously, even though ethnoracial status and generation status are highly correlated and homophily arising from each has been independently found to vary across generation groups. Thus, I purpose to examine both in order to gauge to what extent are boundaries drawn around ethnoracial status and immigrant generational status independently affect social integration.

METHODS

Data

This study draws data from the Teen Identity, Development, and Education Study (TIDES), which was conducted in 2017-2018 to explore how peer networks affect adolescents' academic and social adjustment. Surveys on students' school friendships and individual characteristics were administered at three timepoints at two U.S. high schools, one each in a Midwestern and Southwestern suburban region of the United States. For this study, I use only Wave 2 data, collected in fall of 2018. The survey participation rates for this wave, which is highest among all three waves, are 88% and 86% at Midwest and Southwest High, respectively. I dropped students with missing network and immigrant status data (1.4% and 2.7% at Midwest and Southwest High, respectively), resulting in final analytical sample sizes of 1336 students at

Midwest High and 2207 students at Southwest High. This dataset offers some unique advantages for the study of immigrant structural integration, including relatively complete data on two large school friendship networks, ethnoracially diverse student samples, and information on immigrant generation that extends to the nativity of grandparents, which allows for the rare distinction between third generation (the grandchildren of immigrants) and fourth-plus generation students (the grandchildren of U.S. born).

Measures

Friendship network. Each student was asked to name ten of their closest friends in school. I use this list to construct two types of friendship networks, one includes only friendship nominations that were reciprocated, and another includes all friendship nominations. At both Midwest and Southwest High, less than half of the friendship nominations were reciprocated (see Table 1).

Immigrant generational status. Respondents were also asked theirs, their parents', and their grandparents' birthplaces. Using this information, I delineate whether respondents are first generation (foreign-born self), second-generation (U.S.-born self with at least one foreign-born parent), third generation (U.S.-born self, U.S.-born parents and at least one foreign-born grandparent), or fourth-plus generation (U.S.-born self with U.S.-born parents and grandparents). The fourth-plus generation are often conceived as the native-born majority within the immigration literature.

Ethnoracial Background: I coded respondents' ethnoracial background into five categories (i.e., Asian, Black, Latinx, White, and other) based on their answers to the three ethnoracial questions. The first question asked respondents to choose all ethnoracial categories

that apply to them from six categories provided: Black/African American, Latino or Hispanic, Asian, American Indian/Native American, White, and other. For those who chose more than one category, a second question asked them to narrow down to one category to which they feel the most belonging. Finally, for those whose final answer was still “Other,” they were asked to specify their ethnicity. I recoded the ethnicity specified into one of the other ethnoracial categories if appropriate (e.g., Irish is coded as White). Because American Indian/Native American represents a very small proportion of the sample, I incorporate them into the “Other” category. About 5 and 7 percent of the student surveyed from Midwest and Southwest High, respectively, are categorized as other after this classification scheme.

Controls. I also include as controls other individual demographics, including gender, parental education, and grade cohort. Gender and parental education are coded as binary variables, wherein a code of 1 for each respective variable indicates a respondent identifying as female and having at least one college-educated parent. Grade cohort corresponds to respondents’ grade level (9th to 12th grades).

Analytical Strategy: Exponential Random Graph Models

To test my hypotheses on differential friendship patterns across immigrant generation, I estimate exponential random graph models (ERGMS). ERGMS are a class of probabilistic model used for analyzing social network data, which in this case is comprised of a set of persons (i.e., students), their individual attributes, their pairwise relationships (i.e., friendship), and the content of those relationships (i.e., same versus cross-group relationship). ERGM estimates the probability of an observed social network as a function of network-level and individual-level processes hypothesized to occur beyond random chance, which are expressed through model

covariates. The parameters of these covariates are estimated using a Markov Chain Monte Carlo maximum likelihood approach, which first draws a random sample of networks from a specific probability distribution (i.e., a range of possible networks and their probability of occurring under the given model), then uses this sample to approximate a true likelihood function, and finally maximizes the function to produce parameter estimates (see Robins et al. 2007 and Hunter and Handcock 2006 for more details). ERGMs hence allow for the testing of and inferences about social processes that can potentially contribute to the formation of an observed pattern of friendships among individuals.

An advantage to using ERGMs is it allows for the assumption and explicit modeling of dependencies between friendships, such as the idea that friends of friends are more likely to become friends (i.e., triad closure). In other words, the likelihood of a friendship between two individuals may depend on whether they share a mutual friend. Failing to account for these endogenous network-level processes can lead to biased estimations about whether and the extent to which homophily or the propensity to form same-group relationships contributes to the observed friendship pattern (see Goodreau, Kitts, and Morris 2009 for discussion).

ERGM parameter estimates can be interpreted similar to parameter estimates of a logistic regression. With friendship being the unit of analysis, an ERGM parameter estimate indicates the change in log odds that a friendship exists between any two individuals in the network given a one-unit change in the corresponding indicator. There are two types of parameters in my model. One type relates to endogenous network-level processes and is generally included to control for confounding effects. A second type relates to the direct effects of individual-level attributes and their indirect effects via homophily. The key indicators of social integration (i.e., friendship

likelihood by immigrant generation and homophily by ethnoracial status and immigrant generation) used in this study represents the second type of parameter estimates.

Key effects: I include a main effect of *immigrant generational status* on friendship likelihood to test whether friendship distribution reflects a pattern of greater integration across successive immigrant generations. Two other effects of interests are homophily by ethnoracial status (*same-race*) and by immigrant generational status (*same-generation*). I expect these two types of homophily to decrease across successive immigrant generations, indicating greater social integration. The parameter estimates for the two terms indicate whether and to what extent members from each generational status are more likely to befriend same-group peers over cross-group peers.

Individual-level processes: I include as controls other attribute-based tendencies to form friendship that may correlate with my main social integration measures. I include a main effect for *ethnoracial status* to account for differences in friendship likelihood by ethnoracial status. Ethnoracial status and immigrant generation are correlated. Without accounting for a main effect of the former, estimations of friendship likelihood across immigrant generations may be biased. I also account for homophily based on gender (*same gender*) and socioeconomic background (*same parental SES*) to generate better model fit. Finally, I also account for the tendency for friendship to develop among those with less of a gap in their grade level than among those with more via a *difference in grade level* effect. A 9th grader and a 12th, for example, are less likely to become friends than a 9th grader and a 10th grader, who in turn are less likely to become friends than a 9th grader and another 9th grader.

Endogenous network-level processes: I control for two fundamental network processes. The first, *friendship skew*, accounts for the cost of friendship that should discourage individuals

from naming more friends for each additional friendship nomination they make.¹⁵ The second control is for *open triad* and *closed triad*. Together, these account for the effect of friends of friends becoming friends. The open triad accounts for the preconditional friendship pattern related to this effect, that is between any two individuals i and j , is there a shared friendship with k (i.e., friendships between $i-k$ and $k-j$)? The closed triad measures the extent to which triadic closure occurs such that i and j are friends whenever friendships exist between $i-k$ and $k-j$.¹⁶

RESULTS

Descriptive Statistics

Table 4.1 shows the sociodemographic composition and friendship patterns by immigrant generation and school. Midwest High has a more even distribution of immigrant generations (first = 16%, second = 36%, third = 11%, fourth plus = 37%) compared to Southwest High (first = 3%, second = 24%, third = 19%, fourth plus = 54%), where first generation students are few and fourth-plus generation students make up a majority. Although both schools are ethnoracially diverse, Midwest High's main ethnoracial groups are Asian (25%), Black (23%) and White (40%) while Southwest High's are Latinx (27%), Black (29%), and White (32%). An overwhelming majority of fourth-plus generation students at both schools identified as either Black or White, which reflects the longer history of these native-born groups in the United States. Finally, Midwest High is more affluent than Southwest High: 71% of students at Midwest High have at least one college-educated parent compared to 49% at Southwest High.

¹⁵ The ERGM term used to control for friendship skew is a geometrically weighted degree term.

¹⁶ I use geometrically weighted dyad-wise shared partner and edgewise shared partner terms to account for open and closed triadic effects.

INSERT TABLE 4.1 HERE

Table 4.1, along with Figure 4.1, reveals that at both schools there is a general linear trend of more friendship engagement from first to third generation. A statistically significant difference exists between first generation and all other generations at Midwest High in mean numbers of both reciprocated friendship and friendship nomination from peers. Based on results from two-sample Wilcoxon tests, first generation students at Midwest High engaged in fewer reciprocated friendships (mean = 1.27, SD = 1.40) compared to second (mean = 1.64, SD = 1.66) and third generation (mean = 1.70, SD = 1.74). They also on average received one friendship nomination fewer from peers (mean = 2.70; SD = 2.42) compared to the second (mean = 3.85, SD = 2.93), third (mean = 3.85, SD = 3.01), and fourth-plus generations (mean = 3.60, SD = 2.71).

Figure 4.2 shows that at both schools the proportion of reciprocated same-ethnic friendships increases across immigrant generations. The proportion of reciprocated friendships within the same generation, on the other hand, does not demonstrate a similar linear trend across immigration generations (see Figure 4.3). It appears the proportion of same-generation friendship varies by the size of immigrant generation. At Southwest High, the first generations make up a small group (N = 67), and no first-generation student reports a friendship with another first-generation student. Visualization of the friendship networks at both schools in Figure 4.4 shows some clustering of friendships by generational status and ethnoracial background, with some friendships involving individuals who share *both* ethnoracial status and immigrant generation. Overall, these descriptive trends at a bivariate level provide mixed support for cross-generation social integration and, as expected, show an overlap between ethnoracial and generational

homophily. There are some differences between the two schools that suggest some processes may be based on school-level contexts.

INSERT FIGURE 4.2, 4.3 AND 4.4 HERE

ERGM Results

To test the hypotheses regarding social integration more rigorously, I employ exponential family random graph models to estimate the likelihood of a reciprocated friendship and of a friendship nomination based on individual characteristics, friendship content, and network-level processes. Results show differences in friendship patterns across immigrant generational status are present even after controlling for individual-level and network-level processes. First, I test whether the likelihood of reciprocated friendship differs by immigrant generations, with successive generations showing an increase in friendship likelihood (H1a). The results, shown in Table 4.2, are complicated by differences between schools. At Midwest High, the second ($b = 0.34$, $se = 0.11$) and third generations ($b = 0.32$, $se = 0.11$) are each about 1.4 times more likely to engage in a reciprocated friendships than the first generation. The fourth-plus generation's (i.e., the native-born majority group) odds of engaging in a reciprocated friendship is not significantly different from the first generation's, however. At Southwest High, the likelihood of reciprocated friendship does not differ by generation. Overall, these results provide partial support for H1a. At Midwest High at least, cross-generational integration is occurring among members of post-1965 migrant groups. The native-born majority group, however, is not more integrated compared to the first generation with regards to reciprocated friendship.

INSERT TABLE 4.2 HERE

Next, I test whether differences in friendship likelihood are driven by social acceptance (H1b) and/or social participation (H1c) by modeling the likelihood of any friendship nominations, regardless of reciprocity (see Table 4.3). At Midwest High, the likelihood of individuals naming a friend do not differ by immigrant generation; however, second- ($b = 0.43$, $se = 0.07$), third- ($b = 0.46$, $se = 0.08$), and fourth-plus-generation ($b = 0.37$, $se = 0.08$) students are about 1.5 times more likely to *be named* as a friend compared to first-generation students. I also estimate reciprocated friendship by generational status in this model, which could be accounted for by differential odds of naming and being named as a friend by generational status. I find that the disadvantage first generation experienced in reciprocated friendship likelihood is not present in this model, suggesting that the lack of friendship nominations from peers is what drives the lower odds of reciprocated friendship for the first generation found in Table 4.2. At Southwest High, again, friendship nominations do not differ by immigrant generations. Overall, these results partially support for H1b, that social acceptance (or lack thereof) is a driver of social integration, but provide no support for H1c, that a lack of social participation is a driver of social integration.

INSERT TABLE 4.3 HERE

Finally, to assess whether friendship content exhibits patterns indicative of cross-generation integration, I test whether there are trends of decreasing ethnoracial homophily (H2a) and generation homophily (H2b) across immigrant generations. Because large differences in

groups sizes affect the magnitude of homophily estimates, a problem related to scaling (see Duxbury 2021), I use predicted friendship probabilities to interpret the findings. These are not affected by scaling. Table 4.4 shows the predicted friendship nomination probabilities for same-ethnic and same-generation by immigrant generations. To calculate the predicted probabilities, I add the log odds of same-group friendship (over cross-group friendship) by generational status to the base log likelihood of friendship and the log odds of naming and being named as a friend by generational status, and then convert the combined log odds to a probability. For example, for the predicted probability of a second-generation, same-ethnic friendship nomination at Midwest High, the log odds I combined are: .522 (same-ethnic friendship) – 5.902 (base log likelihood) + .087 (naming a friend) + .432 (being named as a friend). The predicted probabilities shown in Table 4.4 reveal mixed findings, differing between the two schools. The probability of a same-ethnic friendship nomination increases across immigrant generations at Midwest High, with first generation demonstrating the lowest probability. The increase runs contrary to H2a. At Southwest, there is not a linear trend. On the other hand, the probability of a same-generation friendship nomination decreases across immigrant generations at Southwest High, and there is no linear trend found at Midwest high. This provides partial support for H2b. Differences between the two schools suggest local contexts play an important role in social integration.

INSERT TABLE 4.4

Beyond hypothesis testing, ERGM estimates the effects of processes included as controls. These effects are significant and consistent across the two schools, except for the main effect of ethnoracial status on friendship nomination. With regards to friendship content, gender

homophily ($b = 0.63$, $se = 0.03$ at Midwest High; $b = 0.60$, $se = 0.02$ at Southwest High) and parental SES homophily ($b = 0.25$, $se = 0.02$ at Midwest High; $b = 0.19$, $se = 0.02$ at Southwest High) are significant. Students are also less likely to engage in friendship with those who are further away from them in grade level ($b = -1.23$, $se = 0.03$ at Midwest High; $b = -1.29$, $se = 0.03$ at Southwest High). With regards to network-level processes, students are less likely to name a relatively large number of friends ($b = -2.0$, $se = 0.09$ at Midwest High; $b = -1.77$, $se = 0.07$ at Southwest High) and more likely to name a friend's friend as a friend. The positive parameter estimates for closed triads ($b = 1.56$, $se = 0.03$ at Midwest High and $b = 1.63$, $se = 0.02$ at Southwest High) indicate a significant tendency for friendship nomination to occur when the individuals involved share a mutual friend, while the negative parameter estimates for open triads ($b = -0.15$, $se = 0.01$ at Midwest High; $b = -0.11$, $se = 0.01$ at Southwest High) suggest that the sharing of mutual friends itself is not a common occurrence. At Midwest High, while there is not a significant difference in friendship nomination rates across ethnoracial groups, all groups are more likely to *be named* as a friend than White students. At Southwest High, Asian students are more likely to name a friend ($b = 0.19$, $se = 0.06$) and be named as a friend ($b = 0.13$, $se = 0.07$) than White students, and students who identified ethnoracially as Other ($b = 0.22$, $se = 0.04$) are more likely to name a friend than White students.

DISCUSSION

Since the 1965 immigration reforms, the number of immigrants entering the United States has risen exponentially, and subsequently the share of the U.S. population that is a few generations removed from immigration has expanded. This group tends to be more demographically diverse than the native-born majority, leading scholars to question whether and

to what extent are they experiencing integration. The classic assimilation model that dominated theoretical discourse throughout much of the 20th century posits that the descendants of newcomers should achieve parity with the native-born majority on various critical life outcomes and the groups should converge over successive generations. Segmented assimilation and racialization models, on the other hand, suggest racialization of new migrant groups presents a significant challenge to integration. Within the literature, relatively few studies have focused specifically on *social* integration even though isolation or marginalization on this dimension can have dire consequences on individuals' ability to accumulate capital, break through social and cultural barriers, and make advances in other life domains. A lack of social integration for members of recent migrant groups could also negatively impact social cohesion at the societal level.

In this study, I use social network methods to analyze the friendship networks of two U.S. high schools. This offers a case study of the state of social integration among American youth who are immersed in socially diverse school contexts. I measure social integration examining the breadth and depth of friendship networks and assessing whether and how these measures vary across immigrant generations. Using TIDES data offers an advantage of more granular-level data, which allows for the identification of students' generational status (i.e., those who are immigrants themselves and those who are the children and grandchildren of immigrants). Critically, students who are the grandchildren of native-born individuals are also identifiable, which allows for a comparison between the descendants of more recent migrant groups (i.e., those who arrived after 1965) and the descendants of the native-born majority as commonly conceived in the U.S. immigration literature.

A second advantage is the data allow for separate examinations of reciprocated friendships and all friendship nominations. While reciprocated friendship is theoretically significant for the concept of integration, examining all friendship nominations, regardless of reciprocity, provides some leverage for exploring the push or pull factors driving social integration. Finally, the recency of the TIDES data collection effort means that this data can speak more directly to the kinds of integration processes and group dynamics that are occurring among American youth today. Even though the data focuses only on two schools, which makes broader generalization risky, analysis still provides important insights into whether and how social integration can occur in migrant-diverse schools as expressed through patterns of friendships among school peers.

Four findings are particularly worth highlighting from this study. First, results suggest that cross-generational social integration is selectively occurring and may depends on local school context. The second and third generation are more likely to engage in reciprocated friendship than the first generation at Midwest High. At Southwest, there is a decrease in probability of same-generation friendship over time, meaning students become more open to interacting across generational boundaries the higher their generational status. At both school tendencies toward same-ethnic friendship either remain the same across generations or become even more (rather than less) entrenched across immigrant generations.

A second important finding is that the lower reciprocated friendship likelihood for the first generation at Midwest High appears to arise from a lack of social acceptance from school peers, rather than a lack of social participation. First generation students are significantly less likely to be chosen as a friend by their peers. In a follow-up analysis, I estimated an ERGM model that specifies the likelihood of friendship nomination between each ordered pair of

immigrant generations at Midwest High (see Table 4.4). I find that, compared to the odds of a first-generation naming another first generation as a friend, the odds of any other generation naming a first generation as a friend is significantly lower. This suggests that the first generation is unanimously seen as less acceptable friends by all other generation groups. At Southwest High, in contrast, first generation students are equally likely to be named as a friend. One potential explanation for this school-based difference is that the first generation represents a more salient social group at Midwest High than at Southwest High. A study by Smith et al. (2016) finds that, consistent with group-threat theory, native-born youth's friendships become more homophilous when they perceive a dense groups of immigrants, which is more likely to be the case at Midwest High, where the first-generation share of the student sample is 16% compared to the 3% at Southwest High.

A third insight from this study is that the fourth-plus generation (i.e., the native-born majority group) is not more integrated than the first generation, at least in terms of reciprocated friendship likelihood and ethnoracial homophily. Going by generations of residence in the United States alone, one would assume the fourth-plus generation would be the most socially adaptive by being more likely to have friends and more likely to have friendships that cut across ethnoracial and generational group boundaries. Yet, I find that this is generally not the case.

A final finding worth noting is that friendship patterns distinctly differ between the two schools, which also differ in their immigrant-generation and ethnoracial compositions. Overall, Southwest High appear to have a more socially integrated school environment than Midwest High. Although first-generation students represent a larger share of the student population at Midwest High, they are also isolated by other generation peers. This is not the case at Southwest High. Predicted probability of same-ethnic friendship nomination also increases across

generations at Midwest High while predicted probability of same-generation friendship nomination decreases across generations at Southwest High. Future research would benefit from leverage differences in local school context to better understand the social environmental factors that may affect immigrant social integration.

CONCLUSION

Although U.S. schools have become increasingly diverse social spaces as more immigration has led to demographic changes, students immersed in various school contexts are not necessarily equally integrated, and this does not pertain only to immigrants. The findings of the study suggest the expectations and concerns arising from the classic assimilation model on the one hand and segmented assimilation and racialization models on the other hand both warrant some consideration. On the one hand, the descendants of recent migrant groups are doing well in school, becoming more socially well-adjusted across generations in terms of making more friends in schools. On the other hand, certain groups boundaries, especially ones based on ethnoracial background, appear deeply entrenched and suggests more attention should be paid to understand how members of more long-standing groups are also reacting and adapting to rapidly changing U.S. demographics, and whether they themselves are as integrated into their changing environments as one might think. After all, complete social integration at the societal level will remain out of reach until both recent arrivals and more long-standing groups both adapt to and accommodate one another.

Table 4.1: Descriptive Statistics by School and Immigrant Generation

	Midwest High										
	All			First		Second		Third		Fourth-plus	
	mean	SD	% Missing	mean	SD	mean	SD	mean	SD	mean	SD
Friendship nomination (N)											
Reciprocated friendship	1.6	1.6	0.00	1.3	1.4	1.6	1.7	1.7	1.7	1.6	1.7
Naming a friend	3.6	3.0	0.00	3.3	2.9	3.7	3.0	3.8	3.0	3.5	3.1
Being named as a friend	3.6	2.8	0.00	2.7	2.4	3.9	2.9	3.8	3.0	3.6	2.7
Ethnoracial Background (%)											
Asian	24.6		0.07	50.0		43.7		7.4		0.2	24.6
Black	23.4		0.07	11.0		13.5		18.1		40.0	23.4
Latinx	7.3		0.07	14.3		12.4		2.0		1.0	7.3
Other	5.2		0.07	7.6		7.5		4.7		2.0	5.2
White	39.6		0.07	17.1		23.0		67.8		56.8	39.6
Parent College-Educated (%)	70.7		7.19	73.0		71.7		79.9		66.1	70.7
Gender (female) (%)	46.3		1.12	50.0		47.8		38.4		45.5	46.3
Grade level (%)											
Ninth	30.3		0.00	26.2		31.0		32.9		30.6	30.3
Tenth	25.7		0.00	22.9		25.6		22.8		28.0	25.7
Eleventh	25.7		0.00	29.5		27.1		26.2		22.5	25.7
Twelfth	18.3		0.00	21.4		16.3		18.1		18.9	18.3
Immigrant Generation (%)											
First	15.7		0.00								15.7
Second	36.2		0.00								36.2
Third	11.2		0.00								11.2
Fourth plus	36.9		0.00								36.9
N	1336			210		484		149		493	

Table 4.1 cont'd

	Southwest High										
	All			First		Second		Third		Fourth-plus	
	mean	SD	% Missing	mean	SD	mean	SD	mean	SD	mean	SD
Friendship nomination (N)											
Reciprocated friendship	1.3	1.4	0.00	1.2	1.5	1.3	1.3	1.4	1.5	1.3	1.5
Naming a friend	3.1	2.8	0.00	2.7	2.9	3.0	2.6	3.1	2.8	3.1	2.9
Being named as a friend	3.1	2.5	0.00	2.9	2.4	3.1	2.4	3.0	2.4	3.1	2.5
Ethnoracial Background (%)											
Asian	4.1		0.07	37.3		9.5		1.9		0.5	
Black	28.9		0.07	14.9		13.2		22.2		39.2	
Latinx	27.4		0.07	28.4		55.7		39.0		10.5	
Other	7.3		0.07	4.5		5.0		6.7		8.6	
White	32.3		0.07	14.9		16.6		30.1		41.2	
Parent College-Educated (%)	49.1		7.19	62.9		40.9		42.9		54.2	
Gender (female) (%)	53.2		1.12	50.7		55.5		54.0		52.0	
Grade level (%)											
Ninth	29.3		0.00	20.9		31.8		32.2		27.5	
Tenth	26.6		0.00	19.4		25.3		26.7		27.5	
Eleventh	23.3		0.00	32.8		22.3		24.0		22.9	
Twelfth	20.9		0.00	26.9		20.5		17.1		22.1	
Immigrant Generation (%)											
First	3.0		0.00								
Second	24.3		0.00								
Third	18.8		0.00								
Fourth plus	53.8		0.00								
N	2207			67		537		416		1187	

Table 4.2: Exponential Family Random Graph Model Results for Reciprocated Friendship

	Midwest High			Southwest High		
	Coef.	SE		Coef.	SE	
Base log likelihood of friendship	-6.643	(0.268)	***	-6.759	(0.309)	***
Main effect of generational status						
First gen. (ref. group)	--			--		
Second gen.	0.340	(0.106)	**	0.023	(0.132)	
Third gen.	0.323	(0.113)	**	0.116	(0.135)	
Fourth gen. plus	0.186	(0.110)		0.050	(0.143)	
Same-ethnic friendship						
First gen.	1.049	(0.142)	***	1.136	(0.236)	***
Second gen.	0.980	(0.087)	***	0.924	(0.093)	***
Third gen. plus	0.913	(0.143)	***	0.727	(0.103)	***
Fourth gen. plus	1.089	(0.094)	***	0.986	(0.065)	***
Same-generation friendship						
First gen.	0.699	(0.215)	**	-Inf		
Second gen.	-0.056	(0.140)		0.084	(0.148)	
Third gen. plus	0.035	(0.276)		0.212	(0.165)	
Fourth gen. plus	0.189	(0.145)		0.048	(0.117)	
Other controls						
Main effect of ethnoracial status						
White	--			--		
Asian	0.107	(0.054)	*	0.370	(0.084)	***
Black	0.045	(0.042)		-0.140	(0.033)	***
Latinx	0.222	(0.086)	**	-0.022	(0.038)	
Other	0.353	(0.090)	***	0.123	(0.062)	*
Same gender	1.249	(0.070)	***	1.286	(0.061)	***
Difference in grade level	-2.176	(0.088)	***	-2.125	(0.071)	***
Same parental SES	0.479	(0.062)	***	0.384	(0.049)	***
Closed triads	1.633	(0.053)	***	1.914	(0.045)	***
Open triads	-0.257	(0.037)	***	-0.247	(0.036)	***
Friendship skewness	-1.195	(0.148)	***	-1.051	(0.123)	***

*** p < 0.001; ** p < 0.01; * p < 0.05

Table 4.3: Exponential Family Random Graph Model Results for All Friendship Nominations

	Midwest High			Southwest High		
	Coef.	SE		Coef.	SE	
Base log likelihood of nomination	-5.902	(0.094)	***	-6.138	(0.141)	***
Generation status of person naming a friend						
First gen. (ref. group)	--			--		
Second gen.	0.087	(0.060)		0.122	(0.094)	
Third gen.	0.103	(0.080)		0.117	(0.097)	
Fourth gen. plus	-0.068	(0.065)		0.024	(0.096)	
Generational status of person being named as friend						
First gen. (ref. group)	--			--		
Second gen.	0.432	(0.069)	***	0.105	(0.098)	
Third gen.	0.460	(0.081)	***	-0.010	(0.101)	
Fourth gen. plus	0.368	(0.075)	***	-0.022	(0.100)	
Reciprocated friendship by generational status						
First gen.	2.119	(0.089)	***	2.386	(0.158)	***
Second gen.	1.853	(0.053)	***	2.190	(0.058)	***
Third gen.	1.939	(0.098)	***	2.337	(0.064)	***
Fourth gen. plus	1.934	(0.052)	***	2.136	(0.039)	***
Same-ethnic nomination (ref. = different ethnic)						
First gen.	0.510	(0.070)	***	0.471	(0.135)	***
Second gen.	0.522	(0.039)	***	0.379	(0.047)	***
Third gen.	0.422	(0.078)	***	0.359	(0.051)	***
Fourth gen. plus	0.619	(0.046)	***	0.597	(0.028)	***
Same-generation nomination (ref. = different generation)						
First gen.	0.293	(0.090)	**	0.487	(0.190)	*
Second gen.	0.055	(0.055)		0.009	(0.056)	
Third gen.	0.082	(0.106)		0.057	(0.072)	
Fourth gen. plus	0.138	(0.061)	*	0.129	(0.045)	**

Other controls					
Ethnoracial status of person naming a friend					
White	--			--	
Asian	-0.028 (0.038)			0.192 (0.057)	***
Black	0.004 (0.032)			-0.035 (0.027)	
Latinx	0.093 (0.053)			0.019 (0.030)	
Other	0.090 (0.058)			0.219 (0.041)	***
Ethnoracial status of person being named as friend					
White	--			--	
Asian	0.215 (0.047)	***		0.133 (0.067)	*
Black	0.127 (0.039)	**		0.007 (0.031)	
Latinx	0.179 (0.067)	**		-0.003 (0.036)	
Other	0.324 (0.069)	***		-0.038 (0.052)	
Same gender	0.631 (0.027)	***		0.598 (0.023)	***
Difference in grade level	-1.233 (0.031)	***		-1.288 (0.026)	***
Same parental SES (ref. = different parental SES)	0.249 (0.023)	***		0.185 (0.017)	***
Closed triads	1.563 (0.029)	***		1.630 (0.024)	***
Open triads	-0.146 (0.006)	***		-0.113 (0.005)	***
Friendship skewness	-1.992 (0.092)	***		-1.762 (0.067)	***

*** p < 0.001; ** p < 0.01; * p < 0.05

Table 4.4: Predicted Friendship Nomination Probabilities for Same Ethnic and Same Generation

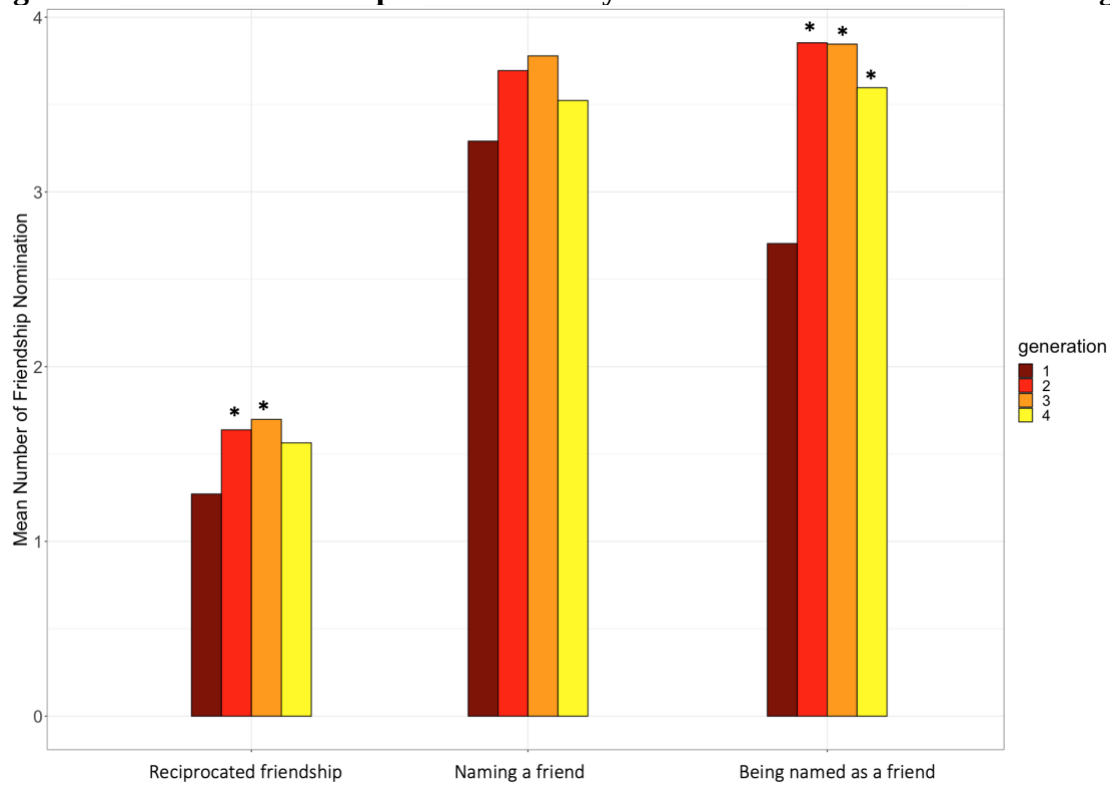
	Midwest		Southwest	
	log odds	predicted prob.	log odds	predicted prob.
same-ethnic friendship				
First gen.	-5.39	0.005	-5.67	0.003
Second gen.	-4.86	0.008	-5.53	0.004
Third gen. plus	-4.92	0.007	-5.67	0.003
Fourth gen. plus	-4.98	0.007	-5.54	0.004
same-generation friendship				
First gen.	-5.61	0.004	-5.65	0.004
Second gen.	-5.33	0.005	-5.90	0.003
Third gen. plus	-5.26	0.005	-5.97	0.003
Fourth gen. plus	-5.46	0.004	-6.01	0.002

Table 4.5: Odds of a Friendship Nomination by Generation Pairing, Results Derived from ERGM model of All Friendship Nominations (Midwest High)

	Status of one being named as friend			
	1st	2nd	3rd	4th-plus
1st	--	1.05	0.91	0.99
2nd	0.81*	1.10	1.12	0.96
3rd	0.49***	1.14	1.26	1.12
4th-plus	0.66***	0.90	1.01	1.02

Note: All odds are compared to first generation naming another first generation as a friend; *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Figure 4.1a: Mean Friendship Nominations by Generational Status at Midwest High



* indicates a statistical difference from first generation based on two-sample t-test

Figure 4.1b: Mean Friendship Nominations by Generational Status at Southwest High

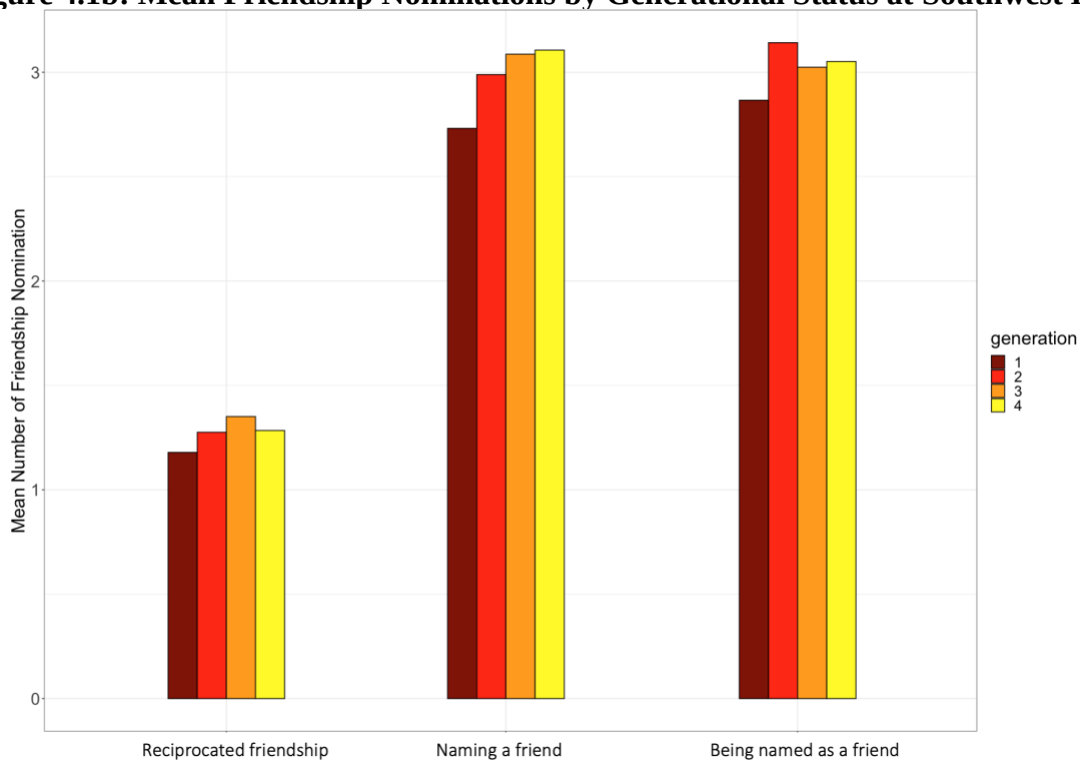


Figure 4.2: Mean Proportion of Reciprocated Friendships that are Same- versus Cross-Ethnic by Immigrant Generation

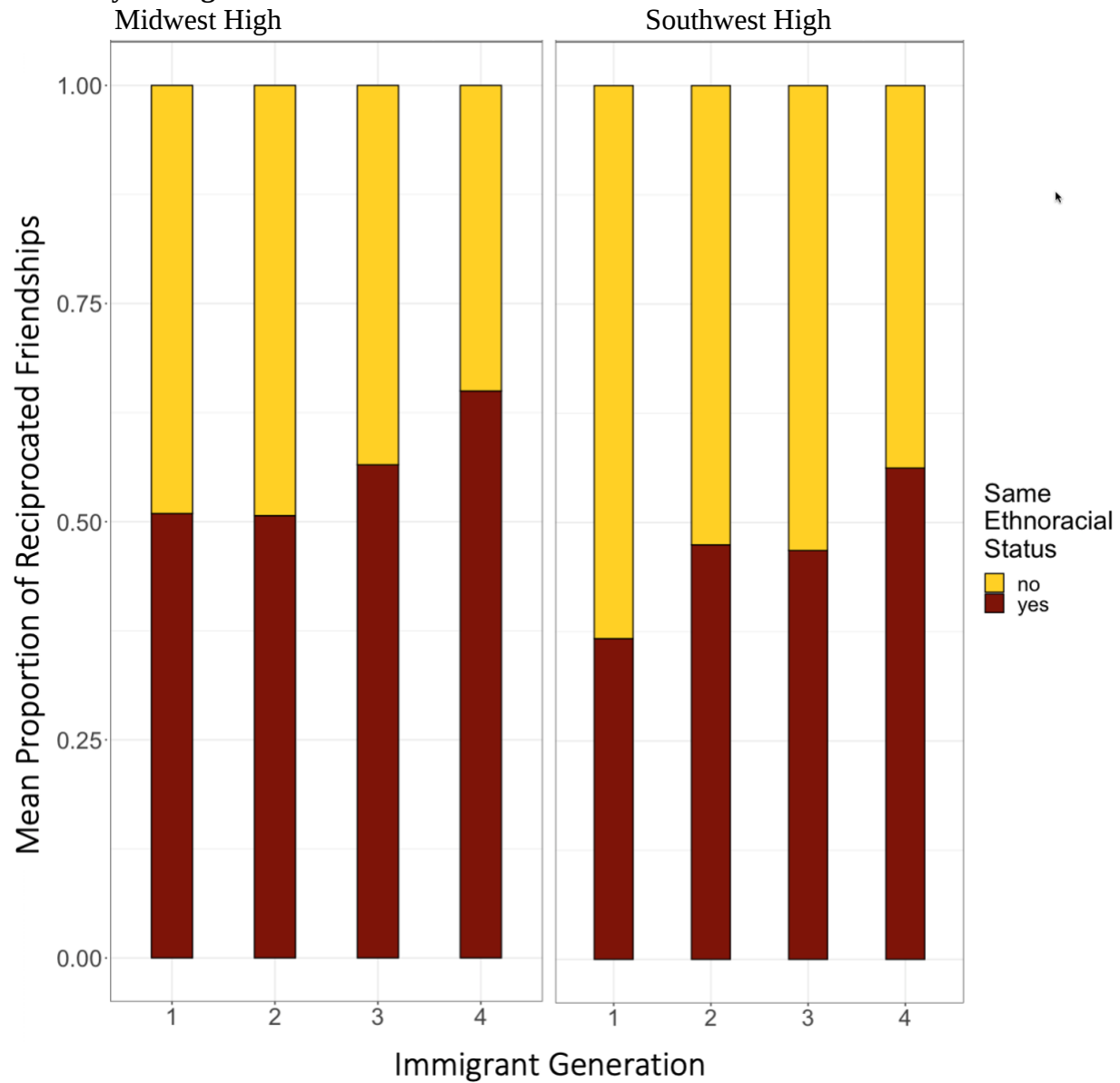


Figure 4.3: Mean Proportion of Reciprocated Friendships that are Same- versus Cross-Generation by Immigrant Generation

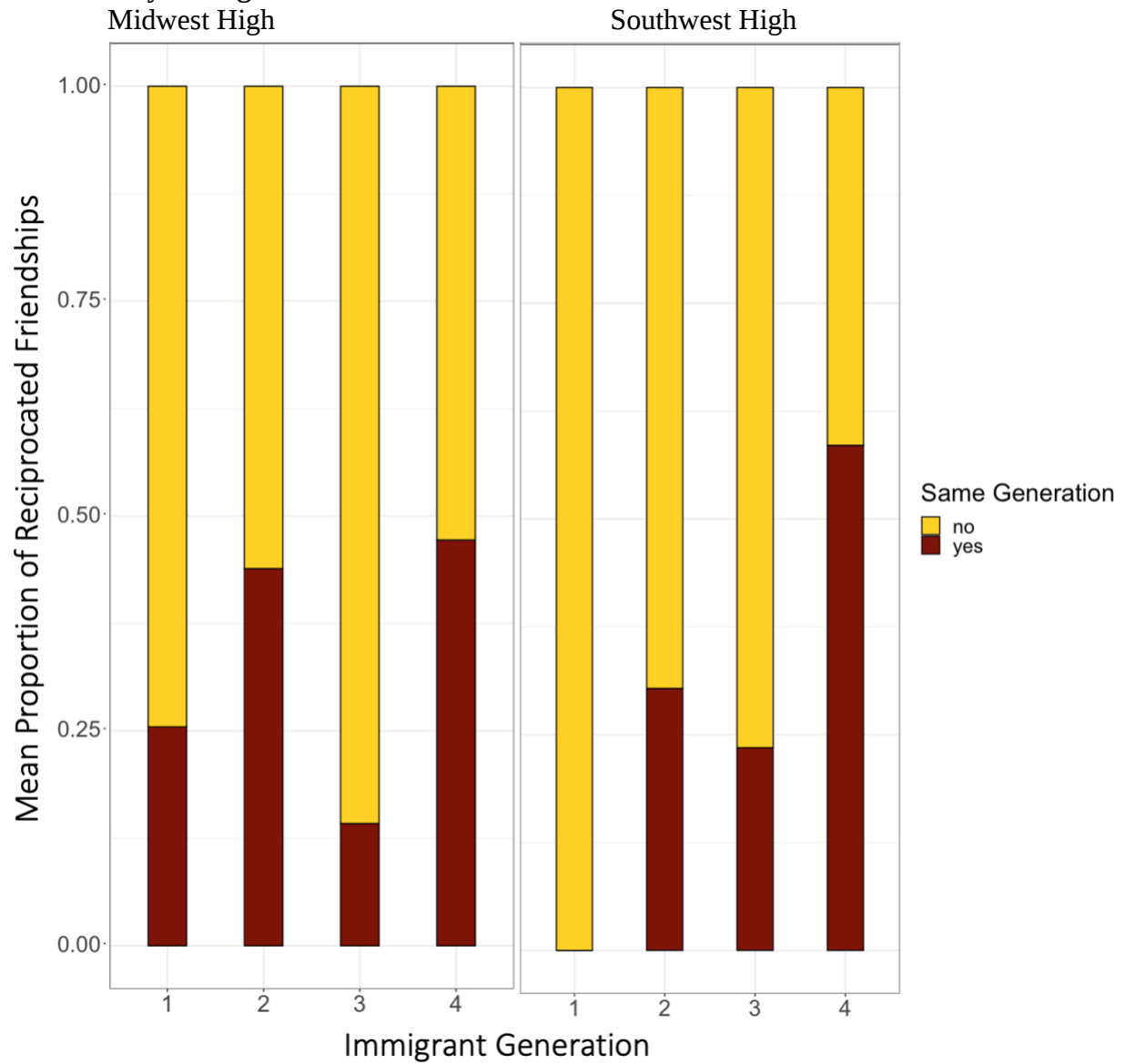


Figure 4.4a: Reciprocated Friendship at Midwest High by Students' Ethnoracial Status and Immigrant Generation

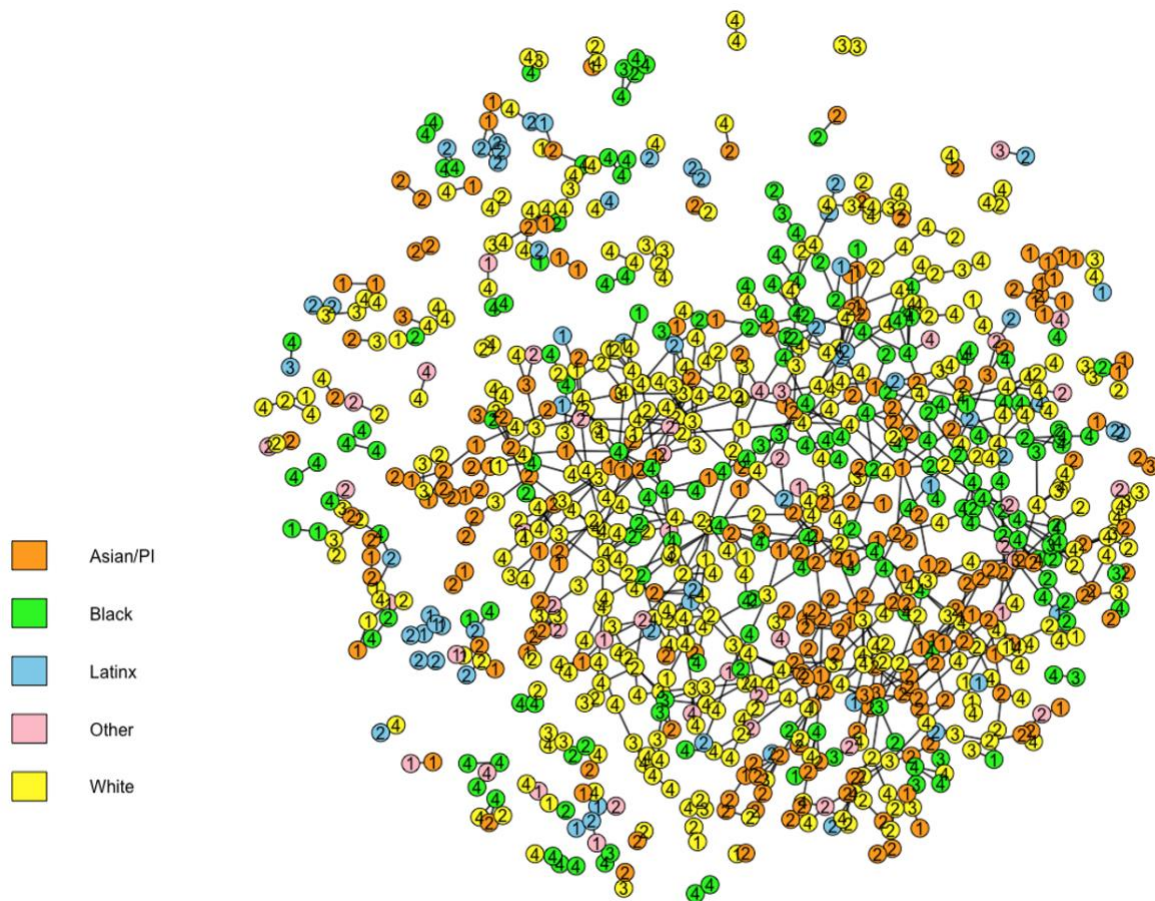
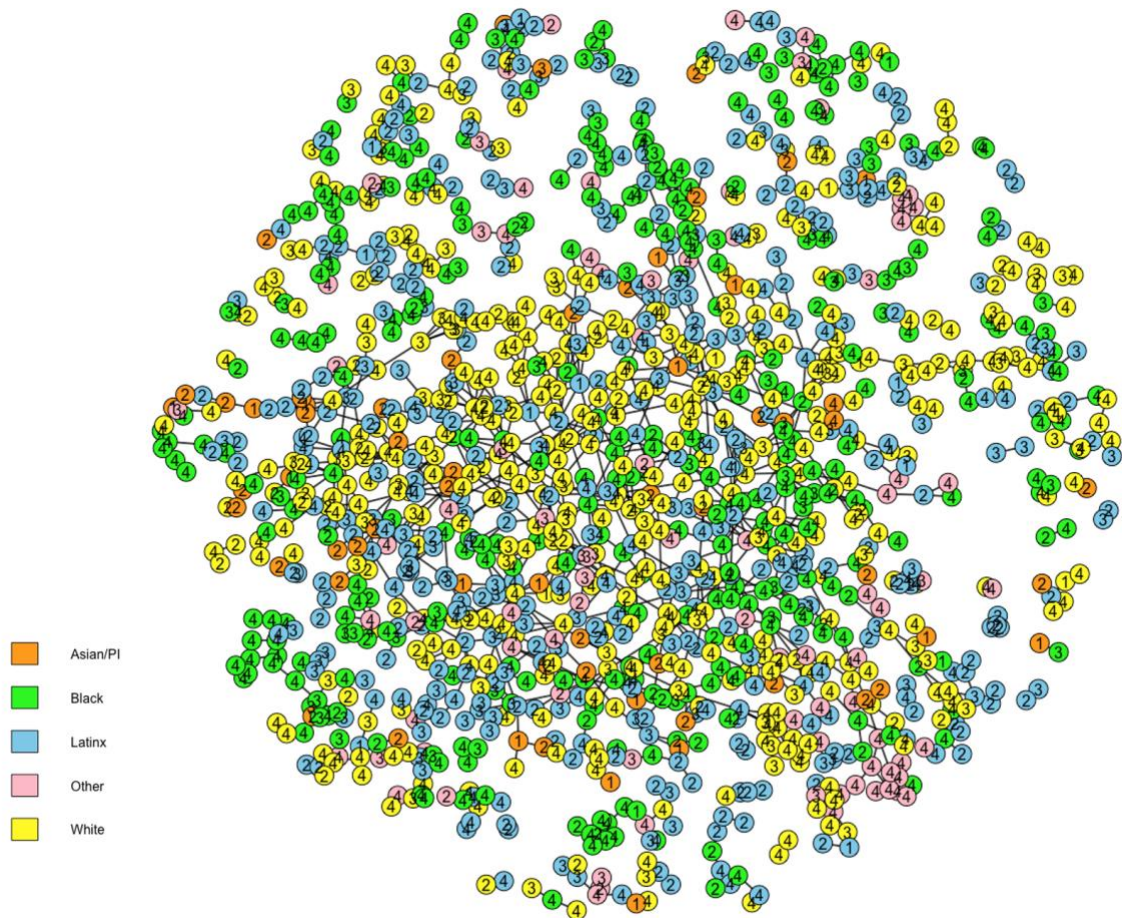


Figure 4.4b: Reciprocated Friendship at Southwest High by Students' Ethnoracial Status and Immigrant Generation



CHAPTER 5

CONCLUSION

The purpose of this dissertation is to investigate the integration and well-being of the U.S. immigrant-origin population, a group that is vastly diverse in background characteristics and life outcomes. Due to different immigration policies and the reaction of the American public to certain groups, newcomers and their children may experience different kinds of reception upon arrival. Coupled with the difficulties that arise as a result of immigration, all of these factors can affect how well immigrants and their descendants integrate and improve their well-being over time in their receiving society.

In the three empirical chapters of this dissertation, I leverage differences between refugees and non-refugee migrants and between those of different immigrant generations to study some of the factors that may affect immigrant integration and well-being. Chapter 2 and 3 explore differences between refugee and non-refugee migrants in education and health. Refugees receive assistance from the government upon arrival, but levels of assistance declined steeply across arrival periods. Fearing that newly arrived refugees would become overly reliant on assistance, the government repeatedly reduced the amount and length of time new arrivals are eligible for assistance (Bruno 2011; GAO 1990). Few research has explored how these changes affected refugees beyond the initial stages of resettlement. The empirical study in Chapter 2 shows that refugee children who arrived right after the establishment of the U.S. refugee resettlement program in 1980, when governmental assistance was strong, experienced a significant boost in their education compared to their non-refugee peers of similar backgrounds. This differential diminishes across arrival periods. While non-refugee children's years of

schooling remain constant across arrival periods, refugee children's education declines and converges with non-refugee children's education. This pattern suggests declines in assistance negatively affected the long-term educational integration of young refugees.

Chapter 3 shifts the comparison between refugees and non-refugees to a different but equally important dimension of integration: health. Two relatively consistent findings within the immigrant health literature are that 1) immigrants generally arrive in the United States with better health than the U.S.-born and 2) this health advantage diminishes over duration of residence (see Markides and Rote 2015 for literature review). Prior research suggests refugees, separate from other immigrant groups, do not experience a health advantage upon arrival (Jasso et al. 2004; Kumar et al. 2021; Reed and Barbosa 2017). And there is little research on how refugee health changes over duration of residence. Findings from Chapter 3 show that refugees surprisingly do experience a health advantage relative to the U.S.-born: refugees were less likely than the U.S.-born to rate their health negatively or to report a work-limiting disability. Still, the health advantage demonstrated by refugees is not as large as that demonstrated by non-refugee immigrants, who also reported better health than the U.S.-born. The study also finds that refugees experienced minimal decline in health across duration of residence while non-refugees' health worsened considerably. The health decline for non-refugee immigrants is partially mediated by healthcare access.

In the last empirical chapter, Chapter 4, I apply social network methods to friendship data collected at two U.S. high schools to explore an important but scarcely researched dimension of immigrant integration. Social integration is considered a key catalyst for other integration dimensions and has important implications for intergroup relations. This study uses friendship likelihood and friendship content to gauge whether social integration is occurring across

immigrant generations in immigrant-diverse schools. Results show that second- and third-generation students were more likely to engage in friendship and were also more open to cross-group friendship than first-generation students. This suggests social integration is indeed occurring across generations. However, the study also finds that fourth-plus-generation students' friendship patterns are similar to those of first-generation students, with both being relatively less socially integrated than the second- and third-generation students. These findings overall suggest that even though social integration may be occurring across immigrant generations for those immigrants and their descendants who arrived after 1965, complete social integration at the societal level may remain out of reach until long-standing, native-born groups also adapt to and become more acceptant of relationships with newer arriving groups.

Contributions

Together, the two empirical studies in Chapter 2 and 3 show how differences in migration status (i.e., refugee versus non-refugee) can meaningfully explain differences in integration outcomes. The findings suggest governmental policies relating to resettlement assistance and public health should be crafted with an eye toward the long-term integration and well-being of refugees and immigrants in general. Chapter 4 shows that beyond policies, intergroup dynamics may also affect immigrants and their descendants' pathway to integration. Overall, the findings from the studies place greater emphasis on the idea that integration is a two-way street that requires a willingness by the receiving society to engage with and assist newcomers.

Limitations and Future Directions

This research is limited in two key aspects. First, due to the lack of data on immigrants' initial migration statuses, I imputed refugee status using statistics published by the U.S. government on the flow of refugees arriving from pairs of origin country and arrival year. I conducted various robustness checks to ascertain that the observed differences in outcomes between respondents are a reflection of status differences. Still, future research on immigrant integration would benefit from directly collecting data on respondents' initial migration statuses and studying refugees simultaneously but separately from other immigrant groups. An equally important issue to address is the shortage of longitudinal data on refugees. Immigration as a process impacts various subsequent major life events and transitions, and integration itself may unfold across the life course and multiple generations. Hence, to understand broadly how immigration and various factors related to immigration affect refugees' (and non-refugees') integration and well-being, it is important to conduct studies that follow individuals and their families across their duration of residence in the United States.

Immigrant integration is a multi-dimensional process that occurs over time. Although integration is the general direction in which post-1965 immigrants and their descendants are experiencing change, this statement is broad and can gloss over important differences within the population. Integration can be facilitated or deterred due to various policies and group dynamics that shape reception contexts, with important implications for individual well-being and critical life outcomes. The United States is becoming more "a nation of immigrants" in the statistical sense, and thus it becomes increasingly important to understand not only how immigration is changing the nation broadly but also how immigration and its various processes are affecting the opportunities and critical life chances of its newer members.

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