IMMIGRATION IN THE GLOBAL ERA: MIGRANTS AND THE PEOPLE AND LAWS AT ORIGIN AND DESTINATION

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IMMIGRATION IN THE GLOBAL ERA: MIGRANTS AND THE PEOPLE AND LAWS AT ORIGIN AND DESTINATION

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EDITORIAL
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Editorial: Immigration in the Global Era: Migrants and the People and Laws at Origin and Destination

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Keywords: migrant selectivity, integration of immigrants and their descendants, impacts of immigration, laws on exit and entry, public attitudes toward migrants in both origin and destination countries

Editorial on the Research Topic

Immigration in the Global Era: Migrants and the People and Laws at Origin and Destination

The world of migration is a vast and diverse landscape. The 17 articles in this collection cover every step in the migration process, from origin to destination and beyond, as migrants in a variety of streams – temporary and permanent; labor, family, and refugee; of diverse countries, backgrounds, and aspirations – find help and hindrance, welcome and opposition from a wide swath of nonmigrants and immigration officials. Scholarly topics include self-selection and government-selection, into legal status and residential location; determinants of prejudice; integration and naturalization; children and subsequent descendants of migrants; impacts of law and contexts of reception. The articles traverse theory and empirics, micro and macro matters, qualitative and quantitative approaches, cross-sectional and longitudinal perspectives, single-country and multi-country settings.

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SELECTIVITY AND LAW, FROM FIRST STEPS TO NATURALIZATION

Soysal and Cebolla-Boado address selectivity in four usually unobserved but here self-described traits – ambition, creativity, independent-mindedness, and risk-taking – among international higher-education students from China in Germany and the United Kingdom, comparing them to nonmigrant higher-education students in China, Germany, and the United Kingdom. Results indicate no systematic differences across these student groups and no gender difference, suggesting global convergence in these traits and a remarkable homogeneity around the world in how university students see themselves.

Jacobs examines how skilled migrants navigate legal migration channels in the United States, based on a sample from India holding H-1B temporary work visas, plus smaller subsamples of unsuccessful H-1B applicants and immigration lawyers. The sample includes both direct recruits newly arriving in the United States and H-1B visaholders transitioning in the United States from a student (F-1) or exchange (J-1) visa. Results document the challenges and uncertainties of the visa process, noting how an earlier transition (e.g., from F-1 to H-1B) increases the likelihood of applying for legal permanent residence (LPR), now with more options beyond employment visas (e.g., via marriage), but also how the mismatch between LPR aspirations and the temporary H-1B visa may lead to emigration.

Spörlein and Kristen assess educational selectivity among labor migrants from 15 countries in Africa, Latin America, Asia, and Europe who moved to Germany, England, Ireland, the Netherlands,

and Spain, together with refugees from Afghanistan, Iraq, and Syria in Germany. Results indicate that there are few selectivity differences between labor and refugee migrants, but these differences vary, with some labor migrant groups scoring the same or lower on selectivity than refugees; moreover, every origin group includes both positively and negatively selected individuals.

Haberfeld et al. assess post-migration selectivity in location choices among refugees who arrived in Sweden from nine countries in Africa, Asia, and Europe during 1990–1993, a period when refugees were assigned an initial location but were subsequently free to move. Analysis of register data over an eight-year period indicates that refugees' educational levels are related to their destination choices, with highly skilled refugees more likely than the less skilled to move to labor markets with more opportunities, and that all relocation choices have positive effects on refugees' income growth.

Jasso develops a framework for analyzing migration restriction regimes, applicable to any migration stream and any country, illustrating it with the United States system for LPR. Restriction may be based on personal criteria and/or numerical ceilings and generates both backlogs and unauthorized migration. The framework can be used to summarize a country's migration law -- rules for admission, periodization of its immigration history, and policy devices for addressing backlogs and unauthorized migration -- as well as to compile stocks and flows of legal temporaries, LPRs, and naturalized.

McAvay and Waldinger analyze naturalization patterns among migrants in France from over 50 countries who are married to a French citizen and thus, under French law, eligible for both standard naturalization and a fast-track naturalization for spouses of French citizens, which has more extensive documentary requirements, especially with respect to demonstrating that the marriage is genuine. Results indicate that while marriage to a French citizen is the single most powerful determinant of naturalization, choice of track is strongly related to the nativity and parentage of the French citizen spouse, with marriage to a French native especially likely to promote marriage-track naturalization, particularly among women.

PREJUDICE AND THE CONTEXTS OF RECEPTION

Bohman et al. explore the effect of political discussions with peers during adolescence on prejudice against immigrants in Sweden, using data on two cohorts followed for a five-year period (ages 13 and 16 at the start of the survey). Results show an association between political discussion and prejudice, its strength increasing as the adolescents grow older. Moreover, the effect of political discussions depends on the level of prejudice among peers; political discussion with low-prejudice peers is associated with lower levels of prejudice, but political discussion with high-prejudice peers is not significantly related to attitudes toward immigrants.

Mitchell examines how differences in social trust, both within and between countries, influence attitudes about immigrants, using the European Social Surveys of 2002–2016 and, for robustness checks, supplementary data from the European Values and World Values Surveys. Results from longitudinal analyses indicate that countries with higher levels of social trust have more favorable attitudes toward immigrants and that changes in trust over time, albeit small, result in comparably large changes in anti-immigrant attitudes, even when controlling for other social factors.

Gorodzeisky and Semyonov analyze opposition to immigration among natives of 20 countries in the 2014 European Social Survey, showing that opposition varies not only across host countries but also across five ethnoreligious migrant groups (of the same or different race/ethnicity as a majority population, plus Jews, Muslims, and Roma). Results indicate hierarchical opposition to the five groups, being most extreme toward Muslims and Roma but relatively minor toward immigrants of the same race-ethnicity or toward Jews, as well as varying sources of opposition to immigration (e.g., threat of competition, fear of crime, racism, intergroup contact).

Evans and Kelley analyze prejudice toward outgroups – using a classic measure of social distance rooted in the work of Bogardus that taps objection to members of specific groups "as neighbors" -- among respondents in 100 countries (using the World Values Surveys, European Values Surveys, and European Quality of Life Surveys). They find that prejudice and social distance against immigrants, other races, Hindus, Jews, Muslims, and Roma tend to decline with level of socioeconomic development of the host country. They also find that a single latent ethnoreligious prejudice generates prejudice against specific outgroups.

Steele and Perkins examine how natives' perceptions and misperceptions about the size of the noncitizen population affect attitudes toward redistribution and social policies among a sample of residents of New York City – one of the most diverse and ethnically heterogeneous cities in the world -- recruited via Amazon Mechanical Turk. Results indicate that about a quarter of New Yorkers overestimated the relative size of the noncitizen population in their neighborhood, and these respondents were among the least supportive of redistribution and other social policies.

LIFE IN THE DESTINATION COUNTRY

Bevelander and Luik assess the employment integration of refugees in Sweden in the first 12 years since arrival, using longitudinal data on three arrival cohorts (1998–2000). Despite differences across the three main refugee groups (from three countries in East Africa, one from Europe, and four from the Middle East), results show similar patterns of employment integration; all refugee groups increase their employment probabilities, but from different starting points and at different speeds, some reaching parity during the study period. In particular, women from Bosnia, Eritrea, and Ethiopia have similar or higher employment probabilities than Sweden-born women after between five and eight years in the country.

Amit and Chachashvili-Bolotin analyze the mismatch between subjective work perception and actual position in the labor market – the discrepancy between actual integration (combining actual job and wage) and subjective integration (combining satisfaction from job and wage) – in Israel among four immigrant groups (from Ethiopia, the Former Soviet Union, and Western countries, plus pre-1989 immigrants) and four native-born groups (second-generation Ashkenazim and Mizrahim, third-generation, and Arabs). A larger fraction of women than of men experienced a positive mismatch, and a smaller fraction of women than of men experienced a negative mismatch; moreover, the largest fractions experiencing a positive mismatch occurred in groups with disadvantaged backgrounds.

Kogan and Shen assess life satisfaction among migrants from/to 30 European countries, using data from the 2008–2016 European Social Surveys. Results indicate that immigrants' assessments of economy, democracy, and quality of public goods (such as health and education systems) in the host country contribute to life satisfaction, with satisfaction with the economy being the strongest correlate of life satisfaction, particularly among migrants from Turkey and countries of Eastern and Southern Europe.

Wilkes and Wu study the complex relations between three kinds of perceived discrimination (based on race, ethnicity, or anything including race/ethnicity) and three types of trust (generalized, specific, political) between five groups in Canada (Canada-born whites, Canada-born people of color, Indigenous people, foreign-born whites, foreign-born people of color). They find that perceived discrimination is more relevant to general and specific trust than to political trust and that perceived discrimination explains more of the trust gap between foreign-born people of color and the native born than between foreign-born whites and the native born.

Lubbers and Gijsberts use a four-wave panel to assess change in self-rated health among immigrants from Bulgaria, Poland, Spain, and Turkey who arrived in the Netherlands in 2012 and 2013. Results indicate that lack of Dutch friends, perceived discrimination, cultural distance, and homesickness strongly affect self-rated health; moreover, self-rated health declined over time, although slightly, mostly from "very good" to "good," and possibly linked to the new immigrants becoming parents in the early years after migration.

Sanderson and Kentor assess the relation between migration and development by analyzing migration (im)balances and wage differentials within 22 pairs of countries in the Americas at five decennial points between 1970 and 2010. They find a positive feedback between international migration and cross-national inequalities; wage differentials between countries have a strong effect on migration, especially in contiguous countries, while migration has a smaller effect on wage differentials.

GOING FORWARD

The 17 articles open new doors for further inquiry, as migration continues and researchers study its impacts on the well-being of migrants and others at origin and destination.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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ORIGINAL RESEARCH
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Satisfied With Less? Mismatch Between Subjective and Objective Position of Immigrants and Native-Born Men and Women in the Labor Market

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The current study introduces a new mismatch concept in labor studies, the mismatch between subjective work perceptions and actual labor market position, and examines it from the perspectives of gender, ethnic and migration. This mismatch, positive or negative, was examined among men and women from different ethnic groups in Israel, both immigrants and native-born. The analyses were conducted on 9,923 employees using the Israeli CBS Social Surveys (2013–2015). The results reveal that the gender effect is more prominent than the ethnicity and migration effect. In general, women were more satisfied with their actual position in the labor market (positive subjective mismatch) than men, and men were less satisfied with their actual position in the labor market (negative subjective mismatch) than women. A positive subjective mismatch was also found among men from disadvantaged ethnic and immigrant groups. The multivariate analyses revealed that after controlling for socio-economic variables, ethnic differences declined among both men and women. Possible explanations are discussed, primarily based on the notion of relative well-being in respect to workers' expectations.

Keywords: immigrant's labor market integration, subjective work perceptions, gender, ethnicity, mismatch in the labor market

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INTRODUCTION

The labor market serves as a central arena of an immigrant's integration. Migration researchers have implied that newly arrived immigrants often experience a downward mobility in their economic status and labor market position, but for many of them, position in the labor market significantly improves over time (Chiswick, 1982; Borjas, 1990; Kogan, 2003). Studies documenting the integration of immigrants in the labor market focus mainly on objective parameters such as earnings and occupational attainment (Chiswick, 1982; Borjas, 1990; Chiswick and Miller, 2002; Cohen and Kogan, 2007; Gorodzeisky and Semyonov, 2011). These studies highlight the importance of comparing the immigrant's economic position to that of other groups, and point to variation in the economic position of different immigrant groups. However, these prominent migration studies ignore the subjective parameters associated with the immigrant's integration into the labor market, and disregard questions related to the immigrants' satisfaction with their position in the labor market.

In recent years, subjective well-being parameters such as life satisfaction and happiness are gaining more attention from migration scholars (McMichael and Manderson, 2004; Amit, 2010, 2012; Bartram, 2011), and some studies specifically relate to immigrants' satisfaction from their position in the labor market (Jong et al., 2002; Amit and Riss, 2014). Yet, there has been no comprehensive study that analyzes and compares both subjective and objective parameters of the labor market integration of immigrants. This comparison invites questions related to the match or mismatch between these parameters, and asks whether there are differences based on gender, ethnicity and migration. In other words, are women more (or less) satisfied with their actual position in the labor market than men? Are certain ethnic and immigrant groups more (or less) satisfied with their actual position in the labor market? And which variables predict this mismatch? The present study addressed these questions by introducing a new concept of labor market mismatch. We examine the mismatch between both types of parameters among men and women, as well as among different groups of immigrants and native-born Israelis.

This paper contributes to the labor market literature on the integration of immigrants and ethnic minorities, and to the literature on gender differences in the labor market. The contribution is three-fold. First, we introduce a new concept that enables analyzing simultaneously both objective and subjective labor market parameters. The current literature on objective and subjective labor market integration has developed in parallel but hardly any cross-fertilization has occurred. Our new mismatch concept creates synergy between these two strands of research. Second, we implement the mismatch concept on native-born, immigrants and ethnic minorities of both genders. This enhances our understanding of the labor market integration of groups holding different positions in the labor market. Third, we add to the empirical knowledge on immigration, ethnicity and gender in the Israeli context. To date, most of the knowledge on ethnic differences in Israel is based on studies targeting selected groups of immigrants and ethnic minorities, many of them using pan-ethnic classifications. Our data set, merged for the purpose of this study by the Central Bureau of Statistics (CBS), enables us to examine a detailed and representative sample of the different groups comprising the Israeli population, both immigrants and native-born.

We begin this introduction by presenting the Israeli case, after which we provide the theoretical background related to labor market integration of different groups. Following this we present our new mismatch concept and our research hypotheses.

The Israeli Case

Israel presents an interesting case study of a multi-ethnic society. Out of Israel's current population of 8.8 million, about 80 percent are of Jewish ancestry and 20 percent are Arabs (CBS, 2007). The Jewish population is ethnically diverse and includes immigrants from various origin countries (about 40 percent are foreign-born), second-generation Israeli-born from Asian-African origin (Mizrahim) and European-American origin (Ashkenazim), and Israeli-born to Israeli-born parents (third or more generation). In the present study, we examine the labor market integration of the main groups comprising the Israeli population: four immigrant groups (Former Soviet Union immigrants, Ethiopian immigrants, Western immigrants, and veteran immigrants who immigrated before 1989) and four Israeli-born groups (second-generation Mizrahim, second-generation Ashkenazim, third-generation Israeli-born, and Arabs). Each group is described below.

The Former Soviet Union (FSU) immigrants, who arrived in Israel over the past two decades, comprise the largest immigrant group. More than one million immigrants came to Israel after the collapse of the Soviet Union in 1989, mainly due to economic and political uncertainty in their countries of origin (Lissitsa et al., 2002; Ben-Rafael et al., 2006; Chachashvili-Bolotin, 2007; Remennick, 2013). Studies on this population emphasize the high levels of human capital with which these immigrants arrived in Israel. These studies have documented impressive employment levels for these immigrants, but partly at the cost of occupational downgrading compared with the occupations they held in the FSU (Raijman and Semyonov, 1997; Gorodzeisky and Semyonov, 2011). Evidence from studies examining social and subjective parameters indicates that FSU immigrants place great emphasis on their Russian culture and identity (Lissitsa et al., 2002; Ben-Rafael et al., 2006; Remennick, 2013) and are less satisfied with life in Israel compared to other recent immigrant groups (Amit, 2010)[1].

Ethiopian immigrants arrived in Israel in two main waves during the 1980s and 1990s. Today, the number of Ethiopians in Israel, both immigrants and Israeli-born, stands at about 140,000 (CBS, 2007). Unlike other immigrant communities in Israel, the Ethiopian community suffered from meager human capital: many of the arriving immigrants were uneducated and their familiarity with educational and employment settings in modern society was very limited (Shabtay, 2001). These conditions, combined with claims of race discrimination, delayed their labor market integration. Studies indicate that the Ethiopians are the least integrated of all of Israel's immigrant groups in education and economic position, yet their subjective well-being is relatively high compared to other immigrant groups (Semyonov et al., 2007). In these studies, as in the current study, first- and second-generation Ethiopian immigrants are addressed as one ethnic group.

The Western segment of immigrants includes those from Western Europe and the Americas (primarily France, the United States, and South America) who immigrated to Israel after 1989. The majority of Western immigrants moved to Israel for ideological reasons—Zionism and religion—or because of economic and social insecurity (Amit and Riss, 2007; Chachashvili-Bolotin and Lissitsa, 2016). These immigrants are characterized by high levels of human capital (Amit and Riss, 2007; Gindin et al., 2009). Whereas English-speaking immigrants

[1]In the present study we examine FSU immigrants. Because we focus on workers aged 25-60, and most immigrants from the FSU arrived after 1989, the number of second-generation FSU immigrants is very small in our data set. Thus they are not examined separately and the few individual cases were added to the overall FSU group. It is important to note that the number of second-generation FSU immigrants in the working age population is small as well.

have a significant advantage in the Israeli labor market, the labor market integration of French- and Spanish-speaking immigrants is more challenging and involves transnational employment patterns (Amit and Bar-Lev, 2015). These immigrants also report high levels of subjective well-being, partially explained by their immigration motives and religiosity (Amit, 2010). Immigrants who arrived from other various countries before 1989 can be classified as "veterans" and do not have a specific ethnic or socio-economic profile. Most of them arrived in Israel as children or adolescents (1.5 generation). This group includes Soviet Jewish immigrants who arrived in the 1970s, Moroccan Jews who arrived in the late 1960s, and immigrants from other countries around the globe. We added this group in order to portray a representative sample of the Israeli immigrant population.

When studying the Israeli-born population, it is important to differentiate between Arabs and Jews. By law, Israeli-Arab citizens are entitled to the same civic rights as the Jewish population. But compared to Jews, the Arab minority is disadvantaged in the labor market in terms of occupational status, wage level, and the allocation of public resources (Semyonov and Levin-Epstein, 1987; Yashiv and Kasir, 2013). The labor market participation rates of Israeli-Arabs, and especially of women, are low relative to those of Israel's Jewish population (Yashiv and Kasir, 2013), and although there has been an increase in labor market participation rates, many Arab women are employed in ethnic enclaves within their communities (Khattab, 2002).

A very common classification of the Jewish population is based on continents of origin; those from Asia-Africa are referred to as Mizrahim, while those from Europe-America are referred to as Ashkenazim. Whereas the ethnicity of Israeli-born to Israeli-born parents (third or more generation of immigrants) cannot be detected, allowing this growing group to serve as a baseline category, the ethnicity of the second generation can be measured. The socio-economic gap between Mizrahim and Ashkenazim has been extensively studied over the past few decades (Lewin-Epstein and Semyonov, 1986), and although the educational gaps between the two groups have narrowed, there is evidence for earning gaps between the dominant Ashkenazi group and the Mizrahi group, partially explained by the growing inequality in Israeli society (Cohen and Haberfeld, 2007). A recent study, focusing on the earnings disadvantage of different ethnic groups in Israel, reveals that the earning penalties among second-generation Mizrahi immigrants can be attributed to their ethnicity (Semyonov et al., 2015).

THEORETICAL BACKGROUND

Labor Market Integration—Objective and Subjective Parameters

For many years, researchers have studied the integration of immigrants into the host country from an economic perspective that focuses on labor market performance. The expectation of migrants to succeed in the new labor market is usually a significant factor in their decision to immigrate and in their willingness to pay the social and economic price of leaving their countries of origin (Chiswick, 1982; Borjas, 1990; Gorodzeisky and Semyonov, 2011).Yet, after their arrival, the majority of immigrants face difficulties in the new labor market due to their lack of language proficiency, inadequate skills and qualifications, limited access to information and knowledge, and lack of local social networks. These difficulties diminish over time for many immigrants, and their position in the labor market improves (Chiswick, 1982; Borjas, 1990; Kogan, 2003). According to this literature (based on mainstream theoretical frameworks, notably human capital and status attainment traditions in economics and sociology), successful integration occurs when immigrants reach the same earnings as native-born possessing identical characteristics, and move into more prestigious occupations that better fit their skills and qualifications (Chiswick, 1982; Borjas, 1990; Gorodzeisky and Semyonov, 2011).

Labor market performance and position in the labor market may vary across groups for both immigrant groups and native-born. Hence, studies on immigrants' labor market incorporation documented and compared the labor market position of different ethnic groups (Bloom et al., 1994; Tubergen et al., 2004) and their relative mobility over time (Gorodzeisky and Semyonov, 2011). Differences between immigrant and native-born groups in the labor market may be attributed to their characteristics (socio-demographic, human capital) and to their migration circumstances and motives, as well as to context of reception in the host country (Nee and Sanders, 2001; Kogan, 2003; Portes and Rumbaut, 2006; Cohen and Kogan, 2007). Nee and Sanders (2001) proposed a model according to which the social, financial, and human-cultural capital of immigrant families predict the sorting of immigrants into various labor market trajectories. Their study, conducted in the US on Asian immigrants from different origin countries, shows that the mix of capital immigrants arrive with, and subsequently accumulate, shapes the trajectory of their incorporation into the host society.

Gender is an important demographic factor to be considered when examining labor market integration. For many years, the literature on the economic integration of immigrants in the labor market tended to focus on migrant men, but it is becoming more evident that migrant women play a central role in the global migration movements of workers and in the host country's labor market (Curran et al., 2006; Castles and Miller, 2013). Previous studies pointed to the double disadvantage of migrant women in the host country's labor market as both women and migrants (Raijman and Semyonov, 1997). However, globalization processes have led to the emergence of new employment opportunities and patterns that allow migrant women to be more proactive and improve their position in the labor market (Curran et al., 2006).

The dominant approach in the research reviewed so far has been to evaluate the immigrant's labor market performance by objective extrinsic measures, mainly earnings and occupational attainment, and not by subjective intrinsic measures that are based on the immigrant's perceptions and feelings of satisfaction with their position in the labor market. Our study suggests adding the subjective parameters to the evaluation of the immigrant's

integration in the labor market, and comparing the objective labor market performance to the subjective perception related to it.

Subjective well-being in general, and specifically life satisfaction, is the focus of recent migration studies (Jong et al., 2002; Massey and Akresh, 2006; Amit, 2010; Lissitsa and Chachashvili-Bolotin, 2016a,b). Life satisfaction, a main component of subjective well-being, refers to the cognitive judgment aspect of the concept, and is defined as an overall assessment of an individual's quality of life according to his/her personal judgment and criteria (Shin and Johnson, 1978; Diener, 1984; Diener et al., 1985). Migration studies found that various factors influence an immigrant's life satisfaction, which varies across ethnic and immigrant groups (Phinney et al., 2001; Amit, 2010).

Studies also emphasize that the immigrants' life satisfaction does not necessarily match their objective socioeconomic position in the new country. In a study conducted in Israel on elderly immigrants, it was found that immigrants from certain ethic groups characterized by high socio-economic background were not necessarily more satisfied with their lives compared to immigrants from different ethnic groups characterized by lower socio-economic background (Amit and Litwin, 2010). Studies on Mexican immigrants in the US found that subjective well-being played a central role for these immigrants, and they were willing to compromise for less rewarding jobs (Shinnar, 2007).

Notwithstanding, individuals may also express satisfaction with specific aspects of their lives (Solberg et al., 2002), and specifically, satisfaction from their working lives. Job satisfaction, a well-researched concept in organizational studies, has been defined as a global construct regarding general feelings about the job (Lock, 1976). More recent studies examine job-related well-being as a central part of the workers subjective well-being, and refer to how the workers feel toward their jobs (Horn et al., 2004; Warr, 2013). These subjective work perceptions are receiving less attention from migration scholars (Ea et al., 2008), although there is evidence that these perceptions are linked to the immigrant's acculturation process (Au et al., 1998). In the current study we focus on the individual's satisfaction from work-related parameters. Few studies attempted to examine immigrants' work perceptions, and imply that these perceptions are not necessarily in accordance with their actual labor market position (Valdivia and Dannerbeck, 2009; Valdivia and Flores, 2012). The mismatch between subjective work perceptions and actual labor market position is the focus of our study.

Mismatch Between the Subjective and Actual Positions in the Labor Market

The mismatch concept in labor market studies is traditionally related to the imperfect matching between education and jobs, and presents forms of over-education and under-education (Chevalier, 2003; Aleksynska and Tritah, 2013; McGowan and Andrews, 2015). The literature offers multiple theoretical explanations for this mismatch, based on imperfect information and imperfect screening of workers' qualifications by employers (Sicherman, 1991; Groot and Van Den Brink, 2000; Leuven and Oosterbeek, 2011). Migration scholars examine this education-occupation mismatch among immigrants in comparison to native-born, and point to the more intense mismatch among immigrants (Chiswick and Miller, 2009, 2012; Aleksynska and Tritah, 2013). In these migration studies, additional explanations for the mismatch are provided, based on supply and demand processes and determinants related to the home country of immigrants and to the destination country. The measure of the education-occupation mismatch is based on a classification of three components: over-education, match, and under-education (Chiswick and Miller, 2012; Aleksynska and Tritah, 2013).

Our study introduces a new and different concept of mismatch in the labor market: the imperfect matching between the actual position in the labor market and the subjective perceptions related to it. Following the classification of the education-occupation mismatch by migration scholars (Chiswick and Miller, 2012; Aleksynska and Tritah, 2013), we suggest two forms of the perceptional mismatch: *positive and negative subjective mismatch*. ***Positive subjective mismatch*** occurs when an individual's perceptions are higher than their actual position in the labor market, and ***negative subjective mismatch*** occurs when an individual's perceptions are lower than their actual position in the labor market. Our study examines whether there are perceptual differences based on gender, ethnicity and migration, and detects variables predicting positive and negative subjective mismatch.

Valdivia and Dannerbeck (2009) conducted a case study among Mexican immigrant women in the US and found that although their wages had not increased, they perceived that their position in the labor market was improving. In our terms, their study presents a positive subjective mismatch for women who are from a low-class ethnic group. The women in this study were satisfied simply by being employed, and compared their position to their prior living conditions and to the possibility of unemployment (Valdivia and Dannerbeck, 2009). Another study, conducted on a British survey, found that although women's jobs were inferior to men's in objective scales, women reported higher levels of job satisfaction than did men (Clark, 1997).

These studies present a gender paradox related to job satisfaction that is called "the paradox of the contented female worker." According to this paradox, women tend to be more satisfied with their job and with their wage than men, although their position in the workplace is less favorable (Clark, 1997; Sousa-Poza and Sousa-Poza, 2000, 2007; Davison, 2014). Since satisfaction is partly determined by the discrepancy between what one wants and what one gets, this gender gap in favor of women has been attributed in many studies to psychological explanations. Studies point to women's lower job expectations (Mora and Ferrer-i-Carbonell, 2009) and to gender differences in perceptions of fair wages (Mueller and Kim, 2008). As Clark emphasized, "women's higher job satisfaction does not reflect that their jobs are unobservable better than men's, but rather that, perhaps because their jobs have been so much worse in the past, they have lower expectations" (Clark, 1997, p. 365). Clark's 1997 explanation relies on the

concept of relative well-being, especially with regards to workers' expectations. According to this explanation, an identical man and woman with the same jobs and expectations would indeed report identical job satisfaction. but since women's expectations are relatively lower than men's, the gap appears (Sousa-Poza and Sousa-Poza, 2007; Clark et al., 2009). This gender paradox is dynamic and may disappear for women with higher job expectations. Indeed, it was found that the gender satisfaction differential was less apparent for young, higher-educated, and professional women (Clark, 1997; Mueller and Kim, 2008).

A recent study conducted in Germany suggests a structural explanation for the paradox (Valet, 2018), that may be congruent to the concept of relative well-being. Valet (2018) found that in general, men and women do not differ in their perceptions of justice related to their wages. The study revealed that the gender paradox was only detectable in occupations with a considerable number of female referents, and not in male-dominated occupations. Thus, their study concluded that gender differences in justice perceptions can be explained by structural explanations related to certain occupations. Our study compares the subjective perceptions related to the position in the work place (satisfaction with the job and wage) for both men and women in various occupations, with their actual position in the work place (wage and occupation). We adopt the relative well-being notion related to workers' expectations, as this explanation is more dynamic and may also be in congruence with the structural explanation. Women working in female-dominated occupations may express lower job expectations than women working in male-dominated occupations due to the different reference group of workers. Thus, the structural explanation may involve a subjective evaluation related to expectations.

The gap between the objective performance in the labor market and the subjective perceptions of it has never been examined previously among immigrants or ethnic minorities. Therefore, we have no theoretical basis on which we may rely. But we assume that the paradox presented above may also be apparent for the less advantaged groups in the labor market. Previous studies in the US found that students from less advantaged ethnic minorities perceived significantly greater educational and career-related barriers than their European-American counterparts, and thus had lower work expectations and lower sense of self-efficacy (McWhirter, 1997; Luzzo and McWhirter, 2001). As was found for women, as a result of these lower expectations, disadvantaged ethnic groups may express more positive perceptions regarding their position in the labor market. Thus, we can pose the following three research questions: (1) Is a positive subjective mismatch more typical for women than for men, whereas a negative subjective mismatch is more typical for men than women? (2) Is a positive subjective mismatch more apparent among disadvantaged ethnic groups (including immigrant groups), whereas a negative subjective mismatch is apparent more among advantaged ethnic groups? (3) Which variables affect positive and negative subjective mismatch?

Based on the above theoretical background and the description of Israeli society, we formulated the following hypotheses:

Research Hypotheses

Gender Differences

H1a: A positive subjective mismatch is more typical for women than for men.

H1b: A negative subjective mismatch is more typical for men than for women.

Ethnic Differences

Differences between ethnic and immigrant groups:

H2a: A positive subjective mismatch is more apparent among disadvantaged ethnic and immigrant groups (second-generation Mizrahim, Ethiopians immigrants, and Arabs) compared to more advantage ethnic groups (second-generation Ashkenazim and third- generation Israeli-born).

H2b: A negative subjective mismatch is more apparent among more advantaged ethnic groups (second-generation Ashkenazim and third-generation Israeli-born) compared to disadvantaged ethnic and immigrant groups (second-generation Mizrahim, Ethiopians immigrants, and Arabs).

We found it challenging to determine the mismatch pattern for FSU immigrants, as generally these immigrants can be characterized as highly educated, but many are not employed according to their qualifications and express relatively high dissatisfaction from their life in Israel (Amit, 2010; Gorodzeisky and Semyonov, 2011).

METHODS

Source of Data

Israel's CBS conducts an annual cross-sectional social survey (known as the "CBS social survey"). The data used in this study were collected from the CBS social surveys from 2013, 2014, and 2015. The social survey questionnaire was composed of a core questionnaire of about 100 items covering the main areas of life, such as socio-demographic characteristics of household members, economic situation, and employment; and skills such as education level. The interviews were conducted in Hebrew, Russian, and Arabic, according to the language used in the household.

Population and Sampling Method

The population of the CBS social survey includes permanent residents of Israel aged 20 and older, including those residing in immigrant absorption centers, student dormitories, independent living projects for the elderly, and other non-custodial institutions. To be included in the survey population, new immigrants must have resided in Israel for at least 6 months.

The CBS social survey sample includes about 7,500 persons each year, representing about 4.5 million people in the 20 and over age bracket. The response rate was around 80%. Groups were defined based on three combined demographic variables: population group (Israeli-born Jews, immigrants, and Arabs), age, and gender. The size of each design group was calculated to be proportional to its size in the population. The social

TABLE 1A | Socio-demographic characteristics of the sample—Women.

		FSU Imm.	Ethiop. Imm.	Western Imm.	Veteran Imm.	Sec. Miz. Imm.	Sec. Ashk. Imm.	Third generation	Arabs	Total
N		783	83	85	305	1,171	589	1,094	549	4,659
Ethnicity		16.8%	1.8%	1.8%	6.5%	25.1%	12.6%	23.5%	11.8%	100%
Age	Mean	41.78	36.34	38.00	49.15	43.07	42.09	35.45	37.97	40.52
	SD	(9.71)	(7.52)	(9.38)	(8.00)	(9.29)	(9.42)	(8.08)	(8.92)	(9.72)
Marital status		66%	70%	66%	74%	75%	71%	68%	77%	71%
Number of children	Mean	1.66	2.45	2.65	2.88	2.58	2.34	1.91	2.44	2.24
	SD	(1.21)	(2.27)	(2.30)	(1.79)	(1.78)	(1.81)	(1.93)	(1.89)	(1.81)
Area of residence		63%	69%	72%	68%	68%	79%	78%	39%	67%
Religiosity	Mean	1.41	2.66	2.42	1.94	2.17	1.70	1.96	2.40	1.97
	SD	(0.67)	(0.57)	(1.08)	(0.94)	(0.92)	(1.01)	(1.09)	(0.82)	(0.99)
Academic degree		49%	30%	54%	49%	35%	61%	57%	43%	48%
Full time employment		78%	80%	62%	71%	73%	75%	69%	66%	72%
PTM		31%	23%	47%	49%	36%	57%	55%	41%	44%
Income	Mean	7112.07	5165.66	7252.94	9372.95	7928.91	9796.26	8119.52	5513.21	7820.78
	SD	(4753.90)	(3408.94)	(4780.68)	(5864.99)	(4933.26)	(5982.00)	(5322.67)	(3750.36)	(5206.46)

Imm., immigrants; Sec., second; Miz., Mizrahim; Ashk., Ashkenazim.

survey samples are based on random selection and the sampling method enables generalization of the results to the entire Israeli population[2]

The total sample for the 2013, 2014, and 2015 surveys included about 21,000 respondents. From this sample we selected only employees aged 25–60 years old. Our final sample included 9,923 respondents: 1,600 Arabs and 8,323 Jews classified into seven groups (three Israeli-born groups and four immigrant groups). The final sample is presented separately by gender in **Tables 1A**,**B**.

Variables

Dependent Variable

To measure the mismatch between the subjective integration in the labor market and the actual position in it (subjective mismatch), we first calculated subjective and actual integration indices in the labor market.

The *subjective integration index* was measured by the mean of two items: (a) Are you satisfied with the income from your work? and (b) Are you satisfied with your job at your current (main) workplace? The scale of these two items was "1"—not satisfied at all, "2"—not very satisfied, "3"—satisfied, "4"—very satisfied. The correlation between these two variables was significant ($r = 0.428$; $p < 0.00$). The final variable was transformed into Z-score.

The *actual integration index* was measured as a mean of two variables: income and PTM (professional, technical, and managerial) occupation[3]. Income was measured by the question: What was your gross salary last month, before deductions, from all places of work? This variable was measured by 10 categories and was transformed into a continuous variable using the midpoint of each group. This variable was transformed into the Z-score. PTM occupation was measured as a dichotomous variable coded "1," and "0" denoted other occupations. The correlation between these two variables was significant ($r = 0.396$; $p < 0.00$). The final variable was standardized. The correlation between subjective and actual integration indices was significant ($r = 0.433$; $p < 0.00$).

Our dependent variable, **subjective mismatch**, consists of three categories: positive subjective mismatch, matched, and negative subjective mismatch. If the respondent's *subjective integration* was at least half standard deviation above his *actual integration* it was defined as ***positive subjective mismatch***, whereas if respondent's *subjective integration* was at least half standard deviation below his *actual integration* it was defined as ***negative subjective mismatch*** in the labor market. All other options were defined as ***matched***.

Independent Variables

Gender was coded "1" for men and '0' for women.

Ethnicity combined four variables: population group (Jews or Arabs), country of birth, country of father's birth, and year of immigration. As a result, ethnicity included the following eight categories: (1) immigrants from the Former Soviet Union who arrived after 1989; (2) immigrants from Western countries

[2]When using official CBS data (in our case the CBS Social Survey), an ethics approval is not required by our academic institution's guidelines and national regulations. A written informed consent from the participants is also not needed when official national data is used:
http://www.cbs.gov.il/www/publications09/about/aboutcbs_e.htm

[3]This index is based on the measurement of labor market integration used in the Ruppin Index (Semyonov et al., 2007).

TABLE 1B | Socio-demographic characteristics of the sample—Men.

		FSU Imm.	Ethiop. Imm.	Western Imm.	Veteran Imm.	Sec. Miz. Imm.	Sec. Ashk. Imm.	Third generation	Arabs	Total
N		727	75	102	275	1,247	618	1,169	1,051	5,264
Ethnicity		13.8%	1.4%	1.9%	5.2%	23.7%	11.7%	22.2%	20.0%	100%
Age	Mean	40.85	36.40	39.99	48.75	42.56	41.84	35.80	38.47	40.11
	SD	(9.94)	(8.74)	(9.86)	(8.35)	(8.77)	(9.89)	(7.96)	(9.15)	(9.55)
Marital status		67%	55%	68%	83%	78%	72%	66%	81%	73%
Number of children	Mean	1.41	2.15	2.59	3.05	2.42	2.26	1.68	2.66	2.18
	SD	(1.17	(2.41)	(2.58)	(1.98)	(1.76)	(2.03)	(1.83)	(2.22)	(1.95)
Area of residence		62%	76%	73%	66%	67%	77%	77%	40%	65%
Religiosity	Mean	1.34	2.51	2.49	2.04	2.10	1.62	1.79	2.18	1.91
	SD	(0.63	(0.69	(1.06	(1.03	(0.92	(0.99)	(1.01)	(0.87	(0.96)
Academic degree		42%	4%	51%	37%	28%	52%	44%	19%	35%
Full time employment		90%	93%	76%	85%	86%	87%	82%	87%	86%
PTM		31%	8%	54%	46%	38%	56%	53%	18%	39%
Income	Mean	10366.92	6646.67	10482.84	13113.64	11819.57	13738.27	11676.65	7712.18	10960.39
	SD	(5779.20	(3119.55	(7224.33)	(6855.66)	(6181.24)	(6969.14)	(6691.39)	(4538.48)	(6390.66)

Imm., immigrants; Sec., second; Miz., Mizrahim; Ashk., Ashkenazim.

who arrived after 1989; (3) veteran immigrants who arrived in Israel before 1989; (4) first- and second-generation immigrants from Ethiopia; (5) Israeli-born who were born to fathers who immigrated to Israel from America or Europe, Ashkenazim; (6) Israeli-born who were born to fathers who immigrated to Israel from Asia or Africa, Mizrahim (excluding Ethiopia); (7) third-generation, those born in Israel whose parents were born in Israel (served as the comparison group in the multivariate analyses); (8) Arabs–Israeli-born Arabs.

Control Variables

Age was measured in 5-year categories. This variable was transformed into a continuous variable using the midpoint of each group. We also added *age-squared* to the models to examine non-linear relationships between age and the dependent variable, forming the subjective mismatch.

Marital status was measured as a dichotomous variable: "1"—married; "0"—other marital status.

Number of children was measured as a continuous variable.

Religiosity was measured on a scale of 1–4: "1"—not religious/secular; "2"—traditional; "3"—religious; "4"—very religious.

Area of residence was coded "1" for center residents (Haifa, Jerusalem, Tel Aviv, and the central region) and "0" for periphery residents (North, South, Judea and Samaria).

Education was measured by the highest diploma received by the respondent. This variable was transformed into a dichotomous variable: "1"—academic tertiary education and "0"—other education.

RESULTS

In this section we offer a descriptive analysis of our findings. Then, to obtain a deeper understanding of the descriptive results, we examine the multinomial logistic regression for the subjective mismatch in the labor market.

Descriptive Analysis

We first present the descriptive characteristics of the different ethnic groups in the study, separately for women (**Table 1A**) and men (**Table 1B**). In general, women are more educated than men: about 48% of women hold an academic degree compared to about 35% of men. The most educated groups, in terms of possessing an academic degree and holding more prestigious occupations (PTM), among both genders, were second-generation Ashkenazim, third-generation Israelis, and Western immigrants. The least educated groups holding the least prestigious occupations were Ethiopian immigrants, both men and women, and Arab men. The second-generation Mizrahim group cannot be classified as disadvantaged in terms of income compared to the average of the total sample. In general, women received significantly lower income than men. Among both genders, the second-generation Ashkenazim group was the highest paid group, whereas the lowest earning group was the Ethiopian immigrants.

Table 2 presents the descriptive statistics of the subjective and actual integration indices among different ethnic groups, separately by gender. As can be seen, among the total sample, gender differences in the subjective integration index were insignificant. However, among three ethnic groups (Arabs, third-generation Israelis, and Ethiopian immigrants) a significant gender difference in the subjective integration index was found. In contrast, the gender difference in the actual integration index was significant both in the total sample and in almost all ethnic groups. Only among two ethnic groups (Arabs and Ethiopian immigrants) were the gender differences insignificant.

Figures 1, **2** present the percent of respondents for whom positive and negative subjective mismatches were detected

TABLE 2 | Descriptive statistics of subjective and actual integration in the labor market by ethnicity and gender.

		Subjective integration index		*T*-value	Actual integration index		*T*-value
		Women	Men		Women	Men	
FSU immigrants	Mean	−0.28	−0.24	−0.98	−0.30	−0.02	−6.67**
	SD	(0.82)	(0.85)		(0.75)	(0.83)	
Ethiopian immigrants	Mean	−0.19	−0.48	2.19**	−0.54	−0.57	0.35
	SD	(0.81)	(0.84)		(0.60)	(0.46)	
Western immigrants	Mean	0.06	0.00	0.48	−0.12	0.22	−2.79**
	SD	(0.81)	(0.85)		(0.73)	(0.89)	
Veteran immigrants	Mean	−0.01	0.01	−0.23	0.08	0.35	−3.71**
	SD	(0.75)	(0.93)		(0.87)	(0.91)	
Second generation Mizrahim	Mean	0.06	0.12	−1.67	−0.17	0.16	−10.35**
	SD	(0.81)	(0.81)		(0.75)	(0.83)	
Second generation Ashkenazim	Mean	0.15	0.20	−1.16	0.20	0.51	−6.46**
	SD	(0.78)	(0.79)		(0.82)	(0.89)	
Third generation	Mean	0.04	0.15	−3.38**	0.04	0.30	−7.76**
	SD	(0.78)	(0.78)		(0.76)	(0.88)	
Arabs	Mean	−0.01	−0.25	4.86**	−0.32	−0.38	1.64
	SD	(0.92)	(0.97)		(0.71)	(0.64)	
Total	Mean	−0.01	0.00	−0.017	−0.10	0.10	−12.34**
	SD	(0.82)	(0.87)		(0.78)	(0.87)	

*Significant at $p \leq 0.05$; **$p \leq 0.01$.

(respectively). As can be seen, there are gender differences in both mismatches: among women, a positive subjective mismatch of about 39% was detected compared to 31% among men ($\chi^2 = 66.55$, $p \leq 0.01$), and among women a negative subjective mismatch of 30% was detected compared to 36% among men ($\chi^2 = 39.04$, $p \leq 0.01$). Moreover, significant gender differences were found for all ethnic groups (except for Ethiopian immigrants in both mismatches and among Arabs for negative mismatch). In other words, women were characterized by the positive subjective mismatch, whereas men were characterized by the negative.

Regarding ethnic differences in the positive subjective mismatch, the results show that among both genders, the highest percent of respondents for whom a positive subjective mismatch was detected occurred in the two groups with the lowest socio-economic background: Ethiopian immigrants (48% for women and 40% for men) and Arabs (49% for women and 41% for men). These ethnic differences in the positive subjective mismatch were found significant ($\chi^2 = 55.72$, $p \leq 0.00$ among women; $\chi^2 = 111.96$, $p \leq 0.00$ among men). Concerning the ethnic differences in the negative subjective mismatch, results show that among both genders, the highest percent of respondents for whom a negative subjective mismatch was detected was among the more settled ethnic groups: second-generation Ashkenazim (36% for women and 47% for men), veteran immigrants (36% for women and 47% for men) and third-generation Israelis (35% for women only). These ethnic differences in the negative subjective mismatch were found significant ($\chi^2 = 67.08$, $df = 7$, $p \leq 0.01$ among women; $\chi^2 = 84.07$, $df = 7$, $p \leq 0.01$ among men).

In addition, **Figure 3** plots the share of the positive subjective mismatch against the negative subjective mismatch among 16 groups (8 ethnic groups × 2 gender groups). The plot visualizes the negative association between the two mismatches (phi = −0.52, $p \leq 0.00$) and confirms the gender and ethnic heterogeneities among groups that were found previously.

Multivariate Analyses

Although the univariate descriptive analysis provides some insight into the gender and ethnic difference gaps in the positive and the negative subjective mismatches in the labor market, more elaborate models are necessary to test our research hypotheses related to gender and ethnic differences in positive and negative subjective mismatches.

We estimated a multinomial logit model for the probability of being positive or negative subjective mismatched vs. being matched. A positive coefficient in the model indicates the increase of the odds in favor of being positive or negative subjective mismatched, as opposed to matched, whereas a negative coefficient indicates the decrease of the odds. This multinomial regression was performed in three stages. In the first stage, dichotomous gender and ethnic variables were entered, and in the second stage the control socio-demographic variables were added. In the third and the final stage, we added the interaction effect between ethnicity and gender in order to investigate if the effect of ethnicity differs between genders. Our final regression model presented in **Table 3** included only significant interactions.

In **Table 3** we present the results of the multinomial logistic regression. First, we show the comparison between *being positive*

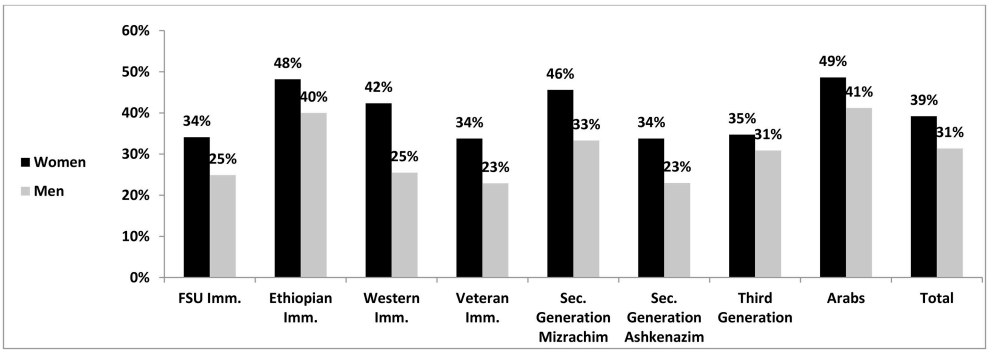

FIGURE 1 | Positive subjective mismatch in the labor market position by ethnicity and gender. Imm., immigrants; Sec., second; Miz., Mizrahim; Ashk., Ashkenazim.

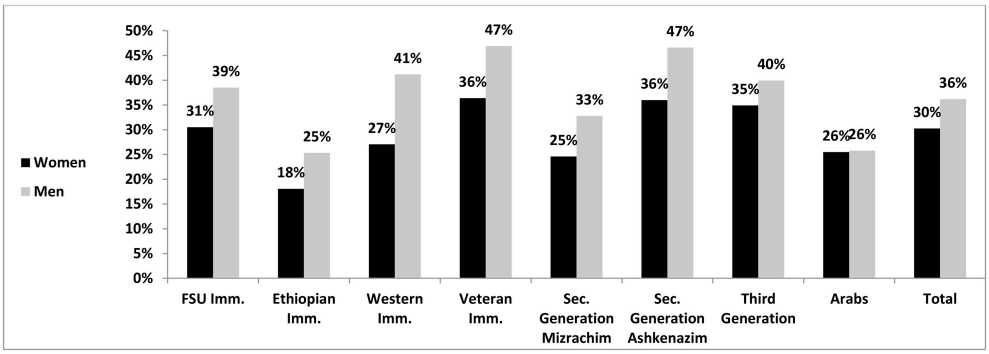

FIGURE 2 | Negative subjective mismatch in the labor market position by ethnicity and gender. Imm., mmigrants; Sec., second; Miz., Mizrahim; Ashk., Ashkenazim.

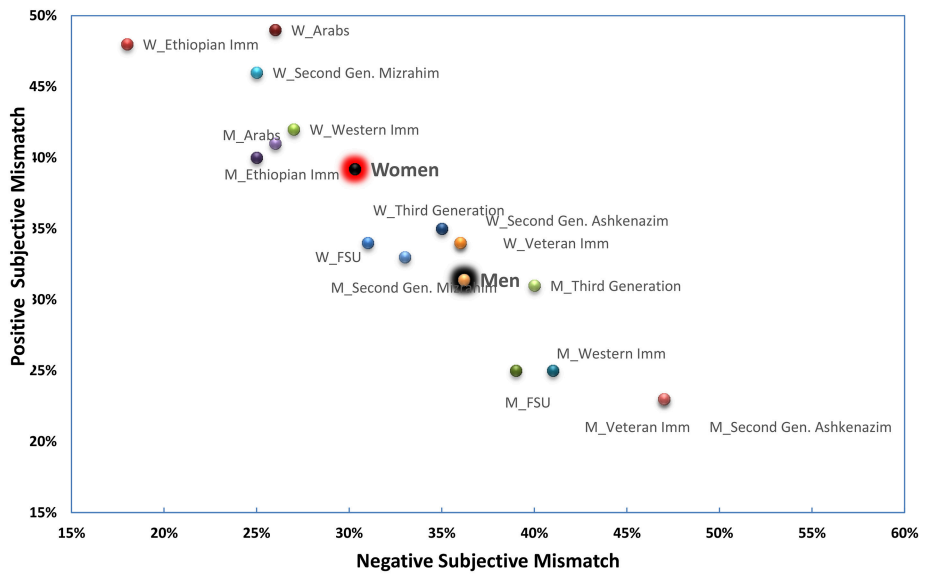

FIGURE 3 | Positive and negative subjective mismatches across different groups. W, Women; M, Men; Imm., immigrants; Miz., Mizrahim; Ashk., Ashkenazim. For example, M_Second Gen. Ashkenazim, Men Second Generation of Ashkenazim.

TABLE 3 | Multinomial regression analysis for Subjective mismatch in the labor market: comparison group is "Matched."

	Positive subjective mismatch vs. Matched						Negative subjective mismatch vs. Matched					
	Model 1a		Model 2a		Model 3a		Model 1b		Model 2b		Model 3b	
	B	Exp (B)	b	Exp (B)	B	Exp (B)	B	Exp (B)	B	Exp (B)	B	Exp (B)
(Constant)	−0.07		2.14**		2.16**		0.30**		−0.92		−0.89	
Women	0.33**	1.39	0.43**	1.51	0.41**	1.51	−0.14*	0.87	−0.30**	0.74	−0.34**	0.71
FSU Imm.	−0.30**	0.74	−0.25*	0.78	−0.25**	0.78	−0.27**	0.76	−0.30**	0.74	−0.30**	0.74
Western Imm.	−0.05	0.95	−0.07	0.93	−0.07	0.93	−0.16	0.86	−0.22	0.81	−0.22	0.81
Ethiopian Imm.	0.15	1.17	−0.06	0.95	−0.06	0.95	−0.69**	0.50	−0.29	0.75	−0.29	0.75
Veteran Imm.	−0.16	0.85	−0.12	0.89	−0.12	0.89	0.10	1.10	0.11	1.11	0.11	1.11
Sec. Generation Mizrahim	0.11	1.12	0.06	1.06	0.06	1.06	−0.34**	0.71	−0.21*	0.81	−0.21**	0.81
Sec. Generation Ashkenazim	−0.17	0.84	−0.01	0.99	−0.01	0.99	0.08	1.08	−0.04	0.96	−0.04	0.96
Arabs	0.31**	1.37	0.14	1.14	0.10	1.10	−0.43**	0.65	−0.19*	0.82	−0.31**	0.73
Age			−0.08**	0.92	−0.08**	0.92			0.03	1.03	0.03	1.03
Age^2			0.00*	1.00	0.00**	1.00			0.00	1.00	0.00	1.00
Marital status (married = 1)			0.02	1.02	0.02	1.02			0.06	1.06	0.06	1.06
Number of children			−0.03	0.97	−0.03	0.97			0.03	1.03	0.03	1.03
Locality (center = 1)			−0.25**	0.78	−0.25**	0.78			0.11*	1.12	0.11*	1.12
Religiosity			0.10**	1.10	0.10**	1.10			−0.10**	0.91	−0.10**	0.90
Full time employment			−0.21**	0.81	−0.21**	0.81			0.12	1.13	0.13	1.14
Academic degree			−0.89**	0.41	−0.89**	0.41			0.95**	2.59	0.94**	2.57
Interaction: Women*Arabs					0.13	1.14					0.34*	1.41
Negelkerke R	0.03		0.18		0.18		0.03		0.18		0.18	

*Significant at $p \leq 0.05$; **$p \leq 0.01$.

subjective mismatch vs. *matched,* and then the results of *being negative subjective mismatch* vs. *matched.*

"Being positive subjective mismatch" vs. "being matched"

As was presented in the descriptive analyses, a positive subjective mismatch is more typical for women than for men (see Model 1a). The odds of a woman being a positive subjective mismatch vs. matched are more than 1.4 times higher compared to a man, (B = 0.33, exp(B) = 1.38, $p < 0.00$). The log odds of positive subjective mismatch were significantly higher only among Arabs, (B = 0.31, exp(B) = 1.37, $p < 0.00$), compared to those of third-generation Israelis, whereas among FSU immigrants were significantly lower, (B = −0.30, exp(B) = 0.74, $p < 0.00$). Among other ethnic groups, the differences in log odds were insignificant compared to third-generation Israelis.

After controlling for socio-economic variables (see Model 2a), the gender differences not only remained but even slightly increased, (B = 0.43, exp(B) = 1.51, $p < 0.00$). In contrast, the differences between Arabs and third-generation Israelis dropped to non-significant levels, and differences between FSU immigrants and third-generation Israelis slightly decreased, (B = −0.25, exp(B) = 0.78, $p < 0.01$). Therefore, these results support our hypothesis 1a (H1a) concerning the gender differences in the positive subjective mismatch, but do not support our hypothesis 2a (H2a) concerning the ethnic differences in the positive subjective mismatch. In addition, employees who hold an academic degree, work full time, and live in the center were less characterized by a positive subjective mismatch. The effects of religiosity were found significant: a higher level of religiosity increased the log odds of positive subjective mismatch. The effect of age was parabolic. The interaction effects between gender and different ethnic groups were found insignificant (see Model 3).

"Being negative subjective mismatch" vs. "being matched"

As presented previously in the descriptive analyses and as can be seen in Model 1b, a negative subjective mismatch was less typical for women than for men (B = −0.14, exp(B) = 0.87, $p < 0.00$). The log odds of negative subjective mismatch among FSU immigrants (B = −0.27, exp(B) = 0.76, $p < 0.00$), Ethiopian immigrants (B = −0.69, exp(B) = 0.50, $p < 0.00$), second generation Mizrahim (B = −0.34, exp(B) = 0.71, $p<0.00$) and Arabs (B = −0.43, exp(B) = 0.65, $p<0.00$) were lower compared to those of third-generation Israelis. Among other ethnic groups the differences in log odds were insignificant compared to the third generation Israelis.

After controlling for socio-economic variables (see Model 2b), the gender differences increased (B = −0.30, exp(B) = 0.74, $p < 0.00$). The ethnic differences between Ethiopians and third-generation Israelis dropped to non-significant levels, whereas the differences between FSU immigrants, (B = −0.30, exp(B) = 0.74, $p < 0.00$), second generation Mizrahim (B = −0.21, exp(B) = 0.81, $p < 0.00$), Arabs (B = −0.19, exp(B) = 0.82, $p < 0.05$) and third-generation Israelis changed. In addition, only the interaction between gender and the Arab ethnic group was

found positive and significant (B = 0.34, exp(B) = 1.4, $p < 0.05$) (see Model 3b). In other words, the ethnic differences between Arabs and the third-generation Israelis exist only among men, and gender differences in the negative subjective mismatch are not apparent among Arabs.

In sum, the results for most groups (except for Arabs) support our hypothesis 1b (H1b) concerning the gender differences in the negative subjective mismatch, and partially support our hypothesis 2b (H2b) concerning the ethnic differences in the negative subjective mismatch.

In addition, similar to the positive subjective mismatch findings, but in the opposite direction, the effects of academic degree, living in the center of the country, and the level of religiosity were found significant: employees who hold an academic degree, live in the center and have low level of religiosity were more characterized by a negative subjective mismatch.

DISCUSSION

In recent years, subjective parameters related to immigrants' satisfaction with their position in the labor market have been attracting more interest from migration scholars (Jong et al., 2002; Amit and Riss, 2014). However, no comprehensive study has been conducted that analyzes and compares subjective and objective parameters of immigrant labor market integration. The current study focuses on the mismatch between subjective work perceptions and actual labor market position from a gender and ethnic perspective. We examined two forms of this perceptional mismatch: positive and negative subjective mismatch. As far as we know, our study is the first to suggest this new conceptual framework.

The findings support our hypotheses H1a and H1b concerning gender differences in both mismatches. A positive subjective mismatch was found to be more typical for women than for men, whereas a negative subjective mismatch was found to be more typical for men than women. In other words, women's subjective perceptions were higher than their actual position in the labor market, whereas men's subjective perceptions were lower than their actual position in the labor market. Moreover, after controlling for socio-economic variables, these gender differences in both mismatches even increased among all ethnic groups (except for Arabs in the negative subjective mismatch).

These findings correspond to the literature regarding the paradox of the contented female worker. According to this gender paradox, although women's jobs are generally less rewarding than men's jobs, women tend to be more satisfied with their jobs and their position in the workplace than men (Clark, 1997; Sousa-Poza and Sousa-Poza, 2007; Mora and Ferrer-i-Carbonell, 2009). One of the possible explanations for this phenomenon is gender differences in worker expectations. Women's work expectations are relatively lower than men's work expectations, thus women's higher job satisfaction is explained by women's perceived improved position in the labor market relative to their low expectations. Therefore, once women's expectations and perceptions related to their labor market position reach parity to those of men, their reported satisfaction should be identical as well (Clark, 1997). According to Clark (1997), women's relatively higher job satisfaction may be a transitory phenomenon. In line with this logic, gender differences in positive and negative subjective mismatches may also be a transitory.

Our hypotheses H2a and H2b relate to ethnic differences in both mismatches. According to hypothesis H2a, a positive subjective mismatch is more apparent among disadvantaged ethnic groups with relatively lower socio-economic background compared to ethnic groups with relatively higher socio-economic background. In this respect it is important to note that according to our findings, the actual position of second-generation Mizrahim in the labor market was relatively higher than we had expected based on previous studies (e.g., Semyonov et al., 2015). A recent report on wage stratification in Israel indicates that second-generation Mizrahim have improved their position dramatically and the two groups located at the bottom of the scale are Ethiopian immigrants and Arab citizens (Swirski et al., 2018). The findings indeed show that the highest percent of respondents for whom a positive subjective mismatch was detected was among Ethiopian immigrants and Arabs, groups with relatively lower socio-economic background. However, after controlling for socio-economic variables, the differences detected for Ethiopian immigrants and Arabs dropped to non-significant levels. Therefore, these results rejected our hypothesis H2a concerning the ethnic differences in the positive subjective mismatch.

According to our hypothesis H2b, a negative subjective mismatch is more apparent among advantaged ethnic groups with relatively higher socio-economic background compared to disadvantaged ethnic groups with relatively lower socio-economic background. The findings show that log odds of negative subjective mismatch among FSU immigrants, Ethiopian immigrants, second-generation Mizrahim, and Arabs were lower compared to those of third-generation Israelis. However, after controlling for socio-economic variables, the ethnic differences between Ethiopians and Arabs (women only) compared to the third-generation Israelis dropped to non-significant levels, whereas the differences between FSU immigrants, second-generation Mizrahim, Arabs (men only) compared to the third-generation Israelis changed slightly. This finding means that certain ethnic groups are less negative related to their actual position in the labor market compared to the third-generation Israelis. Thus, our hypothesis H2b concerning the ethnic differences in the negative subjective mismatch was partially supported.

As we learn from the findings, the subjective work perceptions of Arab men are in congruence with their objective position in the labor market (more matched and less negative compared to the third generation). This may be explained by a realistic view, without overly high expectations, of this clearly disadvantaged group in the Israeli labor market (Yashiv and Kasir, 2013). The same findings were obtained for second- generation Mizrahim. But in their case, although their objective position (in terms of education, occupation and income) in the labor market is

average and even above average (as can be seen in **Table 1B**), they are satisfied with their objective position in the labor market, and therefore we can assume they do not express higher expectations compared to the third generation. A possible explanation of this finding may be that second-generation Mizrahim continue to perceive themselves as a disadvantaged group. This possible explanation should be further examined in future studies. As for FSU immigrants, in contrast to the second-generation Mizrahim, their responses tend to be balanced in both analyses (positive and negative subjective mismatch). In other words, there is a congruence between their objective position in the labor market and their subjective perceptions of it compared to third-generation immigrants. The case of FSU immigrants is unique, as they have a relatively high educational profile but are disadvantaged in the labor market in terms of occupation and income (as can be seen in **Table 1B**). This pattern points to the complexity of the FSU immigrant's position in the Israeli labor market, as they do not fit the typical behavior of both disadvantaged or advantaged groups. Notwithstanding these findings, we should consider that the level of work perceptions and expectations, as well as the objective position in the labor market, may change over time for the different groups. Therefore, the differences in positive and negative subjective mismatches may also be a transitory phenomenon (Clark, 1997).

Our findings also indicate that the positive and negative subjective mismatch patterns are not fully symmetrical. The gender gap can be symmetrically described by the positive and negative pattern, meaning that positive subjective mismatch is more typical for women than for men, and negative subjective mismatch is more typical for men than women. However, the ethnic gap cannot be symmetrically described. Whereas the ethnic gap is not detected in the positive subjective mismatch, it is partially detected in the negative one. This complex pattern related to ethnicity should be addressed and researched in future studies.

Another important finding is that employees who hold an academic degree, have a full-time job, and live in the center were less characterized by a positive subjective mismatch. In the opposite direction, but comparably to the findings related to the positive subjective mismatch, employees who hold an academic degree and live in the center were more characterized by a negative subjective mismatch. This may be explained by the fact that higher educated workers, those in professional or managerial positions, and those living in the center are all likely to have higher expectations about what their jobs should entail (Clark, 1997; Sousa-Poza and Sousa-Poza, 2007; Mora and Ferrer-i-Carbonell, 2009). This finding may be in line with the structural explanation, according to which the paradox is more detectable in less prestigious occupations with a considerable number of female referents, and not in male-dominated occupations (Valet, 2018). Our findings may indicate that the differences in the positive and the negative subjective mismatches may be attributed to socioeconomic differences, and not merely to ethnic and gender differences. Future studies should continue exploring the changing dynamic of gender, ethnicity, migration and socio-economic position in the Israeli context.

In addition, our findings point to a positive effect of religiosity on positive subjective mismatch and a negative effect of religiosity on negative subjective mismatch. These findings may be explained by subjective well-being studies indicating that certain aspects of religiousness (e.g., public religious involvement, intrinsic religious motivation) are positively related to individuals' subjective well-being (Blaine and Crocker, 1995; Smith et al., 2003).

This study's limitations are mainly a consequence of the limitations of the CBS social survey database. The CBS social surveys do not include questions regarding individual beliefs and expectations related to the labor market in general or to the individual's job in particular. The examination of employee beliefs and expectations may be pursued in future research, thus allowing us to specifically examine the impact of expectations and beliefs on the mismatch between the subjective and actual position in the labor market.

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KA and SC-B contributed time and effort in writing this paper. KA contributed to the theoretical part of the paper and wrote the introduction section, whereas SC-B conducted the analyses and worth the methodology and results section. The discussion of the paper was written together.

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Prejudice Against Immigrants Symptomizes a Larger Syndrome, Is Strongly Diminished by Socioeconomic Development, and the UK Is Not an Outlier: Insights From the WVS, EVS, and EQLS Surveys

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Public attitudes toward immigrants in the UK, especially prejudice against them, form a strong theme in retrospective media postmortems emphasizing the uniqueness of Brexit, yet similarly hostile public opinion on immigrants forms a recurrent theme in populist politics in many European Union nations. Indeed, if UK residents are not uniquely hostile, then the UK's exit from the EU may be only the first symptom of proliferating conflicts over immigration that will plague EU nations in future years. A well-established symptom (or consequence) of prejudice—aversion to outgroups as a neighbors—shows that prejudice against immigrants, other races, Muslims, Hindus, Jews, and Gypsies are all relatively low in the UK. This is as expected from the general decline of prejudice and social distance with socioeconomic development, demonstrated here in broad perspective across many countries. Indeed, UK residents are about as prejudiced against each of these ethno-religious outgroups as are their peers in other advanced EU and English-speaking nations, and much less prejudiced than their peers in less prosperous countries. Confirmatory factor analysis supports the view that a single latent ethno-religious prejudice generates all these specific prejudices, so it is not specific experiences with any one of these groups, nor their specific attributes, that are the wellspring of this deep-seated underlying prejudice. Replication using other measures of prejudice and another cross-national dataset confirms these findings. Data are from the pooled World and European Values Surveys (over 450,000 individuals, 300 surveys, and 100 nations for this analysis) and from the well-known European Quality of Life surveys. Analysis is by descriptive, multilevel (random intercept, fixed effects), and structural equation methods.

Keywords: prejudice, social distance, public opinion on immigrants, socioeconomic development, Brexit, UK, trends

INTRODUCTION

Do values and attitudes about immigration and ethnic and religious diversity set the United Kingdom apart from the European Union? Clearly, the prospects for constructive engagement between nations negotiating a common labor market are better if these attitudes are shared, especially given EU rules about open migration. Prejudice complicates the employment process (Neckerman and Kirschenman, 1991; Heath et al., 2008; Kelley and Evans, 2015) as well as the political process (Breznau and Eger, 2016; Wagner and Meyer, 2016). A crucial issue for a "common labor market" is a civil residential environment for people working away from their home country, so it is especially important to know how the natives of a country feel about immigrant workers as neighbors. Indeed, how one feels about having members of potential outgroups as neighbors is a classic social distance measure with a distinguished intellectual pedigree (Bogardus, 1933). There is a wide range of perfectly legitimate interpretations of the relationship between the concepts of "prejudice" and "social distance," ranging from seeing "social distance" as a symptom or indicator of prejudice to seeing normatively endorsed social distance as a cause of prejudice, to seeing prejudice as a cause of social distance. We will here adopt the Park approach (Park and Burgess, 1921; Park, 1924) that social distance is a symptom or indicator of prejudice, in part because the research seeking to establish a causal direction remains inconclusive.

But if attitudes about immigration, ethnic and religious diversity do not set the UK apart—if Britain is not unique within the EU—then Brexit may not reflect circumstances unique to Britain. It might instead be that Brexit is only the first symptom of wider difficulties that will come to plague EU nations in future years. Of course, there are many other ways in which Britain is known to be "exceptional" in the European context (Castles, 2010; Evans and Kelley, 2017, 2018), so a similarity between Britain and "the Continent" on one dimension, such as aversion to "outgroups" different in nationality, ethnicity, or race does not necessarily imply similarities in other domains of culture.

Prior research has long shown that some degree of anti-immigrant prejudice is present in all European countries, varying widely among them (Scheepers et al., 2002; McLaren, 2003; Zick et al., 2008a; Davidov and Semyonov, 2017). We extend that research to the overseas Anglophone countries and, beyond them, to the world at large.

Thus, this paper explores ethno-religious prejudice in comparative, cross-national perspective, with special reference to the UK. We compare the UK to the European Union (Scheepers et al., 2002; Zick et al., 2008a; Gorodzeisky and Semyonov, 2015), to the UK's culture group—the other Anglophone countries (Kelley and Evans, 1995; Inglehart, 2008; Inglehart and Welzel, 2010), and to the rest of the world. For clarity, we will take into account the effect of socioeconomic development, as indexed by GDP per capita, on various aspects of prejudice (Blalock, 1967; Inglehart, 1981, 1990, 1997; Ruist, 2016). Within the EU, we distinguish the post-Communist countries from others, as their patterns of prejudice may differ (Kunovich, 2004). This does not imply that these are the only potential influences of social context on prejudice(s), but rather takes the Maslowian perspective (Maslow, 1943) that socioeconomic development is at least one root cause of many attitude and value trends.

Recent research on Europe finds moderately strong links across prejudices against different targets in the general domain of ethnicity and religion—immigrants, people of different race, ethnicity, religion, or nationality (Zick et al., 2008a; Gorodzeisky and Semyonov, 2015). This raises the question of the degree to which ethno-religious prejudices are a patchwork of unrelated attitudes and to what degree they reflect an underlying schema, a single approach or orientation that generates the apparently specific attitudes (Lemmer and Wagner, 2015). The "cognitive turn" in cultural sociology suggests that each of these apparently distinct prejudices is a kind of symptom or indicator of a single underlying schema of ethno-religious prejudice (DiMaggio, 1997; Brubaker et al., 2004). According to this line of reasoning, culture is neither a coherent whole with a unitary logic nor a happenstantial midden of unrelated attitudes. Instead it is at least a stew with coherent integrated chunks (in our example, schemas) that may or may not be integrated with each other into a casserole. Supportive empirical evidence for this approach has been reported for Germany (Zick et al., 2008b).

Prior theory and research raise three possibilities: (1) Attitudes toward immigrants and toward different ethnic and religious groups are each a separate matter deriving from specific experiences of contact and of local feeling; (2) These attitudes form a coherent whole: There is an underlying latent variable of prejudice toward immigrant, ethnic, and religious outgroups that is distinct from prejudice toward other outgroups or other disempowered groups, e.g., LBGTQ, disabled, etc. (DiMaggio, 1997; Guimond et al., 2003; Brubaker et al., 2004; Lemmer and Wagner, 2015); and (3) These attitudes form a coherent whole that covers negative sentiment toward all outgroups and disempowered groups, perhaps reflecting prejudice as a generalized personality trait (Allport, 1979 [1954]; Stangor et al., 1991; Bergh et al., 2016). Our study was largely an exploratory, inductive one, endeavoring to examine whether Britain was distinct on a wide variety of ethno-religious prejudices, to discover whether these prejudices hang together worldwide, and to assess the impact of socioeconomic development on ethno-religious prejudice.

We also include an exploration of changes over time, net of our substantively measured variables. Of course, time is not itself a social force. Rather, it represents the influence of countless unmeasured social forces, so our responsibility as social scientists is to specify the relevant substantive influences that lurk inside the label "time" or "changes over time." Nonetheless, exploring changes over time may provide clues about which substantive influences are at work. Given our inductive approach, formal hypothesis development would be *post-hoc* and hence inappropriate for an introduction. We do develop some working hypotheses for future deductively-oriented research in the section Discussion.

A Note on Terminology

This article focuses on negative feelings toward immigrant, ethnic, and religious minority groups, which we shall call

"prejudice," but we recognize that there are nearly as many specific uses of the word, and of associated terms such as "social distance" and "aversion," as there are scholars who use them. "Group-focused enmity" has also been proposed (Zick et al., 2008b), but implies a very strong magnitude and we need a term that can encompass sentiments ranging from very mild to very intense. We will use "prejudice" in its broad sense to mean negative feelings, negative sentiment, aversive emotions, etc. and shall consider "social distance" to be a symptom or indicator of prejudice (see also, e.g., Storm et al., 2017). "Social distance," too, ever since its invention (Park and Burgess, 1921; Park, 1924) plays many different roles in the sociology, anthropology, and psychology of minority-majority groups relations, ranging from a strictly institutional one (degree of normatively and/or legally allowed contacts between social groups) to a strongly affect-based one (desire for lack of contact, degree of desired separation). Social distance as institutionally defined could be a cause of prejudice via system justification mechanisms; social distance as emotion could be either an indicator of prejudice or a consequence of prejudice. The indicator we will explore, desire to avoid having members of various ethnic and religious outgroups as neighbors, is familiar from its use as a component item in the well-known Bogardus social distance scale (Bogardus, 1933). As one social history of the matter put it, "The scale was developed by Emory Bogardus in 1924 and is still widely used in measuring prejudice" (Wark and Galliher, 2007).

DATA, MEASUREMENT, AND METHOD

Survey Data: WVS, EVS, EQLS

Data are from the World Value Study and European Values Study datasets (EVS, 2015; WVS, 2015) pooled for all available years (Díez-Medrano, 2011). This is a splendid and highly regarded dataset, well-documented on the two organizations' websites.

In the full dataset there are over 340 surveys, over 100 countries, and over 500,000 individual respondents. The several questions analyzed here were asked in varying numbers of surveys with therefore varying numbers of respondents (described in the text). For example, our key variable, prejudice against immigrant workers, was asked in 327 surveys from 101 countries, with 448,269 individual respondents. We treat all countries as equally weighted units (e.g., Hungary and United States both have weights of 1) in the multilevel analysis, in the scatterplots and the estimation of the fit lines connecting prejudice with socioeconomic development. Ockham's Razor dictates that the simplest method is to be preferred unless additional complexity demonstrably reveals important evidence that would be overlooked with the simpler method, so, like much other recent research using these and similar datasets, we do not re-weight the individual-level cases (Esping-Andersen and Nedoluzhko, 2017; Kelley and Evans, 2017; Breznau and Hommerich, 2018; Evans and Kelley, 2018; Fernandez and Jaime-Castillo, 2018; Ignacz, 2018; Miranda et al., 2018; Ng and Diener, 2018; Roex et al., 2018).

For this analysis, we dropped all nations with <1 million citizens, several city-states (Hong Kong, Luxemburg, Singapore) on the grounds that prejudice-generating processes could be different in such relatively intimate settings, and one nation that did not ask the relevant questions (Israel).

We also provide an auxiliary analysis replicating the key result on an alternative dataset, the well-known European Quality of Life Survey of 2011–2012 with representative nationwide surveys in 29 countries and $N = 66{,}795$ individuals on the question of interest. It is well-documented on-line (www.eurofound.europa.eu).

For some variables, Northern Ireland has a separate dataset, and for others it is pooled with Great Britain. For simplicity, the datasets containing Great Britain will all be labeled "UK" in the graphic displays in the paper (represented by a green dot); technically most of them are UK, but some are GB. In all cases where they are GB, Northern Ireland is shown separately as a blue dot (like the other Anglophone countries).

Measurement

The key questions on prejudice are about objecting to a member of a possible outgroup as a neighbor. This is an element of the classic Bogardus social distance scale (Bogardus, 1933). Also, recent theorizing about ethnicity-as-cognition would posit that the stimulus of being asked about different groups as neighbors elicits mental "scripts" in which the survey respondent calls to mind likely sequences of events involving a neighbor belonging to the group in question (Brubaker et al., 2004). For our purposes, the key item is "immigrant/ foreign workers" (v37), and items we also examine include "people of a different race" (v35), and "people of a different religion" (v39) as well as Gypsies, Hindus, Jews, and Muslims (from "add on" versions or other years). Of course, immigrant or foreign workers theoretically need not be ethnically or religiously distinct, but, in practice, most have a different native language, which the general population seems to regard as a marker of, or equivalent to, ethnicity.

The verbatim from the World Value Study Wave 5 is (WVS, 2014):

(Show C ard D)

On this list are various groups of people. Could you please mention any that you would not like to have as neighbors? *(Code au answer for each group):*

		Mentioned	Not mentioned
V34.	Drug addicts	1	2
V35.	People of a different race	1	2
V36.	People who have AIDS	1	2
V37.	Immigrants/foreign workers	1	2
V38.	Homosexuals	1	2
V39.	People of a different religion	1	2
V40.	Heavy drinkers	1	2
V41.	Unmarried couples living together	1	2
V42.	People who speak a different language	1	2
V43.	*(Optional: minority relevant to given country, write in):* _____	1	2

Unfortunately, all these items are dichotomies so, as has long been known, measurement is crude and random measurement error is greater than if they had been measured on a 5-category or 7-category scale (Gjeddebaek, 1968; Heitjan, 1989; Haitovsky, 2001). Nonetheless, the "neighbor" concept is a strong one, so

there are good prospects for learning something from these items despite the crude measurement.

Somewhat different lists of groups were offered in different surveys, varying both by nation and by date of survey, but "Immigrants/foreign workers" and "People of a different race" were almost always included. The standard European Values Study wording is very similar: "On this list are various groups of people. Could you please sort out any that you would not like to have as neighbors." The two wordings yield closely similar results.

Despite valiant attempts at comparability, there is one major error. The French 2006 WVS used a variant wording that produces a huge spike in mentioning "immigrants/foreign workers" and the other groups that could be compared (for details see http://www.worldvaluessurvey.org/WVSDocumentationWV5.jsp). The variant wording looks innocuous (available on the WVS website) but the strongly out-of-line results compared to other French surveys both before and after mean that it cannot be used as equivalent to the standard question, so we have omitted the French 2006 WVS.

The Hungarian survey asked this as a series of separate questions (which of course produces higher reliability data), rather than in the standard format, but this does not appear to introduce any distortions: Correlations among items and with other variables are within a plausible range, based on the other countries and the proportions/means are reasonable, so we have retained the Hungarian data.

Other groups are included in some waves and some countries (details in **Appendix A**). Specifically of interest to us are Gypsies, Hindus, Jews, and Muslims.

We will also use some individual-level predictors in the structural equation model described below. One of the longest established of these effects is education enhancing tolerance (Stouffer, 1955), we will measure it in full-time equivalent years of education completed. In some instances, this must be estimated from the highest level of education completed. Age, gender, and (relative) income have ambiguous effects in prior research, but they are never large (Quillian, 1995; Semyonov et al., 2006; Rustenbach, 2010; Gorodzeisky and Semyonov, 2015). Religion's effects have been controversial since the beginning (Allport and Kramer, 1946; Lenski, 1961; Scheepers and Eisinga, 2015), but our purpose is not to evaluate the competing theories about it, but rather simply to use religiosity, as indexed by a 4-item religious belief scale (Kelley and de Graaf, 1997), as a criterion variable.

Methods: Visualization, OLS, and Multilevel Analysis

We explore multiple specific examples of ethno-religious prejudice, considering the proportion who would reject specific groups as neighbors by country to provide a kind of social epidemiology of prejudice comparing the UK to peer nations in the EU, to the overseas Anglophone nations (the UK's sometimes obstreperous offspring which inherited traditional English law and institutional arrangements), to poorer EU nations, and to a broad representation of other nations around the world. For the EU, we also provide a regression line from a simple aggregate model predicting the proportion shunning specific groups as neighbors from the level of socioeconomic development of the nation (allowing both a linear term and a quadratic term).

We then assess how close the UK is to the level of prejudice (against a particular group) that is typical of EU countries at approximately the same level of development. The robustness of aggregate analyses of this kind is sometimes influenced by seemingly minor decisions about missing data, variable definition, and functional form (Breznau, 2016), so we are fortunate to have the large number of surveys in the WVS/EVS family, over 300, available for this project. This provides a kind of social epidemiology of prejudice (Sperber, 1985), a rich context in which to consider the prejudice of central interest to this paper.

Having set the context, we then consider the level of prejudice against immigrant/foreign workers, our main focus, using this same approach.

We next turn to the question of the degree to which ethno-religious prejudices are a patchwork of unrelated attitudes and to what degree they are reflect an underlying schema, a single approach or orientation that generates the apparently specific attitudes. Confirmatory factor analysis of the prejudice items as a latent dependent variable in a structural equation model is an appropriate statistical method (Bollen, 1989; Treiman, 2009). Because we have used multiple imputation of missing data, fit indices are not appropriate, but the inter-item correlations, factor loadings and correlations with criterion variables all support the view that all the items tapping negative sentiment toward foreigner, ethnic, and religious groups all tap one underlying dimension, one latent variable, and that this latent variable is distinct from negative sentiment toward other outgroups.

As well as having strong associations with each other, the observed items measuring a latent variable/construct must have closely similar associations with criterion variables—variables not in the scale but which might reasonably be expected to be among its causes or consequences. As noted above in the Measurement section, the criterion variables we use are age, gender, education, income, and religiosity.

Following current best practice (Kelley et al., 2017), we do not group-mean-center the variables in our multilevel analyses.

We provide several structural-equation, OLS, and multilevel analyses depicting the impact of GDP (allowing curves) and assessing whether the UK is different net of GDP and individual characteristics. For some of these we provide graphs of predicted values of the means using whole-population standardizations that show the predicted means on the response variable (prejudice) across the range of the predictor variable of interest whilst holding the other predictor variables constant (based on the model described in conjunction with the graph). We use OLS for the country-specific models of change over time (since there was no pattern evident in the pooled file). The detailed equations are in **Appendix B**.

In addition to our main analysis, we provide two sensitivity analyses applying our model to two response variables with different wording but in the same conceptual domain and an additional sensitivity test to see whether the GDP effect changes when % foreign in the country is taken into account.

Causality

GDP per capita at parity purchasing power not only expresses socioeconomic development differences among countries, but

it also evolves within countries. Several other of the predictor variable we will use have also show major shifts over the period under consideration: education has risen, populations have aged, the sex composition of societies has shifted toward women, but religious belief holds steady or shifts erratically. Our estimates of the effects of these variables are unbiased unless it can be shown that they proxy for omitted variables. We know that relative income, education, and GDP are all connected with actual individual income (for example, in dollars at parity purchasing power) which is unmeasured in these surveys. But education is clearly causally prior to income (both measured at the individual-level), so its effect is unbiased, provided that we interpret it as a total effect potentially including an indirect effect through income rather than a direct effect.

RESULTS

Results, Part 1: The Context: Ethno-Religious Prejudices in Detail, as a General Syndrome, and How Attitudes Toward Immigrants Fit In

We begin by setting the context, inquiring about various aspects of ethno-religious prejudice to get the big picture before going on to prejudice specifically against migrants/foreign workers. Details are in **Appendix A**.

Prejudice Against People of a Different Religion

We start with prejudice against people of a different religion. For each country, we calculated the percent saying that they would not like to have people of a different religion as neighbors (**Figure 1**, below). The UK is shown as a green dot; the other Anglophone countries are shown in blue; EU countries other than the UK are in red; and other countries are in gray. Further details are in **Appendix A**.

To clarify the relationship, we have arrayed the countries from left to right according to their socioeconomic development as indexed by their GDP per capita—a major influence on prejudice and one in which there is substantial variation in the EU. The red line shows the statistical relationship between GDP per capita and prejudice against people of a different religion for the EU (leaving aside the UK).

Of key interest here is whether the UK is like other advanced countries in the EU, or whether it is like its cultural kin, the other Anglophone countries, or whether it is something quite distinct.

Prejudice against people of a different religion is very low in the UK (green dot, partially obscured between Australia and

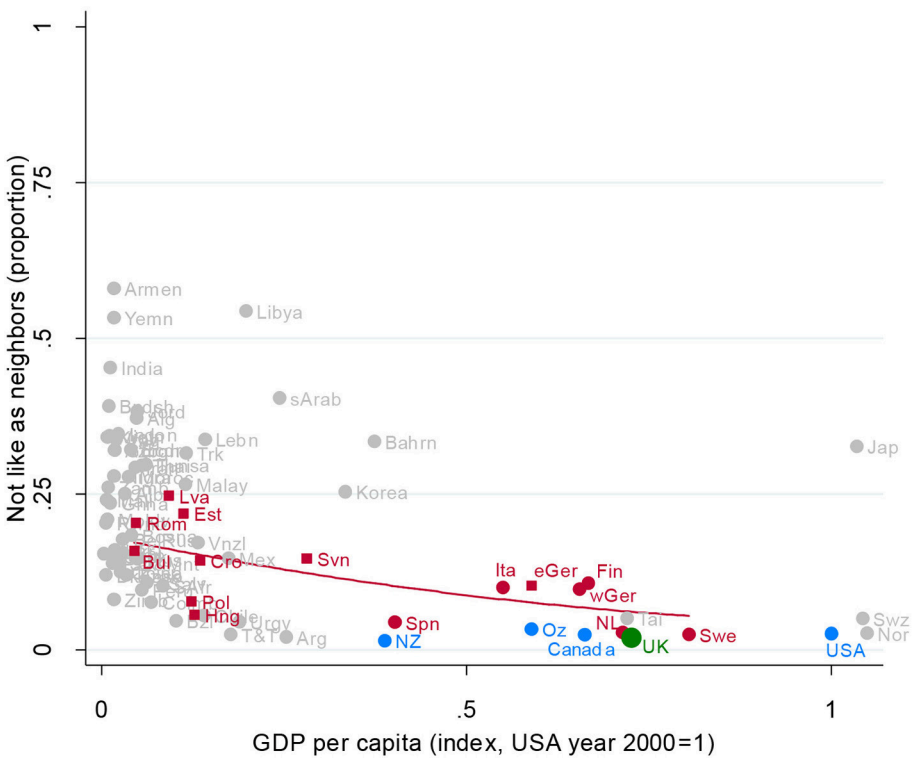

FIGURE 1 | Prejudice against people of a different religion. Attitude in the UK (green), in other English-speaking nations (blue), in EU nations (red squares for ex-Communist, circles for others), and other nations (gray). Fit line just for the EU, excluding the UK. GDP per capita (index, USA year 2000 = 1). Source: World Value/European Value Studies 1981–2014 (193, 644 individuals for this analysis).

Sweden): under 5% would dislike having a neighbor of a different religion. In this, the UK is closely similar to the other Anglophone countries (blue dots).

Prejudice against a neighbor of a different religion is very diverse in the EU (red dots). At the same socioeconomic level as the UK, Sweden is just as unprejudiced as the UK; Spain, Italy, Finland, and Germany are a little more prejudiced.

Looking across the graph from left to right shows that there tends to be more diversity in prejudice among the developing nations and less among the advanced nations (although Japan is a prejudiced outlier, as is well-known). The scatterplot narrows as GDP per capita rises. We also see a decline in prejudice across levels of GDP within the EU: The downward sloping red line shows prejudice declining from around 20% who would shun neighbors of a different religion in the poorest EU countries (such as Bulgaria and Latvia) to around 10% in Germany, Italy, and Finland. Poland and Hungary are exceptions, showing the low levels of prejudice typical of much richer EU nations.

All in all, if in fact prejudice against people cleaving to a different religion matters to labor mobility in the EU and to local resistance to a "common market" workforce, then the UK—and indeed all the advanced countries in the EU—hold a common, low-prejudice outlook. Details on other nations (mostly unlabeled dots in **Figure 1**) are in **Appendix A**.

This warrants a closer look because it is possible that people might feel that "other religions" in general are acceptable, but they might still feel prejudiced against specific religions. In addition, many Muslim immigrants are visually identifiable in Europe and the overseas Anglophone countries, so there could be an ethnic component here as well. How do members of the general population feel about the possibility of having a Muslim neighbor? (Note that we omitted Turkey from the analysis of prejudice against Muslim neighbors, since our focus is on minority groups).

Prejudice Against Muslims

The level of prejudice against Muslims in the UK (**Figure 2**, green dot, partially obscured, near Sweden and Canada) is very similar to other countries at the same level of development [see also (Bulmer and Solomos, 2010)]—indeed its very close proximity to the regression line shows that UK opinion is strongly typical of equally rich EU countries such as Italy, Germany, Austria, and the Netherlands, with Sweden perhaps a fraction less prejudiced but Finland and East Germany slightly more. Moreover, on this aspect of prejudice, the UK is also very similar to the other Anglophone countries.

Here again we see a development gradient, with prejudice somewhat higher among the poorer EU countries and lower

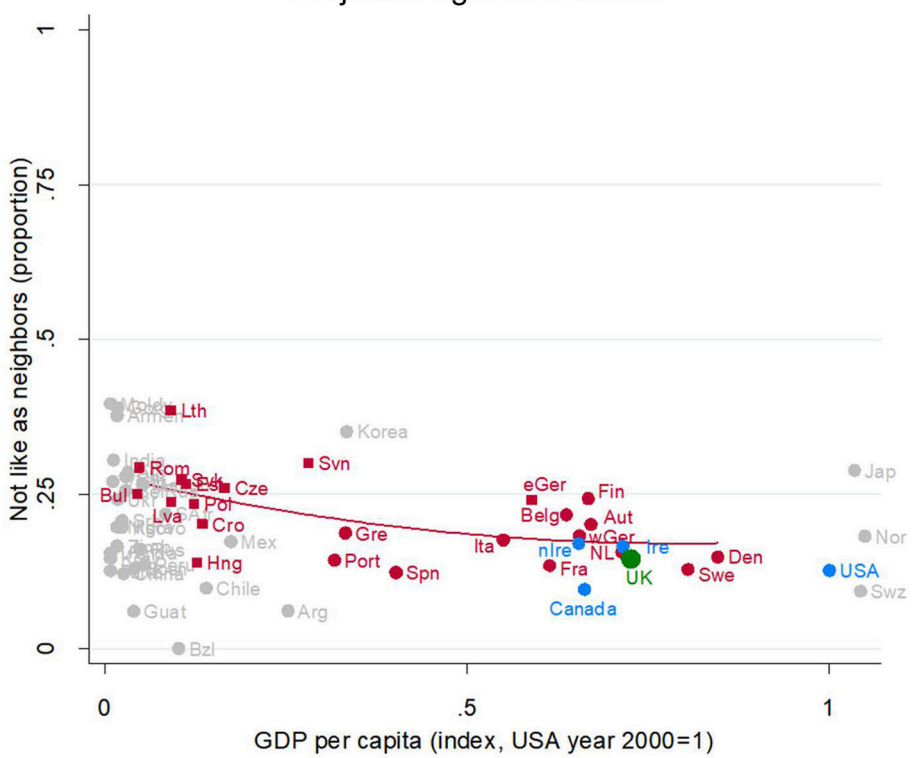

FIGURE 2 | Prejudice against Muslims. Attitude in the UK (green), in other English-speaking nations (blue), in EU nations (red squares for ex-Communist, circles for others), and other nations (gray). Fit line just for the EU, excluding the UK. GDP per capita (Index, USA year 2000 = 1). Source: World Value/European Value Studies 1981–2014 (196, 569 individuals for this analysis).

among the richer EU nations. Looking across the whole array of nations also suggests some degree of convergence accompanying socioeconomic development.

Thus, the UK is very ordinary for its level of development in having a relatively low level of prejudice against Muslims. It is similar to comparable EU nations (including Germany) and similar to the other Anglophone countries. Again, further details are in **Appendix A**.

Prejudice Against Hindus

Hinduism is another "foreign" religion in Europe and the overseas Anglophone countries, and many of its adherents are visually distinctive. But unlike for Muslims, it does not have (at least in these countries) an association with terrorism. So, it is interesting to compare to the foregoing views about Muslims.

Here again, the UK is right where we would expect for an EU country at its level of development: The UK's green dot (partially obscured, between Belgium and Sweden) sits very near the regression line (**Figure 3**). Shunning a Hindu neighbor is very rare in all the rich EU countries. So too in the Anglophone countries (blue dots).

Here, there is a very steep development gradient in the EU (red line), with Romania, Slovakia and the Czech Republic being hugely more prejudiced against Hindus than other poor to middling EU countries. (Fewer countries asked this question, so there are fewer gray dots which makes it difficult to say what is going on outside the EU).

Prejudice Against Jews

Jews have long been the victims of prejudice in Europe, but in recent decades more than 90% in all the rich European countries would not object to a Jewish neighbor (**Figure 4**). In this, the UK (green dot, partially obscured just below Ireland) is again exactly where we would expect an EU nation at its level of development to be. People in the EU are much less prejudiced against Jews as neighbors than they are against Muslims, and this holds across all levels of development in the EU.

Prejudice against Jews is very low in all Anglophone nations (blue dots) but is varied and occasionally very high in poor non-EU nations.

Racial Prejudice

Prejudice is fairly similar against people "of a different race." It declines from around 20% at the less developed end of the EU to under 10% in the UK, Germany, Austria, Sweden, Belgium, the Netherlands and peer countries (**Figure 5**).

Here again, the UK has the low levels of prejudice typical of an EU country at its level of socioeconomic development:

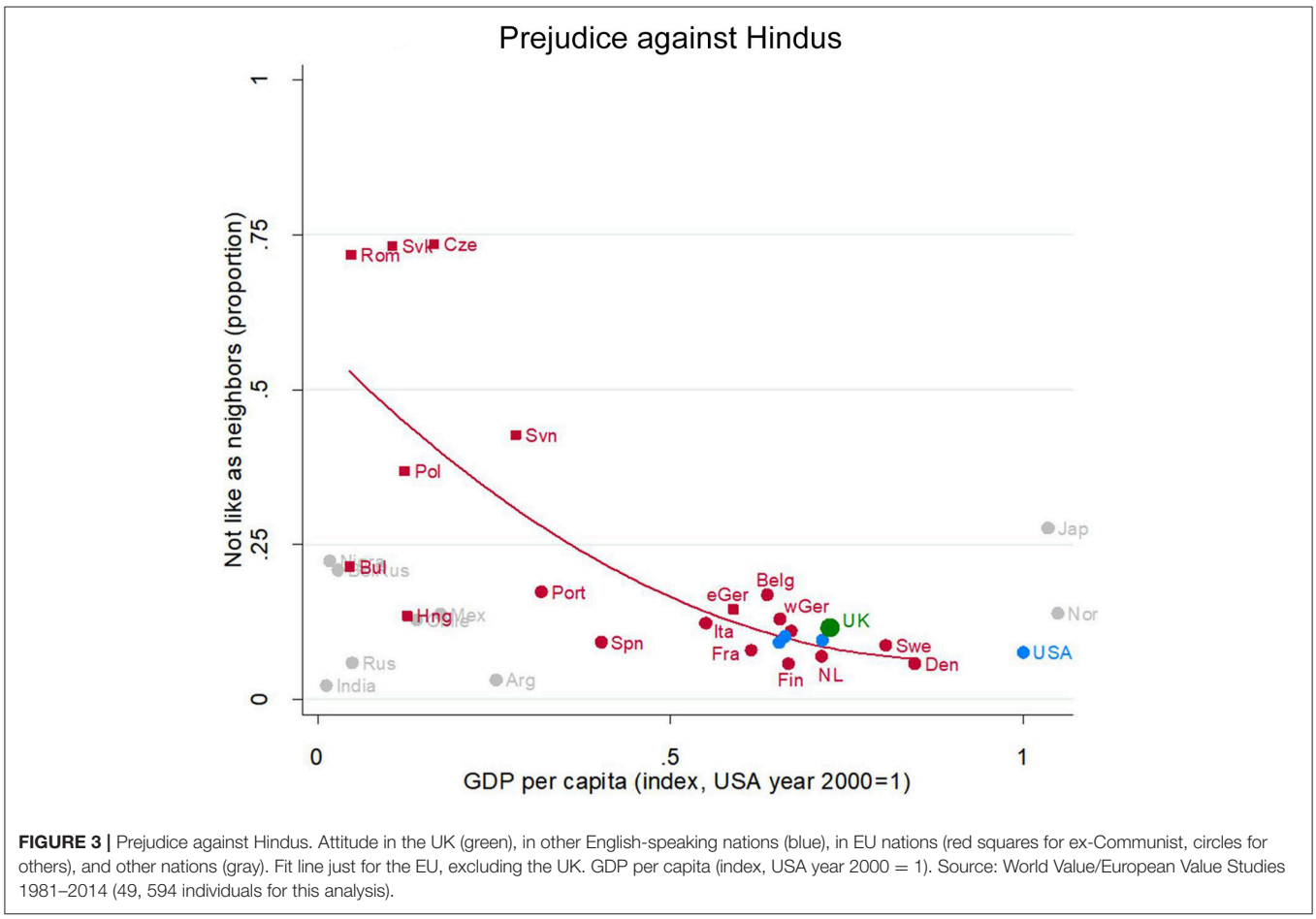

FIGURE 3 | Prejudice against Hindus. Attitude in the UK (green), in other English-speaking nations (blue), in EU nations (red squares for ex-Communist, circles for others), and other nations (gray). Fit line just for the EU, excluding the UK. GDP per capita (index, USA year 2000 = 1). Source: World Value/European Value Studies 1981–2014 (49, 594 individuals for this analysis).

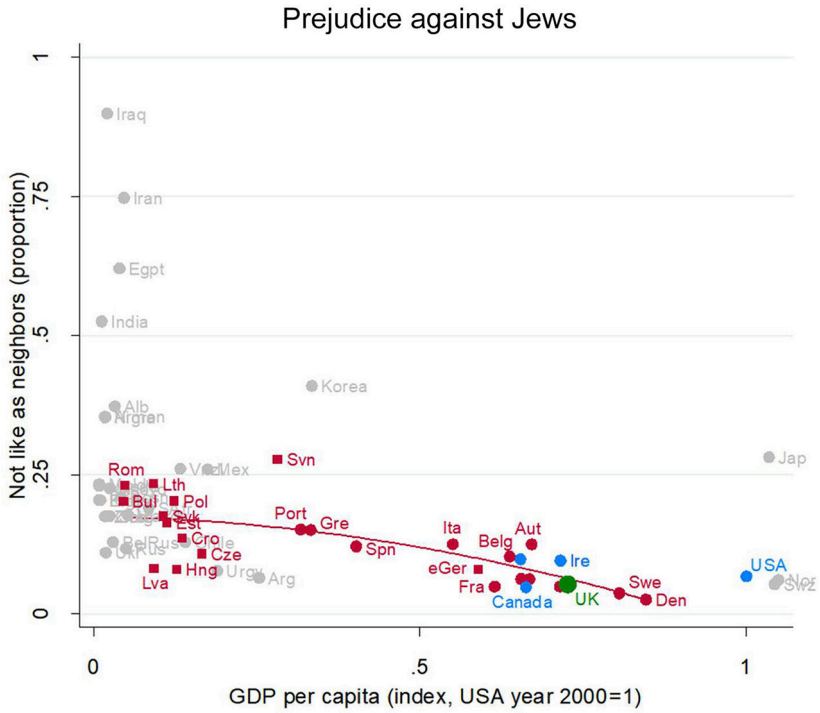

FIGURE 4 | Prejudice against Jews. Attitude in the UK (green), in other English-speaking nations (blue), in EU nations (red squares for ex-Communist, circles for others), and other nations (gray). Fit line just for the EU, excluding the UK. Source: World Value/European Value Studies 1981–2014 (186, 218 individuals for this analysis).

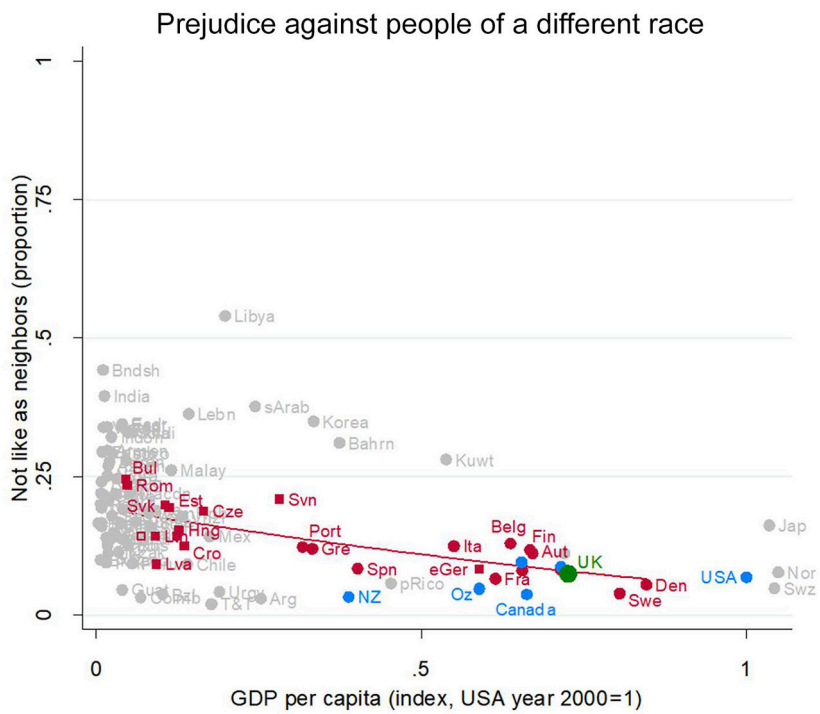

FIGURE 5 | Prejudice against people of a different race. Attitude in the UK (green), in other English-speaking nations (blue), in EU nations (red squares for ex-Communist, circles for others), and other nations (gray). Fit line just for the EU, excluding the UK. GDP per capita (index, USA year 2000 = 1). Source: World Value/European Value Studies 1981–2014 (451, 824 individuals for this analysis).

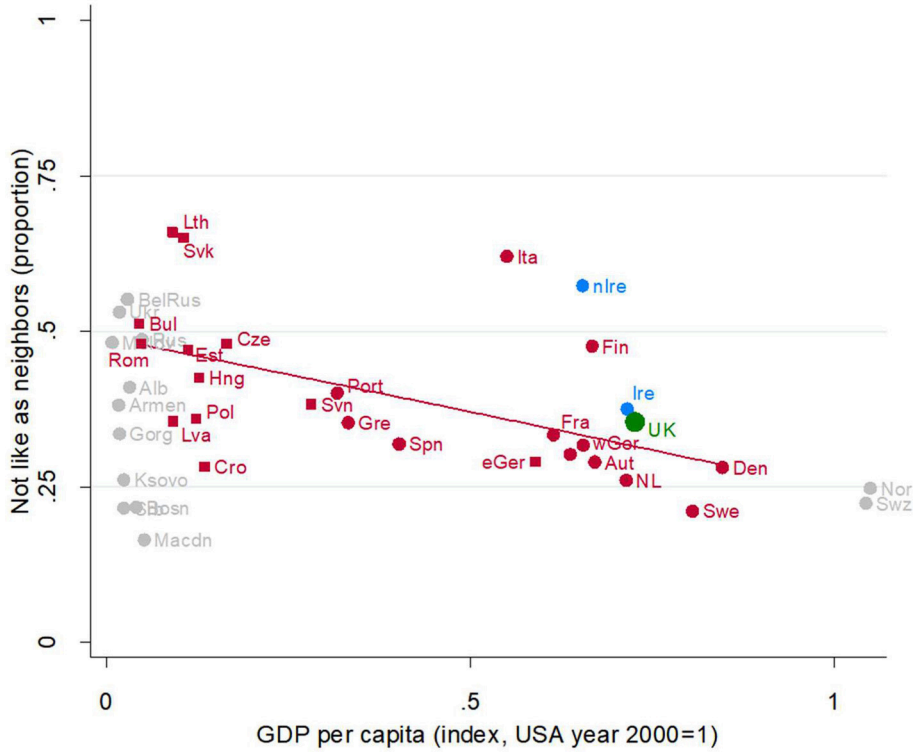

FIGURE 6 | Prejudice against Gypsies. Attitude in the UK (green), in other English-speaking nations (blue), in EU nations (red squares for ex-Communist, circles for others), and other nations (gray). Fit line just for the EU, excluding the UK. GDP per capita (index, USA year 2000 = 1). Source: World Value/European Value Studies 1981–2014 (105, 258 individuals for this analysis).

Its green dot (partially obscured, just above Canada) is right on the red regression line representing the relationship between socioeconomic development and prejudice for EU countries. This is also very close to the level of prejudice in the US and other Anglophone countries.

Prejudice Against Gypsies

But at least one ethnic group faces more prejudice: Gypsies. Nearly 40% of UK people would object to a Gypsy neighbor (**Figure 6**, green dot, partially obscured, near Ireland). That is nearly twice as many as would object to a Muslim neighbor. In this, they are again similar to their EU peers at the same level of development—a bit higher than the Austrians and the Dutch, a bit lower than the Finns.

There is a strong development gradient, from prejudice levels around 50% among the poorest EU nations dropping to around 25% in the richest. This question was only asked in Europe (including Russia), so there are fewer possible comparisons to other nations.

Outside the general pattern, a few countries have distinctively high levels of prejudice against Gypsies: Over 60% of Slovaks would object to a Gypsy neighbor, as would over 60% of Lithuanians and Italians. Unusually for normally tolerant Anglophone nations, the Northern Irish are quite prejudiced, almost as prejudiced as the Italians.

The UK Has Ordinary Levels of Anti-immigrant Worker Prejudice for Its Level of Socioeconomic Development

Consider first, how much prejudice against immigrant/foreign workers there is in the UK compared to peer countries in the EU. About 15% of UK residents would object to having a foreign worker as a neighbor (green dot in **Figure 7**, partially obscured between Austria and Sweden). This level of prejudice is exactly where we would expect an EU country at the UK level of socioeconomic development to be (the green dot sits right beside the red regression line). Thus, the UK is very similar to its peer EU countries in the prevalence of prejudice against immigrant/foreign workers. Turning to the other English-speaking countries, UK residents are fractionally more prejudiced against immigrant/foreign workers than are denizens of the other Anglophone societies, Northern Ireland excepted (compare the green dot to the blue dots).

Prejudice against immigrant/foreign workers gently declines with socioeconomic development (red regression line). Its high point is in Bulgaria, Czechia, Estonia, Lithuania, Romania, and Slovakia (with GDP per capita around 10% of US levels). There a bit over 20% object to foreign workers as neighbors. Prejudice falls slowly as GDP rises, possibly flattening out at 10–15% where GDP approaches US levels, e.g., Italy, France, Germany, Denmark. Thus, in terms of prejudice against immigrant/foreign

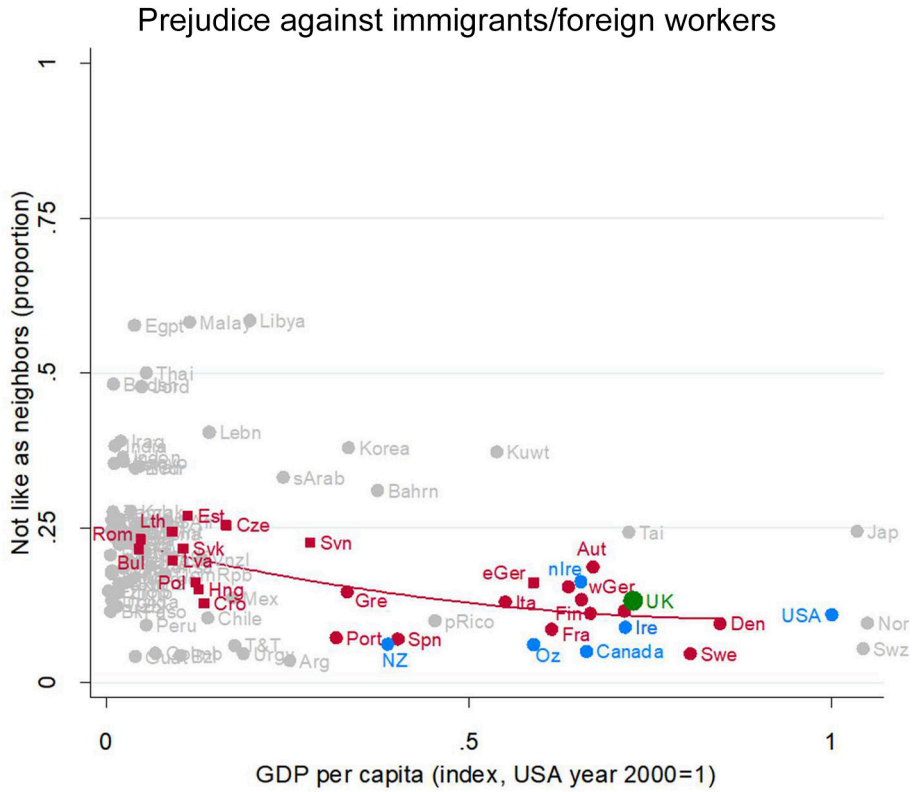

FIGURE 7 | Prejudice against immigrants/foreign workers. Attitude in the UK (green), in other English-speaking nations (blue), in EU nations (red squares for ex-Communist, circles for others), and other nations (gray). Fit line just for the EU, excluding the UK. GDP per capita (index, USA year 2000 = 1). Source: World Value/European Value Studies 1981–2014 (449, 329 individuals for this analysis).

workers, differences among EU countries, rich and poor, are rather small, and the UK is not different from the others.

But this does not mean that prejudice against immigrant/foreign workers has been tamed like an alcoholic uncle locked out of the liquor cabinet. Instead, there are clear changes over time, varying from nation to nation (a matter to which we will return).

One Ethno-Religious Prejudice or Many?

Thus, the UK looks like an absolutely stock standard EU country at its level of development when it comes to prejudice against each of these religious and ethnic groups. There is no sign that international labor mobility poses more of a problem to UK residents than to their EU peers.

The strong similarity of the patterns of prejudice across several of these ethnic and religious groups poses the question of whether ethno-religious prejudice is really one general attitude or many specific attitudes. There is a large literature on the matter (Semyonov et al., 2006; Cohrs and Asbrock, 2009; Scheepers and Eisinga, 2015).

To address this question, we turn to a structural equation model that will provide us with an assessment of whether it is reasonable to consider ethno-religious prejudice as a single dimension—that is a single underlying variable which all our explicit measures reflect—or whether specific prejudices are different. It will also give us a regression analysis revealing the degree to which prejudice is shaped by social location. We will restrict the prejudice variables in this analysis to those that were asked in most of the EU and Anglophone countries, so omitting results for Gypsies, Jews, and Hindus (details in **Appendix B**).

Ethno-religious prejudice is probably a single attitude, as shown by the measurement model results in the first column of **Table 1**. The confirmatory factor loadings are all substantial: 0.64–0.70. This is consistent with much previous research on the dimensionality of ethno-religious prejudice (Evans and Kelley, 1991; Agnew et al., 2000; Scheepers et al., 2002; Cohrs and Asbrock, 2009; Gorodzeisky and Semyonov, 2015). But ethno-religious prejudice is clearly distinct from prejudice on moral issues (for example, attitudes to homosexuals) and distinct from prejudice on political grounds (for example, hostility to right wing extremists). This is shown by a second confirmatory factor analysis (shaded loadings in the second column of **Table 1**).

This model extends the range of variables to include one which is most explicitly at the heart of the labor mobility policy question: prejudice toward immigrant workers. The key point for present purposes is that prejudice against immigrant workers is a manifestation of a more general ethno-religious prejudice rather than a specific attitude about immigrant

TABLE 1 | Alternatives to many separate prejudices, (1) a wider ethno-religious prejudice, or (2) a very broad in-group vs. out-group prejudice.

Target of prejudice:	Alternative 1: Ethno-religious prejudice	Alternative 2: A broader in-group vs. out-group prejudice
Immigrants/foreign workers	0.68	0.68
People of a different race	0.70	0.69
Muslims	0.65	0.66
People of a different religion	0.64	0.64
Homosexuals	–	0.30
Right wing extremists	–	0.29

Goodness of fit measures not available because missing values are imputed. Confirmatory factor loadings from structural equation analyses. Missing values imputed by maximum likelihood. World Value/European Values Studies, 1981-2014. N = 481,515.

workers *per se*. This finding aligns with the ethnicity-as-cognition theory's hypothesis that ethno-religious attitudes are a coherent component of people's worldviews/schemas rather than isolated attitudes reflecting either specific experiences or historical circumstances (Brubaker et al., 2004). Imagine a 3-dimensional map with one "region" being ethno-religious prejudices: the whole region is flat (little or no prejudice) for some people, a midlevel mesa for others, and an alpine plateau for others. The whole region moves up and down together.

In almost all nations, correlations among ethno-religious prejudice items are high (**Table 2**, columns 4–9, below). This is especially true for the correlations between prejudice against immigrants and prejudice against other races, a pair of questions asked in almost all nations (column 4). Correlations between prejudice against immigrants and prejudice against "other religions" are equally high (column 8), although that pair of questions was not asked in quite as many nations. So too for the correlations between prejudice against immigrants and prejudice against Muslims (column 5), between prejudice against immigrants and against "other religions" (column 6), and between prejudice against other races and against Muslims. Unfortunately, we have little evidence about correlations between prejudice against Muslims and against "other religions" since that pair of questions was rarely asked (column 9).

In all, the pattern of ethno-religious prejudice is reasonably clear in almost all nations where the questions were asked. In the few countries that are highly diverse religiously with substantial numbers of Christians, Muslims, and also other religions, differences between alternative targets of religious prejudice are probably small, but the evidence on this is sparse (**Table 2**, column 9). Australian evidence from a large, representative national sample suggests extremely high correlations between prejudice against various immigrants (Vietnamese. Greek, British, American) but much lower correlations for social minorities (gays, fat people, smokers; Kelley and Kelley, 2016).

We will see later that changes over time in religious prejudice, at least in the UK and the EU, may be a little different than the (mostly small and unsystematic) changes in other forms of prejudice. This raises the possibility that the immigrant/ race/ethnic components of prejudice may be somewhat different than the religious components.

By far the strongest effect on this latent ethno-religious prejudice variable is socioeconomic development as indexed by GDP per capita, as shown by the standardized coefficient of −0.17 (**Table 3**). The other national context characteristic we included is UK residence. Importantly for our purposes, the results demonstrate that the UK is not an outlier: UK residents hold ethno-religious prejudices no stronger than their peers in other countries at the same level of development. If anything, they are fractionally less prejudiced than are otherwise comparable people in equally developed countries, but the effect too weak to highlight. The standardized coefficient is statistically significant, but its strength is in the too-weak-to-matter zone under 0.05. Moreover, the metric effect (in green) is extremely small. A reasonable verdict would be "not substantially different, perhaps a hair less prejudiced."

Turning to the individual-level characteristics, education is the most important of the personal influences on ethno-religious prejudice with a standardized coefficient of −0.07. There is some doubt that the education effect is genuinely causal, with an alternative possibility being that both educational attainment and ethnic tolerance reflect the cultural stance of the family of origin (Lancee and Sarrasin, 2015). We take no position on that issue, as education is just a control variable in this model.

Note that these results are consistent with traditional sociological theory positing that development and education undermine prejudice (Allport and Kramer, 1946; Parsons, 1964). But note also that neither of them is a really large effect: Education's effect is near the top of the conventional weak-but-worth-keeping-in-mind range (absolute value of 0.05–0.10) and GDP is in the moderately strong range (absolute value of 0.10–0.20).

The other personal characteristics' effects are significantly different from zero (this is a very large sample), but are in the nugatory, too-weak-to-matter range (significant, but absolute value of the standardized coefficient <0.05). Otherwise put, age, relative income, and religious belief all have probably real but negligibly weak effects on ethno-religious prejudice. Gender differences also are significant and too weak to matter (Rustenbach, 2010).

Changes Over Time: Is Ethno-Religious Prejudice Increasing?

Thus, prejudice against immigrant/ foreign workers and against other races are thus just two of several aspects of a more general ethno-religious prejudice. But they are nonetheless worth examining on its own as they are emerging as the articulated, explicit aspect, thought by many commentators to be a divisive issue separating the UK from the rest of the EU, and important in current political discussion in many economically developed nations, including the USA. We will return to the explicitly religious aspects of prejudice in a moment.

TABLE 2 | In the UK and most other developed nations mean levels of prejudice against immigrants and against other races are low (under 15% objecting to minorities as neighbors; column 3).

Rank (mean prejudice)	Nation (UN code)	Prejudice scale (immigrants & race)	Correlations among ethno-religious prejudice items[a]						Cases (for the correlation in col._4)
			Immigrants & other races	Immigrants & Muslims	Immigrants & other religions	Other races & Muslims	Other races & other religions	Muslims & other religions	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
–	**All nations (pooled)**	**0.18**	**0.48**	**0.47**	**0.42**	**0.43**	**0.48**	**0.33**	**442,801**
1	032. Argentina	0.03	0.37	0.39	0.16	0.45	0.13	..	6,398
2	780. Trinidad & Tobago	0.03	0.24	..	0.29	..	0.21	..	2,001
3	076. Brazil	0.04	0.46	..	0.37	..	0.45	..	4,768
4	170. Colombia	0.04	0.33	..	0.30	..	0.28	..	1,512
5	554. New Zealand	0.04	0.39	..	0.22	..	0.34	..	2,996
6	858. Uruguay	0.05	0.59	..	0.40	..	0.38	..	3,000
7	320. Guatemala	0.05	0.10	0.12	..	0.13	..	..	1,000
8	036. Australia	0.05	0.47	..	0.27	..	0.32	..	6,174
9	124. Canada	0.06	0.49	0.47	0.49	0.37	0.39	0.30	7,005
10	756. Switzerland	0.06	0.50	0.34	0.50	0.35	0.56	..	5,107
11	752. Sweden	0.06	0.60	0.47	0.42	0.43	0.47	0.35	7,421
12	630. Puerto Rico	0.08	0.40	..	..	..	..	..	1,884
13	724. Spain	0.08	0.52	0.55	0.23	0.55	0.32	..	13,920
14	**840. United States**	**0.09**	**0.38**	**0.48**	**0.16**	**0.40**	**0.51**	**..**	**10,378**
15	250. France	0.09	0.50	0.60	..	0.50	..	..	5,297
16	208. Denmark	0.09	0.51	0.52	..	0.48	..	..	4,494
17	152. Chile	0.09	0.57	0.50	0.37	0.50	0.44	..	5,700
18	604. Peru	0.10	0.47	0.56	0.31	0.51	0.34	..	5,422
19	578. Norway	0.10	0.60	0.56	0.26	0.50	0.38	..	5,523
20	528. Netherlands	0.11	0.48	0.50	0.23	0.49	0.28	..	7,702
21	222. El Salvador[b]	0.11	..	..	..	..	..	..	0
22	372. Ireland	0.11	0.44	0.51	..	0.42	..	..	4,012
23	**826. United Kingdom**	**0.11**	**0.47**	**0.57**	**0.14**	**0.49**	**0.26**	**..**	**6,222**
24	854. Burkina Faso	0.11	0.52	..	0.44	..	0.41	..	1,534
25	620. Portugal	0.11	0.44	0.41	..	0.47	..	..	3,697
26	348. Hungary	0.12	0.40	0.44	0.23	0.41	34.00	..	4,155
27	716. Zimbabwe	0.13	0.51	0.44	0.35	0.39	0.33	..	2,502
28	**276. Germany**	**0.13**	**0.45**	**0.41**	**0.33**	**0.32**	**0.40**	**0.23**	**14,564**
29	380. Italy	0.13	0.61	0.57	0.47	0.56	0.52	..	7,784
30	246. Finland	0.14	0.50	0.49	0.50	0.38	0.55	..	5,718
31	860. Uzbekistan	0.14	0.35	..	0.35	..	0.28	..	1,500
32	909. Northern Ireland	0.14	0.53	0.64	..	0.57	..	..	2,047
33	484. Mexico	0.15	0.44	0.43	0.43	0.37	0.42	..	10,827
34	191. Croatia	0.15	0.49	0.52	0.24	0.50	0.37	..	3,564
35	158. Taiwan	0.15	0.40	..	0.29	..	0.41	..	3,245
36	300. Greece	0.15	0.51	0.49	..	0.43	..	..	2,629
37	**156. China**	**0.15**	**0.46**	**0.48**	**0.35**	**0.31**	**0.39**	**..**	**7,791**
38	070. Bosnia Herzg.	0.15	0.41	0.36	..	0.52	..	..	2,639
39	804. Ukraine	0.15	0.43	0.47	0.42	0.33	0.37	..	7,931
40	834. Tanzania	0.16	0.46	0.44	..	0.34	..	..	1,171

(Continued)

TABLE 2 | Continued

Rank (mean prejudice)	Nation (UN code)	Prejudice scale (immigrants & race)	Correlations among ethno-religious prejudice items[a]						Cases (for the correlation in col._4)
			Immigrants & other races	Immigrants & Muslims	Immigrants & other religions	Other races & Muslims	Other races & other religions	Muslims & other religions	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
41	231. Ethiopia	0.16	0.53	..	0.58	..	0.52	..	1,500
42	800. Uganda	0.16	0.52	0.51	..	0.38	..	..	1,002
43	056. Belgium	0.16	0.54	0.57	..	0.49	..	..	7,350
44	643. Russia	0.16	0.40	0.47	0.33	0.43	0.43	..	12,437
45	616. Poland	0.16	0.49	0.55	0.45	0.48	0.47	..	6,639
46	586. Pakistan	0.16	0.15	..	0.05	..	0.17	..	3,200
47	040. Austria	0.17	0.52	0.51	..	0.49	..	..	4,431
48	398. Kazakhstan	0.17	0.20	..	0.22	..	0.35	..	1,500
49	112. Belarus	0.17	0.44	0.49	0.31	0.46	0.38	..	7,069
50	428. Latvia	0.18	0.33	0.41	0.42	0.39	0.20	..	4,546
51	688. Serbia	0.18	0.51	0.51	..	0.46	..	..	3,797
52	214. Dominican Rep.	0.18	0.61	..	..	..	..	..	417
53	710. South Africa	0.19	0.25	0.39	0.18	0.38	0.38	..	13,968
54	891. Serbia & Montg.	0.19	0.49	..	0.40	..	0.48	..	1,220
55	504. Morocco	0.19	0.39	..	0.29	..	0.35	..	3,646
56	862. Venezuela	0.19	0.50	..	0.58	..	0.54	..	2,400
57	646. Rwanda	0.20	0.72	..	0.72	..	0.67	..	3,034
58	914. Bosnia	0.21	0.32	..	0.34	..	0.76	..	800
59	608. Philippines	0.21	0.39	0.30	0.39	0.32	0.38	..	3,600
60	498. Moldova	0.22	0.36	0.41	0.36	0.35	0.30	..	4,508
61	788. Tunisia	0.22	0.51	..	0.48	..	0.36	..	1,205
62	392. Japan	0.22	0.62	0.52	0.40	0.41	0.38	..	4,658
63	705. Slovenia	0.22	0.60	0.67	0.50	0.66	0.55	..	6,438
64	703. Slovakia	0.22	0.37	0.45	..	0.44	..	..	5,377
65	288. Ghana	0.23	0.45	..	0.45	..	0.42	..	3,086
66	807. Macedonia	0.23	0.51	0.59	..	0.50	..	..	3,533
67	100. Bulgaria	0.23	0.47	0.47	0.45	0.45	0.47	0.51	5,465
68	203. Czech Republic	0.23	0.41	0.46	..	0.45	..	..	7,802
69	466. Mali	0.24	0.56	..	0.47	..	0.53	..	1,534
70	642. Romania	0.24	0.51	0.57	0.53	0.52	0.47	..	8,035
71	233. Estonia	0.24	0.47	0.50	0.38	0.43	0.40	..	6,007
72	566. Nigeria	0.24	0.43	0.26	0.45	0.29	0.36	..	6,778
73	440. Lithuania	0.24	0.34	0.42	..	0.35	..	..	4,518
74	031. Azerbaijan	0.25	0.48	..	0.39	..	0.34	..	3,004
75	008. Albania	0.25	0.45	0.54	0.42	0.41	0.31	..	3,346
76	417. Kyrgyzstan	0.25	0.50	0.48	0.46	0.46	0.41	..	2,543
77	268. Georgia	0.26	0.51	0.61	0.44	0.42	0.42	..	6,126
78	894. Zambia	0.28	0.26	..	0.22	..	0.34	..	1,500
79	915. Kosovo	0.29	0.47	0.31	..	0.30	..	..	1,453
80	012. Algeria	0.29	0.40	..	0.35	..	0.27	..	2,482
81	051. Armenia	0.30	0.46	−0.07	0.30	−0.18	0.37	..	4,561
82	364. Iran	0.31	0.32	..	0.38	..	0.39	..	5,196
83	048. Bahrain	0.32	0.06	..	0.22	..	0.14	..	1,200
84	414. Kuwait	0.33	0.32	..	..	..	..	..	1,303

(Continued)

TABLE 2 | Continued

Rank (mean prejudice)	Nation (UN code)	Prejudice scale (immigrants & race)	Correlations among ethno-religious prejudice items[a]						Cases (for the correlation in col._4)
			Immigrants & other races	Immigrants & Muslims	Immigrants & other religions	Other races & Muslims	Other races & other religions	Muslims & other religions	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
85	792. Turkey	0.33	0.51	0.09	0.50	0.21	0.59	..	12,815
86	704. Viet Nam	0.34	0.64	0.41	0.74	0.42	0.63	..	2,495
87	218. Ecuador	0.34	0.66	..	0.62	..	0.74	..	1,202
88	360. Indonesia	0.34	0.57	..	0.52	..	0.59	..	3,003
89	368. Iraq	0.34	0.20	..	0.21	..	0.30	..	1,200
90	410. South Korea	0.35	0.62	0.37	0.45	0.27	0.44	..	5,821
91	422. Lebanon	0.37	0.29	..	0.22	..	0.34	..	1,200
92	458. Malaysia	0.37	−0.06	..	−0.04	..	0.67	..	2,500
93	682. Saudi Arabia	0.37	0.32	..	0.45	..	0.38	..	1,502
94	887. Yemen	0.37	0.45	..	0.39	..	0.38	..	1,000
95	764. Thailand	0.38	0.35	..	0.40	..	0.43	..	2,712
96	**356. India**	**0.39**	**0.35**	**0.35**	**0.39**	**0.38**	**0.46**	**..**	**10,124**
97	400. Jordan	0.40	0.39	..	0.37	..	0.43	..	3,623
98	050. Bangladesh	0.44	0.52	..	0.47	..	0.58	..	3,025
99	818. Egypt	0.46	0.38	..	..	..	..	..	3,000
100	434. Libya	0.56	0.42	..	0.43	..	0.41	..	2,131

[a] *All correlations are significantly different from zero at $p < 0.001$.*

[b] *El Salvador asked only one prejudice question, prejudice against other religions, so its mean is based on that.*

In almost all nations correlations among ethno-religious prejudice items are high (columns 4–9), suggesting there are not many separate prejudices but instead a single ethno-religious prejudice. Pairwise present correlations for all available data (not every question was asked in every survey); all correlations are statistically significant at $p < 0.001$. Nations ranked from least prejudiced to most prejudiced. EU nations in red and English-speaking nations in blue. World Value/European Value Studies, 1981–2014. Illustrative countries are bolded.

In the UK, most other Northern European nations, and the US there are no simple linear changes over time in prejudice against immigrants or against other races between 1981 and 2014 (**Table 4**). Changes over time in other nations show no clear pattern: In some prejudice against immigrants and against other races increases (positive) and in others it decreases (negative). This is after adjusting for age, gender, religious belief, education, and income.

Specifically, prejudice has dropped sharply in South Korea, Mexico, several Balkan nations in the EU, and in (authoritarian and famously racist) China. But it has increased in (democratic) India and South Africa as well as in Russia and several Eastern European nations that are outside the EU.

Rather than the simple linear patterns of change in **Table 4**, looking at more complex patterns of change leaves the picture equally diverse. We do this in the usual way by including a quadratic term in the model, year squared, which caters for a wide variety of patterns with a single inflection point (details in **Appendix B**). These results (not shown in detail but available on request) show no clear change in some nations (UK, USA); sharp declines in prejudice (China, Mexico); increasing prejudice particularly in recent years (Russia, India); and a clear U-shaped pattern with prejudice at first declining, bottoming out around the turn of the century, and then increasing in recent years (Germany, Netherlands).

Prejudice specifically against Muslims shows a somewhat different pattern[1]. In the UK it was already low in the 1980s when our data begin, fractionally lower than in other EU nations. It has declined slowly since then (see also Storm et al., 2017) and is now somewhat lower than in the rest of the EU—not a lot lower but clearly lower (**Figure 8**). So insofar as prejudice against Muslims contributes to hostility to the EU (which it does, slightly), Brexit is not the end of the story but merely the beginning.

For the rest of the EU outside the UK, prejudice specifically against Muslims has not, on the whole, changed much between 1980 and 2010. But there is a small, statistically significant curvilinear patterns (joint *t*-test for year of survey and its square: $F_{(2,\ 3{,}925)} = 4.18$, $p < 0.05$). Prejudice against Muslims was not particularly great in the EU around 1980 and declined slowly up to the mid-1990s (**Figure 8**). But then it has likely begun to increase, again reaching its 1980 level around 2005. The natural projection would then be even greater prejudice in subsequent years. Consistent with this, Pew Research Center survey data for changes between 2015 and 2016 also show an increase in

[1] These results are from individual-level OLS estimates predicting prejudice from year of survey and year squared, controlling for gender, age, education, and religious belief. For the UK there are too few time periods to control for GDP per capita. For comparability GDP is also omitted for the EU nations; multilevel estimates including it are almost identical save perhaps for a fractionally sharper upturn in prejudice in recent years. Further details are available on request.

TABLE 3 | Influences on ethno-religious prejudice.

	Standardized effect	Significance, z
UK (0 or 1)		
Standardized effect	−0.004	−2.1, $p < 0.05$
Metric effect	−0.008	–
GDP per capita in current dollars, year 2000	−0.17	−91.1, $p < 0.001$
Male (0 or 1)	0.03	16.0, $p < 0.001$
Age (years)	0.02	9.9, $p < 0.001$
Education (years)	−0.07	−34.9, $p < 0.001$
Family income (relative to rest of nation)	−0.02	−12.3, $p < 0.001$
Religious belief (4 item scale, alpha reliability = 0.84, scored low to high)	0.04	24.2, $p < 0.001$

Standardized (except where indicated) effect parameters from a structural equation analysis (missing data imputed by maximum likelihood). Metric effect in green. World Value/European Values Studies, 1981–2014. N = 481,515.
*Goodness of fit for an analogous model where missing values are not imputed (see **Appendix**): Root mean squared error of approximation, RMSEI = 0.02; Comparative Fit Index, CFI = 0.985.*

unfavorable views of Muslims both in less tolerant EU nations (Italy, Poland, Greece, Spain) and in more tolerant France and Germany. Unlike our estimates they also show an increase in the (very tolerant) UK, from 19% unfavorable to 28% unfavorable (Pew Research Center, 2016).

Results, Part 2: Sensitivity Tests

Above Results Hold With Different Prejudice Measures and Other Survey Datasets

All research risks over-specificity, that the findings reflect idiosyncratic features of the particular questions we use rather than the concept we hope to measure, or idiosyncratic features of the dataset being analyzed. This makes it a priority to discover the degree to which the findings are robust across questions and datasets (Pautasso, 2010; John et al., 2012).

Sensitivity test #1: a different prejudice measure shows the same pattern

Consider first the WVS/EVS question on willingness to discriminate against foreigners in employment. In a different part of the questionnaire, the WVS/EVS asked: "Do you agree, disagree or neither agree nor disagree with the following statements? When jobs are scarce, employers should give priority to people of this country over immigrants." The answer options were: "1. Agree," "2. Neither," and "3. Disagree." There are 146,096 cases with valid data on this question.

For willingness to discriminate, like neighboring prejudice, there is a clear connection with GDP in the EU countries (**Figure 9**, red line and red dots): The higher the GDP, the lower the willingness to discriminate. Willingness to discriminate in the UK is not at all unusual for an EU country at its level of socioeconomic development: The UK's green dot is very near

TABLE 4 | There are no clear changes over time in prejudice in the UK or most other Northern European nations.

Nation (UN code)	Change in prejudice, 1990 to 2020		EU_xUK	Anglo
	Amount	Significance		
410. South Korea	−0.33	$p < 0.001$	0	0
705. Slovenia	−0.31	$p < 0.001$	1	0
100. Bulgaria	−0.28	$p < 0.001$	1	0
484. Mexico	−0.27	$p < 0.001$	0	0
703. Slovakia	− 0.19	$p < 0.001$	1	0
156. China	**− 0.18**	**$p < 0.001$**	0	0
642. Romania	− 0.14	$p < 0.001$	1	0
152. Chile	−0.13	$p < 0.001$	0	0
056. Belgium	− 0.09	$p < 0.001$	1	0
348. Hungary	− 0.09	$p < 0.001$	1	0
616. Poland	− 0.09	$p < 0.001$	1	0
554. New Zealand	− 0.07	$p < 0.001$	0	1
578. Norway	−0.06	$p < 0.001$	0	0
032. Argentina	−0.05	$p < 0.001$	0	0
604. Peru	−0.04	$p < 0.05$	0	0
124. Canada	−0.02	$p < 0.05$	0	1
250. France	−0.02	ns	1	0
276. Germany	**− 0.01**	**ns**	1	0
246. Finland	−0.01	ns	1	0
428. Latvia	−0.01	ns	1	0
752. Sweden	0.00	ns	1	0
826. United Kingdom	**0.00**	**ns**	**0**	**1**
208. Denmark	0.01	ns	1	0
724. Spain	0.01	ns	1	0
036. Australia	0.02	$p < 0.01$	0	1
528. Netherlands	0.02	$p < 0.05$	1	0
840. United States	**0.02**	**$p < 0.001$**	0	1
756. Switzerland	0.03	$p < 0.01$	0	0
909. Northern Ireland	0.04	ns	0	1
203. Czech Republic	0.07	$p < 0.001$	1	0
792. Turkey	0.09	$p < 0.001$	0	0
440. Lithuania	0.10	$p < 0.001$	1	0
380. Italy	0.10	$p < 0.001$	1	0
372. Ireland	0.11	$p < 0.001$	1	1
804. Ukraine	0.16	$p < 0.001$	0	0
356. India	**0.18**	**$p < 0.001$**	0	0
233. Estonia	0.23	$p < 0.001$	1	0
498. Moldova	0.26	$p < 0.001$	0	0
710. South Africa	0.27	$p < 0.001$	0	0
643. Russia	0.34	$p < 0.001$	0	0
268. Georgia	0.39	$p < 0.001$	0	0
112. Belarus	0.43	$p < 0.001$	0	0

*Changes over time in other nations show no clear pattern. Estimated increase (positive) or decrease (negative) in mean prejudice against immigrants and against other races between 1990 and 2020. Predicted values from country-by-country OLS regression estimates controlling for age, gender, religious belief, education, and income; units are the same as in **Table 2**, column 3. Only nations with 4 or more surveys. Number of cases shown in **Appendix Table A1**. EU nations in red and English-speaking nations in blue. World Value/ European Value Studies, 1981–2014. Illustrative countries are bolded.*

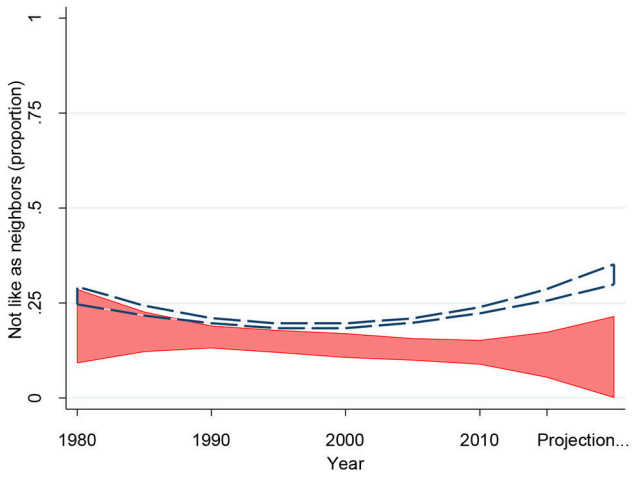

FIGURE 8 | Changes over time in EU prejudice against Muslims. In the 1980s prejudice was relatively low in the UK almost as low in the rest of the EU. In the UK it then declined slowly up to the present. In the rest of the EU it also declined slowly up to the mid-90s but then has begun to increase again. Nighty five percent of confidence intervals from OLS regressions controlling age, sex, education, income, and religious belief. UK in red ($N = 3{,}932$) and the rest of the EU outlined in dashes ($N = 100{,}325$). Results after 2014 are projections from the earlier patter; details in the technical **Appendix**. Source: World Value/European Value Studies pooled file, 1981-2014.

the regression line for EU countries, very similar to Belgium, and (former) West Germany (red dots). Turning to resemblance to the other Anglophone countries, the UK (green dot) is a very similar to the US and New Zealand, possibly fractionally higher than Australia and Canada and somewhat lower than Ireland (blue dots).

Thus, on this alternative measure, the UK is very similar to its peer countries in the EU. This substantiates the view that the close resemblance of the UK to other prosperous EU countries in terms of prejudice is real, rather than being an artifact of the particular neighboring questions analyzed above.

Sensitivity test #2: another prejudice measure in a different dataset shows the same pattern

Data for a second sensitivity test are from a well-known high-quality dataset, the European Quality of Life Survey, covering the European Union and a few nations in the process of applying. It is fully described on its website, www.eurofound.europa.eu. We analyze the 29 nations with populations over 1 million in the 2011–2012 wave; all are representative national samples. There are 66,795 respondents with the relevant information.

The question was, "How about people from other countries coming here to live and work? Which one of the following do you think the government should do?" The answer options were, "Let anyone come who wants to," "Let people come as long as there are jobs available," "Put strict limits on the number of foreigners who can come here to work," "Prohibit people coming here to work."

Analyses of differences between the UK and other nations, controlling GDP per capita and year of survey, are shown in **Table 5**, and compared to our previous analysis.

The UK is not distinctive in any of these alternative analyses (row 1, highlighted). All the UK dummy variable effects are non-significant at $p < 0.05$. The results are from multilevel regressions, specifically variance-components models with individual-level fixed effects and random intercepts, estimated by GLS.

These replications also suggest that the pattern of prejudice declining with socioeconomic development may be rather general—it is statistically significant in both replications—but of varying magnitude. In Sensitivity Test #1, the decline is much larger than in our main model, but in Sensitivity Test #2 it is still significant, but smaller in magnitude.

The crucial point for present purposes is that the UK closely resembles peer countries in the EU using different questions and different datasets. That inspires confidence that the resemblance is real.

Furthermore, we included the percent of immigrants as a country-level variable in the model. In a multilevel analysis (estimated, like the previous models in STATA's xtreg via GLS with fixed effects and random intercepts) of the 48 countries with available data, with 64,865 individual cases. The effect was not statistically significant ($Z = -0.19$; $p = 0.847$). Including this higher-level variable did not change the GDP effects. This is not necessarily strong evidence against the Contact Hypothesis: (1) contact may reduce prejudice as much prior research suggests (Hewstone and Swart, 2011), but status threat effects (Davidov and Semyonov, 2017) may also be present at the same time and they may cancel each other out; (2) the national percent of immigrants is, at best, a weak indicator of contact, because residential and social segregation may severely restrict social interaction.

DISCUSSION

Summary: Public Attitudes Toward Migrants Symptomatize a Syndrome of Attitudes Toward Minority Ethno-Religious Groups; Socioeconomic Development Is a Major Determinant of Ethno-Religious Prejudice; The UK Is Not Exceptional; Prejudice on the Rise in Some Countries (India, Russia), Stable in Some (UK, Germany), and Declining in Others (China, Mexico)

All these results point to the UK as being a very typical prosperous EU country when it comes to ethno-religious prejudice generally, and specifically to prejudice against immigrant/foreign workers. A well-established indicator of prejudice—the desire to shun a certain type of person as a neighbor—shows that the British levels of prejudice against immigrant/foreign workers and people "of a different race," Hindus, Jews, Gypsies, and especially Muslims are all relatively

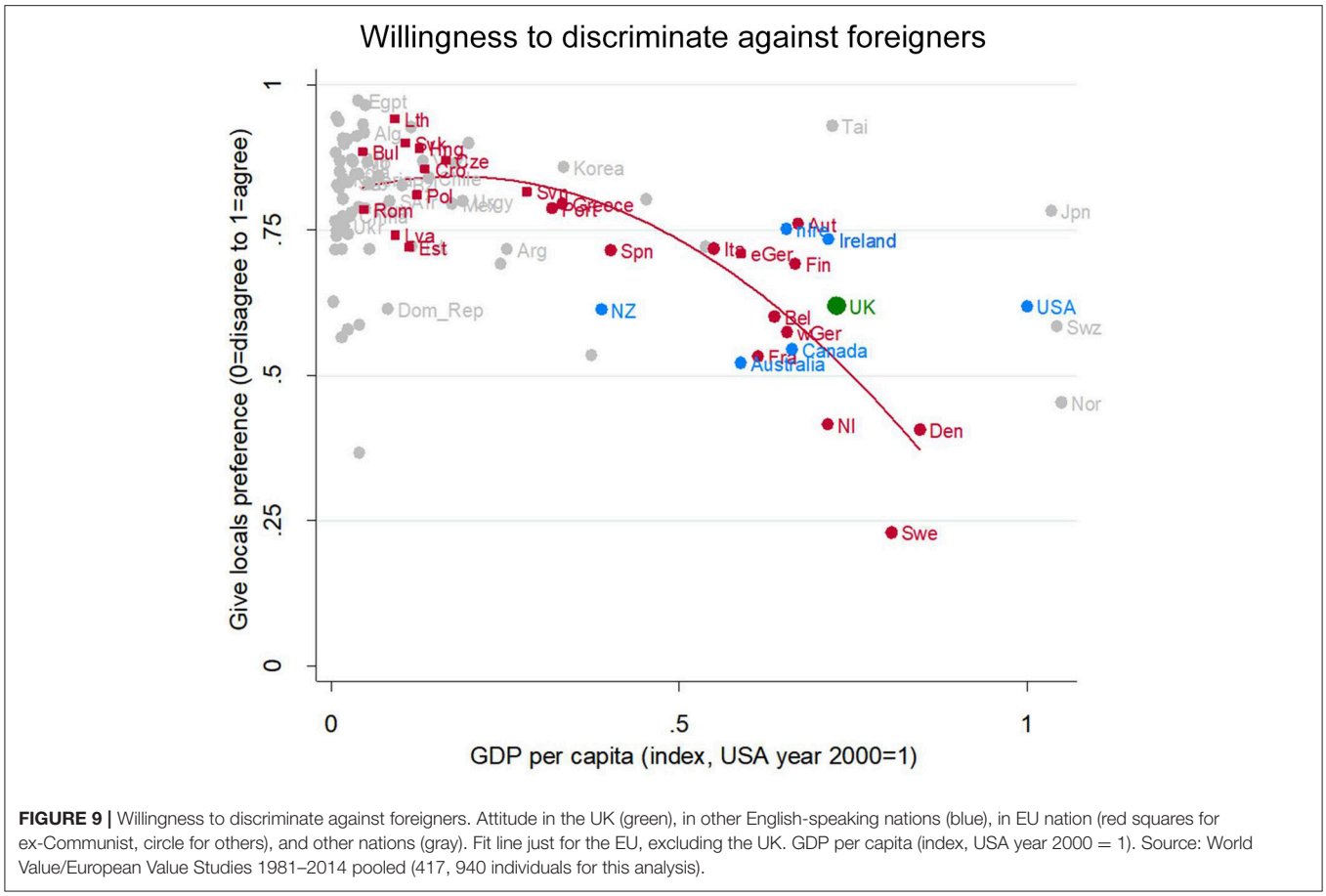

FIGURE 9 | Willingness to discriminate against foreigners. Attitude in the UK (green), in other English-speaking nations (blue), in EU nation (red squares for ex-Communist, circle for others), and other nations (gray). Fit line just for the EU, excluding the UK. GDP per capita (index, USA year 2000 = 1). Source: World Value/European Value Studies 1981–2014 pooled (417, 940 individuals for this analysis).

TABLE 5 | Sensitivity tests: (#1) Different measure of discrimination, same data set; (#2) yet another measure of discrimination and an entirely different dataset.

	Original analysis	**Test #1**	**Test #2**
	Question: Prejudice against Immigrants/ foreign workers	Question: Willingness to discriminate against foreigners	Question: Favor restricting immigration
	Data: World Value Study/ European Values Study. 1981–2014. EU and UK.	Data: World Value Study/ European Values Study. 1981–2014. EU and UK.	Data: European Quality of Life Survey, 2011. EU and UK.
UK (0 or 1)	0.01	0.03	0.11
GDP per capita	−0.11***	−0.31***	−0.06*
R-squared	0.01	0.10	0.01
Rho (country variance)	0.02	0.06	0.08
Number of countries	26	26	29
Number of cases	160,695	146,096	66,795

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Metric regression coefficients from multi-level variance components models estimated by GLS. UK and European Union nations only.

low. Moreover, British prejudice levels are just where they would be expected to be based on the general pattern of prejudice and socioeconomic development within the EU. They are also generally close to the other Anglophone countries. We find a general pattern of high prejudice and desire to discriminate in the less advanced countries with a strong decline in these emotions with socioeconomic development (to which the UK conforms) as predicted by the hierarchy of needs/post-materialist approach (Maslow, 1943; Inglehart, 1981; Inglehart and Welzel, 2010).

But it cannot be taken for granted that these largely benign attitudes toward foreign workers will persist or even improve. In some places, net of development, prejudice appears to be decreasing, in others holding steady, and in others increasing. There is no obvious pattern.

Another issue is the explicit desire to discriminate against foreign workers in hiring and employment. If this were an important impediment to collaboration between the UK and the EU, we would expect that the desire to discriminate is

stronger in the UK than elsewhere. But in fact, there is nothing exceptional about the UK in this (Sensitivity Test #1). Nor does the UK show any unusual preference for restricting immigration (Sensitivity Test #2).

Working Hypotheses

The results suggest several working hypotheses to be addressed in future research:

H1: Prejudices against all religious and ethnic outgroups all reflect a single latent ethno-religious prejudice variable.
H2: Ethno-religious prejudice is distinct from prejudices against other outgroups.
H3: Socioeconomic development has a positive, albeit not hugely strong effect increasing ethno-religious tolerance.
H4: The UK is not distinctive in ethno-religious prejudice, net of socioeconomic development and social composition (individual characteristics).

Discussion: Implications of Attitudes Toward Immigrants as a Symptom of a Broader Ethno-Religious Prejudice Dimension

This similarity to the general EU pattern suggests that public opinion in the UK about foreign workers is no more of an obstacle to a common market than is true for other European countries. Thus, if it was one cause of Brexit (as is likely), it is a cause that could apply equally to many other EU nations in future years.

The relatively low levels of prejudice in most of the EU for this whole period are not grounds for complacency. An in-depth study in the Netherlands suggests that exposure to immigrants may have a u-shaped (concave up quadratic; down, then up) effect on prejudice (Havekes et al., 2011), although, in general, there is strong support for the "contact hypothesis" (Hewstone and Swart, 2011). Perhaps the presence of immigrants has strong ambivalent effects, with increasing availability of immigrants as interaction partners reducing prejudice and, at the same time, status threat increasing prejudice (Davidov and Semyonov, 2017): The balance between the two effects may be unstable and could tilt suddenly. If so, rapid changes may occur throughout the EU in the future—sharp drops among the more prejudiced countries and sharp rises among those who have passed the "sweet spot." If public response to immigration was one of the troubles leading the UK to leave the EU, there is fertile ground in public opinion for similar troubles in the years to come in Germany, the Netherlands and perhaps elsewhere.

However, ethno-religious prejudice does not translate directly into party politics not only because it is only one issue among many, but also because all the parties seem to have slightly shifted in an anti-immigrant direction which seems to have preserved adherence to the major parties among mildly prejudiced people (Wagner and Meyer, 2016).

The finding that ethno-religious prejudice is really one attitude with many symptoms suggests important possibilities for beneficial and harmful effects on social cohesion and harmony in the future. In particular, in a kind of extended version of the Contact Hypothesis (Allport, 1979 [1954]; Pettigrew and Tropp, 2006; Hewstone and Swart, 2011) positive contact with a member of one minority group is likely to erode prejudice against members of all ethno-religious minority groups Moreover, this finding, in conjunction with knowledge of the availability heuristic (Tversky and Kahneman, 1973) suggests that terrorist attacks against the majority population by members of any such group would be likely to stimulate prejudice against all potential outgroups in the ethno-religious domain. Moreover, the result that anti-immigrant feeling is really not a separate thing, but rather a symptom of a latent ethno-religious prejudice against a wide variety of such groups reinforces the emerging understanding that issues of framing, national identity, values for cultural distinctiveness, and nonlinear cultural trends play an important role influencing prejudice levels now and possibly an even more important role shaping future trends in prejudice in the advanced societies (Davidov and Semyonov, 2017).

Of course, even though simple issues of status threat seem to be less important than originally thought (Kuntz et al., 2017 and our final sensitivity test), stratification and hierarchy still matter to prejudice (Jasso, 2011, 2014), but perhaps somewhat differently than atomistic economic self-interest theories suggest. The key issue may be the degree to which status as a good and valuable person requires adherence to specific cultural practices: If these are required, that puts such status within the reach of locals even with few economic and cognitive resources; if they are not required—as potentially evidenced by elite tolerance of ethno-religious outgroups or economic success of these outgroups—access to status as a good and valuable person is potentially harder to achieve for locals with few economic and cognitive resources. In other words, the potential link between cultural "tightness" or closure and prejudice may be quite different for members of the dominant group according to their social class/stratification position (Davidov and Semyonov, 2017).

Further grounds for concern are that terrorist attacks of recent years, in addition to their immediate and direct harm, may impair generalized social trust. That matters to the future of European cooperation because social trust influences prejudice (Rustenbach, 2010). Also, to the extent that such incidents are associated in the public mind with any ethnic and or religious group and stimulate prejudice against that group, this could ramify into increased ethno-religious prejudice across the board. On the other hand, ongoing socioeconomic development and advancing educational attainment are likely to reduce prejudice against all potential outgroups in the ethno-religious domain (to the extent that the observed relationships are causal, which is plausible but beyond the scope of the present paper to establish). We have discussed socioeconomic development as indexed by GDP in terms of a Maslowian interpretation (see also Inglehart and Welzel, 2005), but it is also possible that socioeconomic development may enhance tolerance of ethno-religious outgroups by attracting migrants to the country and thereby increasing positive contact and reducing prejudice against all ethno-religious minorities.

All in all, prejudice and willingness to discriminate against foreign workers are relatively low. They are rising

in some European nations—despite a countervailing trend of tolerance increasing with GDP—but not in others. In this, the UK is unexceptional, except perhaps that prejudice against Muslims may be a little lower than in peer countries in the EU. This strongly suggests that Brexit did not come about because the UK's population is distinctively prejudiced and that similar issues may well-arise in other EU nations in future years. The links to right-wing populist politics will continue to demand researchers' attention.

DATA AVAILABILITY

The datasets analyzed in this study can be found at www.worldvaluessurvey.org, www.gesis.org/en/services/data-analysis/international-survey-programs/european-values-study/, and www.eurofound.europa.eu/surveys/european-quality-of-life-surveys.

AUTHOR CONTRIBUTIONS

ME and JK wrote and argued over every part of this paper. It is part of a collaboration on analysis of immigrant issues extending over 35 years. Their contributions are indistinguishable.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fsoc.2019.00012/full#supplementary-material

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The Effects of Perceived Neighborhood Immigrant Population Size on Preferences for Redistribution in New York City: A Pilot Study

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An extensive literature exists hypothesizing a negative association between immigration and a multitude of social goods issues. Recent analyses, however, have established that the perception of the size of the immigrant population may be more relevant than the actual size of the population in shaping attitudes, and that the effect of immigration on social policy attitudes may be more salient at the local—or even neighborhood—level than at the country-level. In extending this work, we examine how perceptions and misperceptions about the size of the immigrant population affect attitudes about redistribution and social policies within one of the most diverse and ethnically heterogeneous immigrant cities in the world, New York City. We analyzed data from a diverse sample of 320 NYC residents recruited through Amazon Mechanical Turk who responded to a series of questions regarding their perceptions of the size of the immigrant population of their neighborhood before indicating their redistributive and social policy preferences. We found that about a quarter of New Yorkers overestimated the size of the non-citizen population, though the proportion was lower than those in studies of other geographic units. In addition, those that perceived a lower citizen proportion or overestimated the size of the non-citizen population were the least supportive of redistribution and social policies. Implications for the existing research on the relationship between immigration and social policy preferences are discussed.

Keywords: preferences for redistribution, social policy preferences, neighborhood diversity, migration, innumeracy

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INTRODUCTION

The transnational movement of people has recently become a highly salient and contested issue in social and political life. In particular, there has been growing tension concerning the hosting of immigrants, which some argue fueled the popularity of right-wing populist parties in Europe and the United States, as well as general exclusionary reactions toward immigrants. Across these distinct national settings, there has been considerable debate regarding citizenship, constructions of national identity, and multicultural diversity with significant ramifications for everyday experience.

A key dimension in these immigrant-relevant debates concerns the overall size of the immigrant population. Indeed, a small cohort of studies suggests that variations in exposure to and perceptions about the size of immigrants and immigration have varying implications for social policy attitudes and related phenomena (Senik et al., 2009; Burgoon et al., 2012; Alesina et al., 2018).

In this paper, we consider the question of how underestimations and overestimations of the size of an immigrant population affect attitudes about redistribution and social policy within the immigrant-rich city of New York City (NYC). We believe our research makes a number of important contributions to the immigration literature. First, we focus on NYC residents' subjective perceptions regarding the size of the immigrant population because objective measures have been shown to have limited direct relevance to welfare state attitudes and attitudes about immigrants, more broadly (Semyonov et al., 2004; Spies and Schmidt-Catran, 2016; Alesina et al., 2018; Gorodzeisky and Semyonov, 2019). Second, we ask respondents about their perceptions regarding the size of both the immigrant (specifically, non-citizens) and citizen populations in research participants' respective neighborhoods, and examine the accuracy of these perceptions by comparing their responses to data from the American Community Survey (United States Census Bureau, 2017). Unlike previous studies that have asked respondents about their perceptions and judgments regarding the size of the immigrant population only, our study will allow us to theoretically test and examine directly whether perceptions of the size of the immigrant and citizen populations vary, as well as the extent to which these perceptions are related to preferences for redistribution and social policies.

Third, while many existing studies have focused on locales experiencing immigration as a new phenomenon, our data come from residents living in NYC, a city with a long history of being the home to people of many different immigrant backgrounds and one of the top destinations for international migrants. Finally, to our knowledge, our research is one of the few studies to examine individuals' perceptions and misperceptions about the size of an immigrant population within much smaller geographic units (e.g., neighborhoods) and how such perceptions are related to attitudes about redistribution and social policies. National or cross-national measures regarding the size of an immigrant population are not ideal indicators as they may be too tangential to people's actual contact with and exposure to immigrants. Indeed, some evidence suggests that smaller geographic units, such as neighborhoods of residence, better capture people's everyday experiences (Dinesen and Sønderskov, 2015; Koopmans and Schaeffer, 2016). Together, we believe our paper adds a number of important dimensions to the literature on immigrant group size and policy preferences. Before presenting the specifics of our study, the next section provides a brief overview of previous research that examines the links between perceptions of proportions of citizens and non-citizens—primarily at the country level—the accuracy of those perceptions, and policy preferences.

IMMIGRATION, PUBLIC SPENDING, AND PREFERENCES FOR REDISTRIBUTION: EXISTING EVIDENCE

In Alesina and Glaeser's (2004) seminal book, the authors contend that large-scale immigration will weaken the welfare state in Europe. Using macro-level indicators across 54 countries, they established a negative association between "racial fractionalization" and social welfare spending. In particular, they find that highly homogenous countries in Europe, like the Nordic countries, had very generous welfare systems, while, highly heterogeneous countries, such as many Latin American countries, had weak welfare states. Following Alesina and Glaeser (2004), a number of studies have critically examined immigration's potential consequences for the welfare state in different contexts using different indicators including fiscal burden, public spending, and attitudes about redistribution (Soroka et al., 2006; van Oorschot, 2006; Brady and Finnigan, 2014). In a study by Soroka et al. (2006), for example, the authors find that across three decades, social spending grew less in nations with higher rates of immigration than in countries with lower immigration rates. Other work has similarly concluded that immigration and ethnic heterogeneity, more broadly, are strong negative predictors of social welfare spending (Sanderson, 2004; Sanderson and Vanhanen, 2004; Vanhanen, 2004). A related set of scholarship has also investigated the association between attitudes about redistribution and the presence of immigrants across various countries and within different states in the United States (Mau and Burkhardt, 2009; Eger, 2010; Brady and Finnigan, 2014; Steele, 2016). Comparing 17 European countries, Mau and Burkhardt (2009) find that countries with higher percentages of a non-Western foreign-born cohort tend to be less supportive of government redistribution. Within the context of the United States, studies have also documented significant negative effects related to the prevalence of immigrants on states' welfare programs (Fox, 2004; Fox et al., 2013).

Other scholarship, however, has reported little to no association between welfare spending or attitudes about redistribution and the presence of and size of immigrant populations (Senik et al., 2009; Hainmueller and Hiscox, 2010). Some empirical work suggests that it is not actual immigration that influences welfare spending and redistribution attitudes, but *how* immigration is perceived and experienced. In line with these ideas, previous research has found that respondents in professions with large portions of immigrants were more supportive of redistribution than respondents in occupations with low shares of immigrants (Burgoon et al., 2012). In contrast, nationally, a high foreign-born population was unrelated to support for redistribution. Similarly, Senik et al.'s (2009) large-scale analysis of 22 European countries found a weak association between immigration and endorsement of government redistribution. They do find, however, that support for the welfare state was weakest among those who were averse to immigrants and express apprehension about the fiscal implications of immigration.

Scholars have also begun to consider the question of how people's perceptions of the number of immigrants are related to redistribution attitudes. These studies draw from a related set of studies that have demonstrated that perceptions of the size of the immigrant population are often distorted and these misperceptions, in turn, are associated with anti-immigrant attitudes (Semyonov et al., 2004, 2006; Herda, 2013; Pottie-Sherman and Wilkes, 2017). Gorodzeisky and Semyonov (2019), for example, find that the more respondents misperceive the size of the immigrant population, the greater their anti-immigrant sentiments. In extending these ideas to attitudes about government redistribution, Alesina et al. (2018) present the results of a large-scale study across six countries (France, Germany, Italy, Sweden, the U.K., and the United States). One of the major contributions of this work and relevant to the present paper was their finding regarding the degree of misperceptions about the number and composition of immigrants and its relationship to redistribution attitudes. Across all countries studied, respondents overestimated the number of immigrants, particularly Muslim immigrants and immigrants from Middle Eastern and North African countries. These misperceptions, in turn, were associated with more negative attitudes toward redistribution.

In summary, there appears to be a distinct set of contextual and individual-level characteristics related to immigration (rising immigration, misperceptions of the size of the immigrant group) and attitudes about redistribution and related phenomena. As noted earlier, there is growing evidence to suggest that the perception of the size of the immigrant population may be more relevant than the actual size of the population in shaping attitudes (Alesina et al., 2018; Gorodzeisky and Semyonov, 2019), and that the effect of immigration on social policies may be more salient at more local or personal levels, than at the national or cross-national level (Fox, 2004; Burgoon et al., 2012; Fox et al., 2013). We evaluate these possibilities in the case of NYC, using data collected via an online survey. We focus on NYC residents' subjective perceptions regarding the size of the immigrant (specifically, non-citizen) and citizen population, and examine the accuracy of these perceptions by comparing their responses to data from the American Community Survey. NYC is a distinct context in which to explore these possibilities because of the city's multilayered history of immigration. According to recent Census data, 40 percent of the NYC population was born outside of the United States. More than 150 countries comprise NYC's immigrant population and immigrants from the Dominican Republic and China are the largest foreign-born groups. The borough of Queens is the most immigrant-dense borough and Elmhurst in Queens has the highest share of immigrants with nearly seventy-five percent of its residents foreign-born. At the same time however, NYC is also very highly segregated residentially with immigrants typically living in ethnic minority or immigrant-dense neighborhoods and U.S. citizens, particularly white U.S. citizens, living in neighborhoods with high proportions of white Americans.

In the present study, we examine specific expectations of perceptions and misperceptions on attitudes about redistribution and social policy. We were first interested in how NYC respondents perceive the size of the immigrant population in their respective neighborhoods. On the basis of studies that have demonstrated that people's perceptions of immigrant populations are often distorted, we hypothesized that people will be more likely to overestimate the size of the immigrant population in their respective neighborhood than to underestimate or accurately estimate (H1). However, it is also possible that our respondents will be less likely than those in other contexts to overestimate the proportion of the immigrant population. Gorodzeisky and Semyonov (2019) suggest that native-born citizens in countries with higher percentages of immigrants, as compared to citizens of "new immigration" countries, have longer experience with migration and may have had more opportunities to develop accurate knowledge regarding the actual size of the immigrant population. In line with these ideas, because New York City has the largest foreign-born population among cities in the United States (and second-largest globally after London) and immigrants have been so entrenched into the fabric of NYC life, NYC residents might perceive their presence as unproblematic and have more defined knowledge regarding their overall size. Therefore, we propose an alternative hypothesis: NYC residents will be less likely (than those in studies of other geographic areas) to overestimate the size of their neighborhood's immigrant population (H2).

We were also interested in whether, and in what way, perceptions and accuracy of perceptions (misperceptions) are associated with redistribution attitudes. Adding to the growing body of literature examining perceptions and misperceptions of the size of the immigrant population and attitudes about redistribution, we hypothesized that those who perceive (regardless of their accuracy) higher proportions of immigrants will be less supportive of redistribution and social policies in comparison to those who perceive lower proportions (H3). Moreover, overestimated perceptions will be associated with lower support for redistribution and social policies (H4).

DATA AND METHODS

We conducted an original online survey in May 2015 that asked participants a range of questions about their neighborhoods, and assessed their preferences for redistribution and specific social policies. We obtained informed consent from all participants prior to their participation in the online survey. The study was conducted in accordance with the protocol approved by the Institutional Review Board of the State University of New York, Purchase College (IRB Protocol Number 141561). We recruited and paid participants ($N = 346$) via Amazon Mechanical Turk (mTurk), and required that they live in New York City and have a good performance rating on mTurk[1]. The sample was 39.2% female, 60.8% white, and 93.3% native-born citizen with a median age of 30. In **Table 1**, we present a comparison of the demographics of our sample with those of the populations of

[1]The requirements were that participants have an HIT approval rate greater than or equal to 95%, and that the number of HITs completed be greater than or equal to 1,000.

TABLE 1 | Demographics of mTurk sample vs. NYC and U.S. populations.

Variable	Sample median or %	NYC median or %[a]	U.S. median or %[b]
Female	39.2%	52.3%	50.8%
Age	30.0	35.9	37.8
RACE/ETHNICITY[c]			
White (not Hispanic/Latinx)	60.8%	32.3%	61.5%
Black	13.7%	22.2%	13.1%
Latinx	11.0%	29.1%	17.6%
Asian (East or South)	13.7%	13.6%	5.5%
Other	0.8%	1.0%	5.9%
Multiracial	7.4%	1.8%	3.1%
CITIZENSHIP STATUS			
U.S. citizen (U.S. born)	93.3%	62.8%	86.5%
U.S. citizen (born abroad)	5.1%	20.2%	6.4%
Legal permanent resident	1.6%		
ACS CATEGORIES			
Not a U.S. citizen	1.6%	17.0%	7.0%
Foreign born	6.7%	37.2%	13.5%
NYC BOROUGH OF RESIDENCE			
Bronx	10.6%	17.0%	
Brooklyn	34.8%	30.8%	
Manhattan	23.4%	19.3%	
Queens	25.8%	27.3%	
Staten Island	5.5%	5.6%	
N	256	8,461,989	321,418,821

[a] *Source: NYC Planning Population FactFinder using 2012–2016 American Community Survey data (United States Census Bureau 2017) (note: these data include those under age 18, who are excluded from our study).*
[b] *Source: 2015 American Community Survey data (United States Census Bureau 2017) (note: these data include those under age 18, who are excluded from our study).*
[c] *Mutually exclusive race (categories exclude those who selected more than one race, who are included in the "multiracial" category).*

New York City and the U.S. Typical of mTurk samples[2], the demographics of our sample differ from the general population of both the U.S. and New York City. Despite such differences, a growing body of research indicates that mTurk is a valid tool for the study of political attitudes (Clifford et al., 2015; Thibodeau and Flusberg, 2017).

Data were not analyzed from participants who did not complete the study, did not pass the screening questions, provided problematic information about their neighborhood of residence[3], or submitted an incorrect completion code. After these exclusion criteria were applied, data from 256 participants remained for analysis. However, because foreign-born respondents are particularly underrepresented in our sample (6.7 vs. 37.2% in the actual NYC population), we limit our analytic sample to native-born respondents. In addition, to facilitate cross-model comparisons, missing data are handled through list-wise deletion yielding a final analytic sample of 201.

OUTCOME MEASURES

We modeled our policy preferences questions on items from the 2009 and 2016 modules of the International Social Survey Programme (ISSP) (ISSP Research Group, 2017, 2018)[4]. The questions from the 2009 wave ("Social Inequality IV") asked respondents to what extent they agreed or disagreed—where [1] represented "strongly agree," [2] represented "agree," [3] represented "neither agree nor disagree," [4] represented "disagree," and [5] represented "strongly disagree"—with the following statements: "Differences in income in our country are too large" ("income differences"); "It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes" ("income equality"); "The government should provide a decent standard of living for the unemployed" ("unemployment"); and "The government should spend less on benefits for the poor" ("benefits poor"). In the last question, we changed "less" to "more." To facilitate a more straightforward interpretation, we reversed the ISSP coding of these items so that [1] represents "strongly disagree" and [5] represents "strongly agree."[5] Factor analyses pointed to a three-item index of the income equality, unemployment, and benefits poor items ("Index 1: Redistribution"; Cronbach's alpha = 0.85).

In the 2016 ("Role of Government V") module of the ISSP, respondents were asked the following about several social policies: "On the whole, do you think it should or should not be the government's responsibility to..." Ordinal answer categories included "definitely should be," "probably should be," "probably should not be," and "definitely should not be." We included in our study five of the most relevant items from the 2016 questions that were unique from the 2009 questions: "provide a job for everyone who wants one" ("jobs"); "provide health care for the sick" ("health"); "provide a decent standard of living for the old" ("old age"); "give financial help to university students from low-income families" ("student aid"); and "provide decent housing for those who can't afford it" ("housing"). We reversed the original coding of these items so that [1] represents "definitely should not be" and [4] represents "definitely should be." We constructed an index of the health, old age, student aid, and housing items based on the implications of factor analyses ("Index 2: Social Policies"; Cronbach's alpha = 0.89).

In **Table 2**, we present mean responses to the questions used to construct the indices; the means of the indices for the analytic

[2] Men, younger people, political liberals, those who are less religious, and white people tend to be over-represented in mTurk samples compared to the U.S. population (Berinsky et al., 2012).

[3] For example, inconsistencies between zip code and neighborhood name (an open-ended question); providing a non-existent neighborhood name; or discrepancies between the name of the neighborhood and/or zip code and the borough selected.

[4] We treated the questions from these two surveys as separate constructs after an examination of orthogonally rotated factor loadings.

[5] There is a substantial debate about whether midpoint categories, such as the "neither agree nor disagree" response option for the 2009 questions, should be treated as true middle categories or as equivalent to non-response, but no clear consensus (Krosnick and Presser, 2010). We contend that a midpoint response is highly valid in the context of policy preferences, and thus do not exclude these respondents from our analyses.

TABLE 2 | Mean support for redistribution and social policies.

Variable	Sample mean (S. D.)	U. S. mean (S. D.)	Large city mid-atlantic U. S. mean (S. D.)	Range
INDEX 1: REDISTRIBUTION[a]				
Income equality	3.55 (1.23)	2.66 (1.26)	3.05 (1.26)	[1, 5]
Unemployment	3.71 (1.10)	3.10 (1.18)	3.63 (1.00)	[1, 5]
Benefits for the poor	3.53 (1.21)	3.53 (1.04)	3.59 (1.10)	[1, 5]
Number of observations	320	1,405	91	
INDEX 2: SOCIAL POLICIES[b]				
Health	3.11 (0.99)	3.33 (0.79)	3.71 (0.56)	[1, 4]
Old age	3.12 (0.94)	3.34 (0.74)	3.54 (0.55)	[1, 4]
Student aid	3.00 (0.95)	3.32 (0.75)	3.70 (0.56)	[1, 4]
Housing	2.87 (0.94)	2.99 (0.81)	3.38 (0.74)	[1, 4]
Number of observations	320	1,315	40	

[a] *U.S. national and regional data from 2009 ISSP (ISSP Research Group 2017); ISSP-provided analytic weights applied.*
[b] *U.S. national and regional data from 2016 ISSP (ISSP Research Group 2018); ISSP-provided analytic weights applied.*

TABLE 3 | Summary statistics, analytic sample.

Variable	Sample mean, median category, or %	SD	Range
OUTCOME MEASURES			
Index 1: redistribution	3.58	1.09	1, 5
Index 2: social policy	3.07	0.83	1, 4
CONTROL MEASURES			
Female	40.3%		
Age	31.7	9.5	19, 63
RACE/ETHNICITY			
White (not Hispanic/Latinx)	64.2%		
Black	12.4%		
Latinx	11.0%		
Asian (East or South)	11.5%		
Other	1.0%		
College completed	65.7%		
Income	$50,001–$75,000		$0, > $1 million
Employed in high-immigration sector[a]	42.9%		
PERCEPTION: # OF WHITE NEIGHBORS			
Low	18.4%		
Medium	44.8%		
High	36.8%		
N	201		

[a] *n = 177 for this measure only.*

sample are presented in **Table 3**. We also include mean policy preference responses from the ISSP U.S. data, along with a subsample of respondents from large mid-Atlantic cities (specific cities are not identified in the publicly available ISSP data), for comparison.

KEY EXPLANATORY MEASURES

Respondents' neighborhoods of residence were determined via a write-in question ("What is the name of the NYC neighborhood or community where you currently live?") and their zip codes.

To measure perceptions of the size of the neighborhood immigrant population, we asked respondents to estimate the proportion of citizens, documented immigrants, and undocumented immigrants in their neighborhoods. In our study, the questions about perceived proportion of immigrants in a community are modeled on similar items from the Project on Race and Ethnicity in Latin America (PERLA) surveys (Telles, 2013). We asked respondents to estimate the proportion of their neighbors who were American citizens, documented immigrants (residents with green cards and other types of work visas), and undocumented immigrants using the following prompt: "In the present, in the neighborhood or community where you live, how many of your neighbors are …" (possible responses included "none," "almost none," "very few," "less than half," "close to half," and "more than half"). We opted for ordinal answer categories over asking respondents to guess the exact number precisely because previous studies had already shown that such estimations were highly error-prone, with majority- and minority-group members in both the U. S. and Europe being very likely to overestimate the size of minority or immigrant populations (Nadeau et al., 1993; Sigelman and Niemi, 2001; Herda, 2010). For example, one of the earliest studies on this topic, known as population "innumeracy," showed that Americans thought three-quarters of the country's population were black, Hispanic, or Jewish (Nadeau et al., 1993). Notably, missingness in the analytic sample is primarily attributable to non-response on the perceptions of non-citizens questions (7% non-response for the documented immigrant question and 12.5% for the undocumented immigrant question), which is much higher than for the perceptions of citizens' question (3% non-response).

To ensure a large enough number of observations per category of analysis in the presentation of some results, perception measures are recoded into three-categories ("3-category"): "low" (none, almost none, very few), "medium" (less than half, close to half), and "high" (more than half) levels of a group.

To compare our respondents' perceptions to the actual proportions, we geocoded each neighborhood to match the city's community districts, for which detailed population information is available via the American Community Survey (ACS), which is conducted annually (United States Census Bureau, 2017). We generate variables representing the percentage of a community district that is native-born (which includes being born in Puerto Rico and U.S. island areas, along with being born abroad to American parents; ranging from 37 to 85%) and non-citizen (ranging from 4 to 36%); in some parts of the paper, we refer to other variables measuring the foreign-born (ranging from

15 to 63%), naturalized citizen (ranging from 8 to 38%), and recent immigrant populations (foreign-born entering the U.S. in the year 2000 or later; ranging from 3 to 29%). As an example to illustrate the meanings of these measures, 60 percent of the Jackson Heights/North Corona neighborhood of Queens is foreign-born, 26 percent of residents immigrated in the year 2000 or later, and 36 percent of residents are not citizens. On the other end of the spectrum, 15 percent of the population of the Tottenville/Great Kills/Annadale neighborhood in Staten Island is foreign-born, with 3 percent of residents being more recent immigrants and 3.5% being non-citizens. Notably, even the NYC neighborhood with the lowest proportion of foreign-born residents (Tottenville/Great Kills/Annadale) is still above the national rate (13% in 2015). Because our neighborhood questions specifically measured perceptions of the proportion of documented and undocumented immigrants, the non-citizen figures from the ACS data are the most pertinent to our analyses. As illustrated by the examples above, unsurprisingly but notably, proportions of foreign-born and non-citizens by neighborhood follow similar patterns.

Following Herda (2013) and Gorodzeisky and Semyonov (2019), we use three distinct qualitative categories of the accuracy of perceptions of the size of the citizen and non-citizen populations: accurate estimation, overestimation, and underestimation. We compared estimates of the neighborhood citizen population to ACS data on neighborhood native-born population. We also compared estimates of the perceptions of documented and undocumented neighborhood residents to the ACS data on non-citizen population by neighborhood. We then generated a categorical variable in which [1] represents accurate estimation, [2] represents under-estimation, and [3] represents over-estimation. For details about the classification of respondents into these categories, please see **Table A1** in Supplementary Material.

CONTROL VARIABLES

Because citizenship and whiteness may be conflated in the American context, in some models we control for the perceived size of the white population. Previous research has demonstrated that both white and minority respondents who perceive a larger white population in their NYC neighborhoods were less supportive of redistribution and social policies (Steele and Perkins, 2018). Other recent research has shown that assumptions about immigration status are related to national origin (Flores and Schachter, 2018), often a proxy for whiteness in the U.S. context. Using the same prompt and answer categories described for the perception of citizens question, we asked respondents to estimate the proportion of white people in their neighborhoods. We include this measure to control for any possible conflation of whiteness and citizenship.

We also expect that the effects of support for redistribution and social policy will vary by the race/ethnicity of respondents themselves. We use a standard measure of race/ethnicity, asking "What is your race/ethnicity? (Please choose all that apply)." The racial and ethnic composition of our sample is consistent with the composition of the U.S. population, although it is not fully reflective of the diversity of New York City. Moreover, unlike many mTurk studies, our data include a substantial proportion of responses from black (14%), Latinx (11%), and Asian (14%) respondents.[6] However, for the sake of parsimony, we simply control for white vs. minority status.

In some cases, we also control for demographic characteristics including gender, age, level of education (1 = college completed), and household income. In addition, following Alesina et al. (2018), we construct a dummy variable for respondents who work in high-immigration sectors, defined as sectors in which the share of immigrants working in that sector is higher than the average share of immigrants employed in the country. Because of missing data, we only include the high-immigrant sector measure in tests of robustness. Summary statistics for the control measures are presented in **Table 3**.

ANALYTICAL STRATEGY

We conduct a preliminary analysis of the relationship between perceived neighborhood immigrant population size, the accuracy of those perceptions, and support for redistribution and social policy using the results of our mTurk pilot study. Given that the outcome variables are additive indices with 13 unique values each, we treat them as continuous and model ordinary least squares (OLS) regressions[7]. As a test of robustness, which is included in the **Appendix** in Supplementary Material, we also estimate OLS regression models with robust, clustered standard errors, which account for the presence of unobserved, neighborhood-level dependence in the error terms and adjust for the lack of independence of observations within neighborhoods (Chen et al., 2003; Wooldridge, 2003).[8]

RESULTS

Below, we begin by examining descriptive findings from our data. Then we analyze the relationship between perceptions about the size of the neighborhood immigrant population and preferences for redistribution and social policy. Finally, we examine the relationship between the effects of the *accuracy* of perceptions of the size of the immigrant population and policy preferences.

[6] These figures include 24 respondents (7.5%) who selected more than one racial or ethnic category.

[7] Although the measures are ordinal, they are frequently treated as continuous in the literature. Moreover, ordinal logistic regression models yield nearly identical results in terms of the directionality and statistical significance of the results presented in this paper, although the interpretation would be much less accessible to many readers.

[8] We considered structural equation modeling (SEM) as an alternative. To quantify the potential value of SEM in our case, we compared standardized coefficients of models with our additive index outcomes to those predicted after factor analysis (in which the ranges of the factor loadings—0.75 to 0.82 in the case of Index 1, and 0.79 to 0.84 in the case of Index 2—were very narrow). Given that the standardized coefficients in both sets of models were virtually identical, we do not believe that the added analytical complexity of SEM compared to OLS is justified.

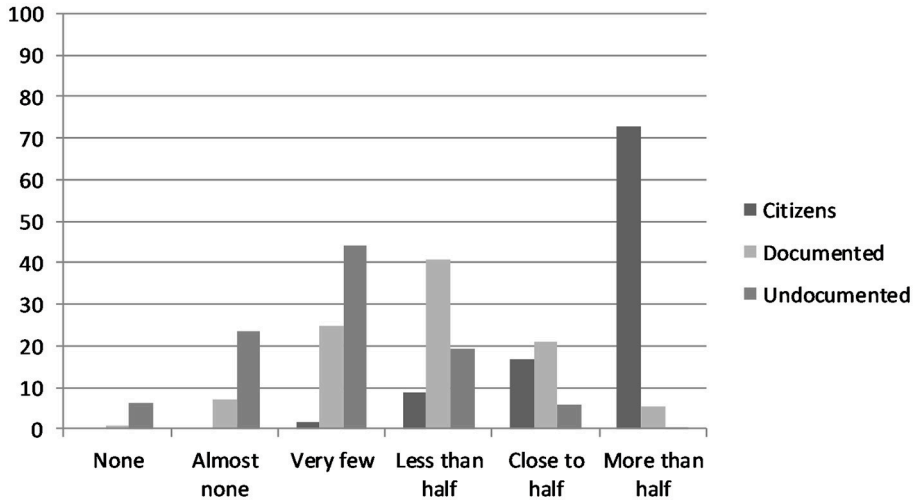

FIGURE 1 | Perceptions of the size of the citizen and immigrant populations in respondent's neighborhood.

DESCRIPTIVE FINDINGS

Despite the fact that Amazon Mechanical Turk respondents are typically more liberal than respondents in nationally representative samples (Berinsky et al., 2012; Huff and Tingley, 2015), mTurk samples have been established as valid tools for the evaluation of political attitudes (Clifford et al., 2015; Thibodeau and Flusberg, 2017). Comparing mean responses to redistribution and social policy questions in our study to mean scores from the U.S. samples and the sub-samples of residents of large cities in the mid-Atlantic in the 2009 and 2016 waves of the ISSP (**Table 2**), we find that the mean responses to the question about support for benefits for the poor were very similar to the results from the ISSP samples. Our respondents appear to be more liberal than their counterparts in terms of attitudes about income equality and unemployment. However, in terms of mean support for health, old age, student aid, and housing policies, our respondents may be more conservative than either the urban mid-Atlantic sample or even the U.S. sample.

If we examine the correlation between neighborhood mean support for redistribution and social policy and the ACS percentages of native-born and non-citizen residents, we find very weak evidence of linear relationships. The Pearson's correlation coefficient for the percentage native-born residents in a neighborhood is −0.18 (statistically significant) and 0.09 (non-significant) for the non-citizen percentage for both attitudinal indices. Thus, we turn to the role of perceptions of the size of these populations.

The distributions of responses to the questions measuring perceptions of the size of the citizen and non-citizen population are shown in **Figure 1**. Regarding the proportion of citizens, close to three-quarters of respondents perceived them as the majority in their neighborhoods. Most respondents perceived documented immigrants to have a substantial, but not majority, presence in their neighborhoods. The modal response to the question about the size of the undocumented immigrant population in a respondent's neighborhood was "very few."

TABLE 4 | Accuracy of perceptions of citizen and noncitizen neighborhood populations.

Variable	*n*	Sample percentage (%)	95% confidence interval	
			Lower bound (%)	Upper bound (%)
CITIZENS				
Accurate estimation	141	70.2	63.4	76.1
Underestimation	45	22.4	17.1	28.7
Overestimation	15	7.5	4.5	12.1
COMBINED PERCEPTION: DOCUMENTED AND UNDOCUMENTED IMMIGRANTS				
Accurate estimation	99	49.3	42.3	56.2
Underestimation	60	29.9	23.9	26.6
Overestimation	42	20.9	15.8	27.1
Number of observations	201			

The next stage of our analysis entailed assessing the accuracy of these perceptions. Based on previous studies, we expected our respondents to be most likely to overestimate the proportion of immigrants in their neighborhoods (H1). We created an additive index of perceptions of the size of the non-citizen population through combining perceptions of the proportions of documented and undocumented immigrants. As shown in **Table 4**, when compared to the true size of the non-citizen population from the ACS data, 49 percent of respondents accurately estimated the non-citizen population, while 30 percent underestimated and 20 percent overestimated. Regarding the comparison to the ACS native-born data, around 70 percent of respondents accurately estimated the citizen population, while 22

percent underestimated and 8 percent overestimated the size of the neighborhood's citizen population.

Thus, respondents were more likely to accurately estimate the proportion of citizens than the proportion of non-citizens, but, notably, they were still more likely to accurately estimate the proportion of non-citizens than to overestimate. In addition, respondents were also much more likely to say that they could not choose in response to the documented and undocumented immigrant questions (7 and 12.5%, respectively) compared to the citizens question (3%). The comparable categories of underestimation of the citizen population and overestimation of the non-citizen population were remarkably consistent, at 22.4 and 20.9%, respectively. Thus, we do not find support for our hypothesis that people would be more likely to overestimate the size of the immigrant population in their respective neighborhood than to underestimate or accurately estimate (H1). In fact, they are most likely to accurately estimate. We also did not expect that so many New Yorkers (30%) would *underestimate* the size of the non-citizen population.

Moreover, although our measures differed, the proportion of misperceptions of non-citizens was lower in our sample than those of similar studies (Alesina et al., 2018; Gorodzeisky and Semyonov, 2019), which lends some support to our second hypothesis that New Yorkers would be less likely (than those in studies of other geographic areas) to overestimate the size of their neighborhoods' non-citizen populations (H2). In particular, previous studies have found that the majority of respondents overestimated the size of the immigrant population (Semyonov et al., 2008; Alesina et al., 2018; Gorodzeisky and Semyonov, 2019). In Alesina et al. (2018) study, the authors find that 86.6% of Americans overestimated the size of the immigrant populations. The numbers are better in some of the other countries they examine, with Italy having the highest proportion of accurate estimators (14.0%, compared to between 5.1 and 10.8% among the other five countries studied) and Sweden having the lowest proportion of overestimators (61.8%, compared to between 70.6 and 86.6% among the other countries studied).[9] Using similar qualitative categories of misperception, Gorodzeisky and Semyonov (2019) also find that residents of some countries with high proportions of immigrants overestimated the size of the immigrant population. More than 60% of British, French, Belgian, and Dutch citizens overestimated the relative size of the immigrant population in their respective countries.

While we hesitate to make direct comparisons across these studies because of methodological differences in our measure of perceptions (e.g., we asked our respondents to select among qualitative categories arranged along an ordinal scale compared to the two other studies of perceptions of the size of the immigrant population, which asked respondents to estimate the exact numerical percentage), we offer one plausible and intuitive explanation for these differing results. Following Gorodzeisky and Semyonov's (2019) argument, it is possible that our lower proportion of NYC residents misperceiving the size of the non-citizen population may be attributable to New York City's high percentage of foreign-born and non-citizen residents *and* long experience with international migration. Notably, in our study, residents of Queens, the most diverse county in New York and the United States (perhaps the world) were the least likely to overestimate the size of the non-citizen population with only 14% overestimating.

We also estimated a series of logistic regression models to determine if the accuracy of respondents' estimates was related to any demographic characteristics (gender, age, race, level of education, and income). Across models of the proportion of citizens and non-citizens in a respondent's neighborhood, there were consistently no statistically significant effects of any of these characteristics (see **Table A2** in Supplementary Material).

PERCEPTIONS AND ATTITUDES

Before we turn to the question of how accuracy of perceptions is related to support for redistribution and social policy, we first examine the association between these attitudes and perceptions themselves (regardless of their accuracy). Our third hypothesis was that those who perceive higher proportions of immigrants in a neighborhood will report lower support for redistribution and social policies in comparison to those who perceive lower proportions (H3).

Below, we examine support for redistribution and social policies among our respondents by perception of the size of the citizen, and documented and undocumented immigrant populations. For mean support for redistribution and social policy along with ANOVA results by level of perceived size of the citizen, and documented and undocumented immigrant populations using the three-category measure of population perceptions, please see the **Table A3** in Supplementary Material. In general, support for redistribution and social policy increase as the perceived size of the neighborhood citizen population increases, and decrease as the perceived size of both non-citizen groups increase. However, only the mean differences in support for social policy between perceiving a majority of citizens vs. lower numbers of citizens were statistically significant. These preliminary findings are confirmed through regression analyses.

In **Table 5**, we summarize the results of bivariate OLS regression models of the effects of the perceived proportion of citizens in a neighborhood on support for redistribution (Model 1) and social policy (Model 3). We also summarize results of multi-variable OLS regression models (Models 2 and 4). We find that the effects of perceived proportion of citizens on support for redistribution are not statistically significant (Models 1 and 2). However, we observe that the effect of the perceived proportion of citizens in a neighborhood has a positive and statistically significant effect on support for social policies (Model 3). This effect remains statistically significant when we control for a range of factors, perceived proportion of white neighbors, the respondent's own race, gender, age, level of education,

[9]Because respondents in the Alesina et al. (2018) study were asked to provide an exact percentage of immigrants in the country, and were only classified as accurate if they were within two percentage points of the true value, it is less surprising that so many respondents were inaccurate. However, if there were no bias in these estimations, we would expect respondents to over- and underestimate at the same rates, and that is not the case.

TABLE 5 | OLS regression models of perceptions of size of neighborhood citizen population and support for redistribution and social policy.

Variables	(1) Redist	(2) Redist	(3) Soc Pol	(4) Soc Pol
Perception: # of U.S. citizens	0.02 (0.11)	0.10 (0.11)	0.23** (0.08)	0.29*** (0.08)
Female		0.17 (0.16)		0.20 (0.12)
Age		−0.01 (0.01)		0.01 (0.01)
Respondent race: White		−0.08 (0.18)		−0.02 (0.13)
College		0.35* (0.16)		0.28* (0.12)
Income		−0.11** (0.04)		−0.11*** (0.03)
Perception: # of white neighbors		−0.11 (0.07)		−0.07 (0.05)
Constant	3.49*** (0.51)	4.20*** (0.56)	1.99*** (0.38)	1.93*** (0.41)
Observations	201	201	201	201
R-squared	0.00	0.10	0.04	0.15

Standard errors in parentheses.
****p < 0.001, **p < 0.01, *p < 0.05.*

TABLE 6 | OLS regression models of perceptions of size of neighborhood non-citizen population and support for redistribution and social policy.

Variables	(1) Redist	(2) Redist	(3) Soc Pol	(4) Soc Pol
Perception: # of non-citizens	−0.03 (0.09)	−0.12 (0.10)	−0.10 (0.07)	−0.14^ (0.07)
Female		0.18 (0.16)		0.18 (0.12)
Age		−0.01^ (0.01)		0.01 (0.01)
Respondent race: White		−0.07 (0.18)		−0.04 (0.14)
College		0.38* (0.16)		0.32** (0.12)
Income		−0.11** (0.04)		−0.11*** (0.03)
Perception: # of white neighbors		−0.12 (0.07)		−0.05 (0.05)
Constant	3.65*** (0.24)	4.95*** (0.45)	3.30*** (0.18)	3.50*** (0.34)
Observations	201	201	201	201
R-squared	0.00	0.10	0.01	0.11

Standard errors in parentheses.
****p < 0.001, **p < 0.01, *p < 0.05, ^p < 0.1.*

and household income (Model 4). Thus, those who perceive themselves as living around a higher proportion of citizens are more supportive of social policies.

In **Table 6**, we summarize the results of bivariate OLS regression models of the effects of the perceived proportion of non-citizen neighbors (Models 1 and 3), along with multi-variable models including controls (Models 2 and 4) on support for redistribution (Models 1 and 2) and social policy (Models 3 and 4). The results demonstrate that the effects of the perception of the size of the non-citizen population in a neighborhood have no statistically significant effects on support for redistribution or social policies with one exception—the near-significance of the negative coefficient of perception of the size of the non-citizen population on support for social policies in the full model (Model 4).

Regarding the control variables included in models in **Tables 5** and **6**, the coefficients of income are negative and statistically significant in all multi-variable models, and the coefficients of college education are positive and significant. The effects of respondent's race, gender, age, and the perceived proportion of white neighbors are non-significant. The latter suggests that the effect of the perception of the size of the citizen or non-citizen population is not explained by the perception of the size of the white population.

MISPERCEPTIONS AND ATTITUDES

We have established that perceptions of the neighborhood citizen population affect support for social policies, but not redistribution. Next, we turn to the question of whether the accuracy of these perceptions is relevant. In particular, we hypothesized that inflated (overestimation) perceptions of the size of the non-citizen population will be associated with lower

TABLE 7 | OLS Regression Models of Accuracy of Perceptions of Size of Neighborhood Citizen Population and Support for Redistribution and Social Policy.

Variables	(1) Redist	(2) Redist	(3) Soc Pol	(4) Soc Pol
ACCURACY: CITIZENS[a]				
Underestimation	−0.15 (0.19)	−0.30 (0.19)	−0.42** (0.14)	−0.51*** (0.14)
Overestimation	−0.25 (0.30)	−0.31 (0.29)	0.02 (0.22)	−0.04 (0.21)
Female		0.17 (0.16)		0.18 (0.12)
Age		−0.01 (0.01)		0.01 (0.01)
Respondent race: White		−0.09 (0.18)		−0.01 (0.13)
College completed		0.36* (0.16)		0.29* (0.12)
Income		−0.12** (0.04)		−0.11*** (0.03)
Perception: # of white neighbors		−0.11 (0.07)		−0.07 (0.05)
Constant	3.63*** (0.09)	4.79*** (0.36)	3.16*** (0.07)	3.38*** (0.27)
Observations	201	201	201	201
R-squared	0.01	0.11	0.05	0.15

Standard errors in parentheses.
****p < 0.001, **p < 0.01, *p < 0.05.*
[a]*Omitted category is accurate estimate of the neighborhood proportion of citizens.*

TABLE 8 | OLS regression models of perceptions of size of neighborhood non-citizen population and support for redistribution and social policy.

Variables	(2) Redist	(4) Redist	(6) Soc Pol	(8) Soc Pol
ACCURACY: NON-CITIZENS[b]				
Underestimation	−0.01 (0.18)	0.02 (0.18)	0.00 (0.13)	0.04 (0.13)
Overestimation	−0.05 (0.20)	−0.08 (0.20)	−0.32* (0.15)	−0.33* (0.15)
Female		0.16 (0.16)		0.18 (0.12)
Age		−0.01^ (0.01)		0.01 (0.01)
Respondent race: White		−0.08 (0.18)		−0.03 (0.13)
College completed		0.37* (0.16)		0.32** (0.12)
Income		−0.11** (0.04)		−0.11*** (0.03)
Perception: # of white neighbors		−0.09 (0.07)		−0.03 (0.05)
Constant	3.59*** (0.11)	4.62*** (0.35)	3.13*** (0.08)	3.15*** (0.26)
Observations	201	201	201	201
R-squared	0.00	0.09	0.03	0.13

Standard errors in parentheses.
****p<0.001, **p<0.01, *p<0.05.*
[b]*Omitted category is accurate estimate of the neighborhood proportion of non-citizens.*

support for redistribution and social policies compared to accurate estimation or under-estimation (H4).

We begin by examining the effects of the accuracy of perceptions of size of the neighborhood U.S.-citizen population. In **Table 7**, we summarize the results of bivariate and multi-variable OLS regression models of these effects on support for redistribution (Model 1 and 2) and social policy (Model 3 and 4). The coefficients of underestimation of the neighborhood citizen population (compared to accurate estimation) are negative and statistically significant in the bivariate model of support for social policies (Model 3), as well as the multi-variable model that includes a range of control variables—including perception of the number of white neighbors, race, gender, age, level of education, and household income. However, the effects of overestimation are non-significant in both models of support for redistribution (Models 1 and 2). The coefficients of overestimation of the neighborhood citizen population (compared to accurate estimate) are non-significant in all models.

In **Table 8**, we summarize the results of bivariate and multi-variable OLS regression models of the effects of accurate estimation of the proportion of non-citizens in a neighborhood on support for redistribution (Model 1 and 2) and social policy (Model 3 and 4). The coefficients of overestimation of the neighborhood non-citizen population (compared to accurate estimate) are negative and statistically significant in both models of support for social policies, but non-significant in the models of support for redistribution. The coefficients of underestimation of the neighborhood non-citizen population are non-significant in all models.

Among the control variables in the models in both **Tables 7** and **8**, consistent with the perceptions models presented in **Tables 5** and **6**, household income is a negative and statistically significant predictor of both attitudes toward redistribution and social policies, and the coefficients of college education are positive and significant (Models 2 and 4). The coefficients of other control variables are non-significant in all models.

As additional tests of robustness of the social policy attitudes findings above, we examine the following alternative model specifications to compare the results to those in **Tables 7** and **8**: (1) using OLS with robust-clustered standard errors to control for the lack of independence of observations within neighborhoods; (2) controlling for the actual percentages of citizens and non-citizens in neighborhoods (ACS data); and (3) including a measure of work in high-immigrant industries (excluded from the main models because of missing data). These results are summarized in the **Table A4**, **A5** in Supplementary Material and yield results that are very consistent with those presented above.

DISCUSSION

In the past several decades, there has been precipitous growth in immigration and a corollary concern regarding the economic and cultural consequences of immigration. The research literatures on ethnic fractionalization, diversity, and racial/ethnic heterogeneity all posit that immigration may undermine social welfare spending and public support for social welfare policies. However, the results of these related literatures provide mixed support for this hypothesis. There appears to be instead, a distinct set of contextual and individual-level characteristics (rising immigration, misperceptions of the size of the immigrant group) that may weaken the public's support for welfare policies. Drawing from a broad set of related studies that argue that people's perceptual realities regarding immigrants and immigration inform attitudes, we examined the extent to which people overestimate the proportion of the immigrant population and its relationship to attitudes about redistribution and social policies. A diverse sample of NYC residents answered a series of questions regarding their perception of the size of the citizen/non-citizen population in their respective neighborhoods of residence and two social policy preferences indicators.

Somewhat in line with our first hypothesis (H1), about a quarter of New Yorkers overestimated the size of the non-citizen population. This overestimation is consistent with other studies, although the proportion of respondents that overestimated was lower, a point we elaborate on more below. Interestingly, more New Yorkers actually gave accurate estimates or underestimated the size of the non-citizen population than overestimated it, lending some support to our second hypothesis that accurate perceptions would be more prevalent in a stable high-immigrant environment (H2). Furthermore, overestimation of the size of the non-citizen population did not differ across our key demographic characteristics (gender, age, race, level of education, household income, employment in high-immigration industry). This finding contrasts with other studies that have found that misperceptions were most extreme among the non-college educated and those working in immigration-intensive sectors (Nadeau et al., 1993; Alesina et al., 2018). However, we emphasize that this is a pilot study with only 201 observations in the analytic sample. The small sample size alone may explain the lack of statistical significance of the demographic traits found to be salient in others' studies.

Our results also suggest some interesting associations between perceptions, accuracy of perceptions, and policy preferences. Somewhat in line with our third hypothesis (H3), those who perceived themselves as living around a higher proportion of citizens were more supportive of social policies, but not redistribution. In contrast, those perceiving higher numbers of non-citizens in their neighborhoods may be less supportive of social policy preferences and redistribution, but these effects were not statistically significant. Together, these results are the first to illustrate that people's perceptions of the size of non-citizen vs. citizen population have differing effects on policy preferences, and that these perceptions are more clearly associated with support for specific social policies than with general attitudes about redistribution.

We were also interested in the question of whether accuracy of these perceptions is germane to policy preferences. We found some support for our final hypothesis (H4) that overestimation of the size of the immigrant population (or underestimation of the size of the citizen population) compared to accurate estimation was associated with lower support for social policies, although neither measure was associated with attitudes toward redistribution. In addition, the large group of respondents who underestimated the non-citizen population did not differ much from respondents who estimated accurately in terms of their support for redistribution or social policies.

IMPLICATIONS

Taken together, our findings suggest several novel avenues for future research on the formation of public opinion regarding redistributive and social policies. In particular, our research suggests that the majority of our NYC-resident respondents either actually accurately perceived or underestimated the size of the non-citizen population in their respective neighborhoods. While we hesitate to make direct comparisons across these studies because of the methodological differences in our measure of perceptions, we offer one plausible explanation for these differing results. Following Gorodzeisky and Semyonov's (2019) argument, it is possible that the lower proportion of NYC residents misperceiving the size of the non-citizen population may occur because New York City has a high percentage of foreign-born residents *and* has had long experience with international migration; residents of Queens, perhaps the most diverse county in the world, were the least likely to overestimate the size of the non-citizen population. Moreover, unlike other high-immigrant population countries like France and Belgium, New York City has historically advanced a diverse and multicultural ideology premised on inclusion and the value of different groups. It is possible that through an emphasis of these values and the city's lengthy history of high rates of immigration, NYC residents may have more opportunities to acquire a particular type of knowledge regarding the size of the immigrant population, similar to the Swiss who were the most accurate estimators in the Gorodzeisky and Semyonov (2019)

study. This is also consistent with Alesina et al. (2018) finding that respondents who knew an immigrant personally had more accurate perceptions. An additional interpretation for a relatively low rate of overestimation of the size of the immigrant population in our sample could result from a ceiling effect. In particular, it is possible that once the share of an immigrant population is very high, as it is in New York City, there may be less of a chance of overestimation. Future research should further explore how the role of perceptions of immigrants differ across new vs. traditional immigrant-receiving contexts.

Second, to our knowledge, our study is one of the few to examine and illustrate that policy preferences may be in part a function of people's perceptions regarding the size of the immigrant population. This is consistent with a related set of studies that have shown that misperceptions are associated with anti-immigrant attitudes (Semyonov et al., 2004, 2008; Herda, 2013; Pottie-Sherman and Wilkes, 2017; Gorodzeisky and Semyonov, 2019). Our results also provide some preliminary evidence that misperceptions (e.g., overestimating the size of the immigrant population) undermine public support for social welfare policies, but only among one of our two attitudinal indices. In interpreting these findings, it is possible that the two indices are capturing different components of social welfare attitudes. For example, the redistribution questions (Index 1) are broader and theoretical and may be tapping into respondents' ideologies related to social welfare. The social policy questions (Index 2), in contrast, are more specific and ask respondents to consider the application of targeted social welfare policies. This may mean that respondents' perceptions of the size of the non-citizen population are unrelated to the "principles" of social welfare, but negatively related to the application of those principles.

Finally, unlike previous studies, we measure perceptions of the size of the majority population—U.S. citizens—along with the size of the minority immigrant populations. Furthermore, to the best of our knowledge, we are also the first researchers to ask about perceptions of the size of the documented vs. undocumented immigrant populations. Although we did not necessarily expect respondents to be able to distinguish between the two groups with a great deal of accuracy (Flores and Schachter, 2018), we expected perceptions of the size of the two types of immigrant groups to be meaningful. However, we do not find any statistically significant differences between perceptions of groups of different legal immigration statuses on preferences for redistribution or social policy. Differences may emerge in studies with larger sample sizes. On the other hand, our data suggest that perceptions of proportions of citizens compared to proportions of non-citizens in neighborhoods may not have identically inverse implications for attitudes about social policies, with effects potentially being more pronounced when respondents considered the size of the citizen population. While we are, again, limited by the fact that this was a pilot study with a relatively small number of observations, we believe that the evidence about citizen perceptions suggests an important avenue for future research.

In considering the results of the study, it is important to note some limitations, some of which present opportunities for future research. The most important caveat is that respondents are not randomly assigned to neighborhoods of residence, an option that is rarely available and ethically fraught. To the extent that respondents choose where they live, these choices may reflect broader values and ideologies, which might drive the associations observed. In addition, the data we analyzed were cross-sectional, which prevents us from evaluating the causal or directional order of our main theoretical variables. In addition, our measure of respondents' perceived size of the immigrant group was ordinal in nature and did not exactly align with the ACS categories of the specific numbers of citizen and non-citizen populations. Thus, future research might ideally employ more comprehensive quantitative measures of the perceived immigrant population similar to Alesina et al. (2018). One final issue that is that we did not collect data that would have allowed us to determine whether the perceived characteristics of the non-citizen population are related to policy preferences. Alesina et al. (2018), for example, found that not only did respondents have strongly misinformed views about the size of the immigrant population in general, they also overestimated the share of immigrants from non-Western and Muslim majority countries while underestimating the share of Christian migrants. These misperceptions, in turn, made natives more opposed to redistribution, and were more salient predictors than estimations of the size of the immigrant population as a whole. Future research should continue to unpack the characteristics of the immigrant population as it relates to attitudes toward social policies.

While we do not want to draw any firm conclusions from a small pilot study, this study offers important insights into how the perceived size of the non-citizen population may affect social policy attitudes. In particular, our results suggest that a subset of respondents overestimate the size of the non-citizen population. These misinformed individuals are also the least supportive of social welfare policies. We hope that future research will further examine source misrepresentations about immigrants and the related implications for public opinion.

DATA AVAILABILITY

The datasets generated for this study are available on request to the corresponding author.

AUTHOR CONTRIBUTIONS

LS and KP: Conceptualization, Investigation, Writing—Original Draft, Writing—Review and Editing; LS: Data curation, formal analysis, funding acquisition, methodology, visualization.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fsoc.2019.00018/full#supplementary-material

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Unwelcome Immigrants: Sources of Opposition to Different Immigrant Groups Among Europeans

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The present paper advances the proposition that level of opposition to immigration (i.e., endorsement of closure or exclusion) and its sources are not uniform and vary across immigrant groups. To test this proposition we utilize data from the 2014 European Social Survey for 20 countries and apply the analysis to the following groups: immigrants of same race/ethnic group as a majority population, immigrants of different race/ethnic group, Muslim, Jewish, and Roma immigrants. The analysis reveals that level of opposition to immigration of different ethno-religious groups in Europe is hierarchical, being most extreme toward Muslims and Roma and quite minor toward people of the same ethnic/race groups as well as toward Jews. Further analysis reveals that not only the level of opposition varies across groups but also the sources that drive such opposition. In general, the sources of opposition to immigration can be divided to 2 major categories: universal sources and group-specific sources. The universal sources (sources which increase opposition toward all immigrants regardless of their origin) pertain to threat of competition over socio-economic and symbolic resources. The group-specific sources consist of racism, fear of crime, and inter-group contact. Racism and lack of inter-group contact tend to increase opposition that is exclusive to Muslim and to Roma immigrants. Racism, however, does not increase opposition that is exclusive to immigrants belonging to a race/ethnicity, which is different from most country people. Fear of crime is likely to prompt opposition that is exclusive to immigrants of different race/ethnic group and to Roma but not toward Muslims. The findings underscore the multiple sources underlying emergence of anti-immigrant sentiment, in general, and opposition to specific groups of immigrants, in particular.

Keywords: european immigration, attitudes toward immigrants, exclusion, public opinion, ethnic groups

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INTRODUCTION

Exclusionary policies have long been understood along the Weberian theoretical concept "closure" according to which "social collectivities seek to maximize rewards by restricting accesses to resources and opportunity to a limited circle of eligible" (Parkin, 1974, p. 44). From this perspective, researchers have long viewed opposition to immigration as a form of closure resulting from fear of competition over rewards and resources, whether real or symbolic (Quillian, 1995; Fetzer, 2000; Scheepers et al., 2002; Semyonov et al., 2006). In the present paper, we seek to contribute to the literature on formation of attitudes toward immigrants by advancing the thesis that opposition to immigration is not unidimensional but is prompted and motivated by multiple sources. We further

contend that the level of opposition to immigration and its sources are not uniform across all groups of immigrants. We suggest that whereas opposition to immigration, regardless of immigrants' religious and ethnic origin, tend to increase with fear of competition over socio-economic and symbolic resources and to decrease with intergroup contact, racist views, and fear of crime prompt opposition to immigration directed at specific ethnic and religious groups.

To date the overwhelming majority of studies on anti-immigrant sentiments have examined attitudes toward immigrants as a generic category, not distinguishing between groups by ethnic origin and by religion. This approach can be problematic because members of the public may have in mind different types of immigrants when asked to report their views on a general category of immigrants (Blinder, 2015). The small and quite recent body of research that distinguishes between groups of immigrants by ethnic or religious origin found that in the European context attitudes toward immigrants vary across groups being more negative toward ethnic minorities (Gorodzeisky and Semyonov, 2009; Ford, 2011; Ben-Nun Bloom et al., 2015); and that opposition is especially pronounced in the case of Muslim (Strabac and Listhaug, 2008; Hellwig and Sinno, 2017) and Roma out-group populations (Fontanella et al., 2016).

To put to test the theoretical arguments that opposition to immigration is multi-dimensional and that the level and sources of opposition to immigration vary across ethno-religious groups, we utilize data from the European Social Survey (gathered in 2014 from 20 countries). In the data analysis, we estimate and compare levels and sources of opposition to immigration across several immigrant groups (i.e., immigrants of same race/ethnic group as a majority population, immigrants of different race/ethnic group, Muslim, Jewish, and Roma immigrants). By discussing the meaning of the findings in light of sociological theory we seek to provide a broader and deeper understanding of the multiple sources underlying emergence of anti-immigrant sentiment, in general and opposition to specific groups of immigrants, in particular.

SOURCES OF OPPOSITION TO IMMIGRATION

The "competitive threat" theoretical model is the theoretical framework most often used by social scientists for understanding emergence of negative attitudes toward out-group populations. According to the model, anti-immigrant sentiment (including prejudicial views and exclusionary attitudes) should be understood as a reaction to threat of competition (whether real or perceived) with immigrants either in the economic sphere (e.g., labor market, welfare system) or in the cultural sphere (e.g., cultural homogeneity of a society; social values). From this point of view, the "competitive threat" theoretical perspective is unidimensional and as such it provides a theoretical framework that does not allow inclusion of additional sources of anti-immigrant sentiments. However, overview of previous studies on anti-immigrant attitudes reveals several additional sources that play a role in the formation of attitudes toward out-group populations but do not originate from fear of competition. For example, a substantial body of socio-psychological research focuses on intergroup social contact that affects attitudes toward outgroup via interactions (e.g., Pettigrew and Tropp, 2006). Likewise, a few recent studies suggest that racial prejudice (as beliefs that acquired via socialization) and fear of crime (which does not stem from threat of competition) affect exclusionary attitudes toward immigrants (e.g., McLaren and Johnson, 2007; Gorodzeisky and Semyonov, 2016). Although competitive threat, intergroup contact, racist views, and fear of crime are somewhat interrelated, each can constitute a distinct source of anti-immigrant sentiment. Therefore, we contend here, that intergroup contact, racist beliefs, and fear of crime are independent of "competitive threat" and each represents a distinct and unique determinant of anti-immigrant sentiment.

To advance the knowledge on the sources of opposition to immigration, the present study endorses a model which includes multiple sources of opposition to immigration. Hence, it examines the unique contribution of each one of the following four major sources: threat of competition, (lack of) intergroup contact, fear of crime, and racist views. In what follow, we discuss the above-mentioned sources of opposition to immigration in detail and then conclude with expectations related to the relevance of each source to the formation of opposition toward immigrants in general and toward specific ethno-religious groups of immigrants in particular.

Competitive Threat in the Economic Sphere

The competitive threat theoretical model (also known as group threat) operates under the premise that intergroup relations are shaped by group identification coupled with intergroup competition over rewards and resources (e.g., Blumer, 1958; Blalock, 1967; Bobo and Hutchings, 1996). The intergroup competition is defined in terms of a zero-sum game with asymmetric power relations between the competing groups. Members of the majority population view themselves as superior to the out-group populations and therefore more deserving access to privileges, resources, and rewards (Blumer, 1958; Bobo and Hutchings, 1996). Therefore, when an out-group population (e.g., immigrants) poses a challenge (whether real or perceived) to the privileges and interests of the majority group in socio-economic sphere, hostility and exclusionary attitudes toward the others are likely to rise. From this point of view, opposition to immigration can be understood as a defensive reaction toward emerging threats and challenges posed by members of the out-group population to the superiority of the majority population in access to social and economic resources (See support to this argument by e.g., Scheepers et al., 2002; McLaren, 2003; Raijman et al., 2003; Semyonov et al., 2004). Following this logic, we expect economic threat to increase opposition to immigration of all groups of immigrants.

Competitive Threat in the Cultural Sphere

The second source of exclusionary attitudes is driven by perceptions of threat posed by the out-group population to the cultural homogeneity and the national identity of the host society

(Fetzer, 2000; Raijman and Semyonov, 2004; Sniderman et al., 2004; Gorodzeisky, 2013). According to this view, members of the majority population, regardless of threat to their economic interests, might be concerned with the impact that the out-group population exerts on the national and cultural character of the host society. More specifically, some members of the majority group are often disturbed with the detrimental impact that outsiders may exert on the national culture, collective identity, value-system and homogeneity of the national population (e.g., Schnapper, 1994; Fetzer, 2000; Castles et al., 2014). In other words, members of the majority population object to immigrants because they fear that immigrants "pollute" the local culture and the homogeneous composition of the national population (e.g., Ben-Nun Bloom et al., 2015). Following this argument, we expect fear of competition in the cultural sphere, regardless of threat to economic interests, to increase opposition to immigration of all groups of immigrants.

Intergroup Contact

Intergroup contact is viewed as a major source of positive attitudes toward out-group populations (e.g., Allport, 1954; Pettigrew, 1998; Brown and Hewstone, 2005; Semyonov and Glikman, 2008). Engagement with members of an out-group population, especially when the contact is positive, decreases prejudice and hostility toward the out-group population. On the other hand, lack of contact is likely to preserve prejudice and negative attitudes toward out-group populations (Allport, 1954; Pettigrew, 1998; Brown and Hewstone, 2005). That is, intergroup contact can alter attitudes and beliefs about the others through intimate personal experience, deeper knowledge, affective ties, and in-group reappraisal. It occurs via process of generalization of positive attitudes from the encountered member of an outgroup to the outgroup and affective processes of reduced intergroup anxiety and threat perceptions (Hewstone, 2015). The theory further suggests that inter-group friendship has the strongest effect on eliminating negative attitudes and prejudice (Pettigrew, 1998). Moreover, not only do positive attitudes emerge toward a specific outgroup with which contact was established but the positive attitudes seem to permeate and spread toward other outgroups as well (Hewstone, 2015). Although the causal relations between contact and attitudes are not fully established, a large body of research lends firm support to the thesis that contact is likely to decrease negative attitudes and reduce hostility toward the outgroup populations (for meta-analysis see Pettigrew and Tropp, 2006). Following the logic embodied in the contact theoretical model, we expect intergroup contact to decrease opposition to immigration of all groups of immigrants.

Fear of Crime

One of the widespread beliefs held by members of the majority population regarding the detrimental impact of immigrants on the social environment is the idea that immigrants are responsible for rise in crime and violence (Calavita, 2003; Semyonov et al., 2006, 2008; Ceobanu, 2011). According to Ceobanu (2011; p. 126), for example, Europeans' concerns of immigrants' impact on crime "are perhaps reinforced by the fact that some immigrants come illegally or overstay their visa." A large body of research has repeatedly revealed that fear of crime is among the major reasons why native-born do not want to share residential space with ethnic minorities and immigrants; and that fear of crime and lack of sense of personal safety are more pronounced in residential areas where racial minorities and immigrants are highly concentrated (Semyonov et al., 2012, for Europe). Indeed, fear of crime committed by immigrants, has become one of the major sources of opposition to immigration in the European context (McLaren and Johnson, 2007; Turper, 2017)[1]. Following these studies, we expect fear of crime to increase opposition to immigration mostly in the case of (visible) ethno-religious minorities (the immigrants that are most often perceived as associated with criminal activities).

Racism and Prejudice

A series of studies carried out in the European context emphasize the central role played by racial/ethnic prejudice in shaping attitudes toward immigrants (e.g., Pettigrew and Meertens, 1995; Pettigrew, 1998; Verberk et al., 2002; Vala et al., 2008; Gorodzeisky and Semyonov, 2016). While some view racial prejudice as resulting from competitive threat (e.g., Verberk et al., 2002), others contend that racist views constitute an independent source of anti-immigrant sentiments. For example, a recent study by Gorodzeisky and Semyonov (2016) demonstrates that racial prejudice toward the non-European/non-white minority population is likely to increase negative attitudes toward immigrants, regardless of competitive threat.

Racial prejudice is defined as "antipathy based on faulty and inflexible generalization" (Allport, 1954, p. 9). It was traditionally viewed as socially learned feelings, sentiments, and cultural ideas (Allport, 1954; Kinder and Sears, 1981; Sears and Kinder, 1985). In other words, racial prejudice is an irrational socially acquired feeling with scant economic or social basis. The impact of racial/ethnic prejudice on opposition to immigration may reflect a form of racism. Although racism is strongly associated with racial prejudice, the two concepts do not completely overlap. While racial/ethnic prejudice is defined as negative feeling toward a socially defined group and toward any person perceived to be a member of that group, racism refers to a general ideology and belief in hierarchical order of racial and ethnic groups together with the idea that inherent differences among the racial and ethnic groups determine cultural and individual achievement (e.g., Van den Berghe, 1967). Racism is especially relevant with regards to emergence of opposition toward immigrants belonging to ethnic and racial minorities. This is so because racism is also viewed as the organizational map that guides actions of racial actors in society (Bonilla-Silva, 1997). Following this logic, we expect racist views to increase opposition to immigrants belonging to ethno-religious minorities in host countries, regardless of threat of competition and fear of crime.

[1]It is important to note, however, that previous research suggest that the public fails to accurately estimate crime rate tendencies and that fear of criminal activity by immigrants is often fuelled by anecdotal reports in the mass media (McLaren and Johnson, 2007; Rumbaut and Ewing, 2007).

In sum, the present paper aims to identify sources that drive opposition to several specific ethno-religious immigrant groups in Europe. Subsequently, in the analysis that follows we will introduce a methodological approach that enables us to isolate and discern the opposition to immigration that is directed "**exclusively"** at a specific group of immigrants from the "**general objection"** to immigration (or from other groups). Then we will proceed to examine the impact of the various sources on opposition to immigration in general and to "exclusive opposition" directed at specific groups of immigrants. By doing so, we will be in a position to test theoretical expectations regarding differential sources of exclusionary attitudes toward various ethnic and religious immigrant groups in Europe.

MATERIALS AND METHODS

Data for the present analysis were obtained from the seventh round of the European Social Survey (ESS) 2014 that included "Immigration" module (for detailed information on the "Immigration" module see European Social Survey, 2015). We used information provided by the 2014 ESS on twenty European countries. For each country, data were gathered from a random probability national sample of the eligible resident populations aged 15 and over. The analysis reported here was restricted to the native-born citizens whose parents were born in the country (majority group population).

Measured Indicators of the Predictors of Opposition to Immigration

Perceived economic threat is an index constructed as the mean score of responses to the three following questions: (1) "Would you say that it is generally bad or good for [country]'s economy that people come to live here from other countries?" (2) "Would you say that people who come to live here generally take jobs away from workers in [country], or generally help to create new jobs?", and (3) "Most people who come to live here work and pay taxes. They also use health and welfare services. On balance, do you think people who come here take out more than they put in or put in more than they take out?" Responses were recoded according to an 11-point scale ranging between 0 (good for the economy, create new jobs, and generally put in more, respectively) and 10 (bad for the economy, take jobs away and generally take out more, respectively). ***Perceived cultural threat*** is captured by an index constructed as the mean score of responses to the two following questions: (1) "Would you say that [country]'s cultural life is generally undermined or enriched by people coming to live here from other countries?" and (2) "Do you think the religious beliefs and practices in [country] are generally undermined or enriched by people coming to live here from other countries?" Responses were recoded according to an 11-point scale ranging between 0 (enriched) and 10 (undermined). ***Intergroup contact*** is a dummy variable that distinguishes between respondents that have close friends of a different race or ethnic group from most [country] people and those who do not have such friends. Note that positive contacts with members of one outgroup (e.g., different race or ethnic group) are expected to reduce negative attitudes also toward other out-groups (e.g., Muslims, Roma). ***Fear of crime*** is measured by responses to the following single question: "Are [country]'s crime problems made worse or better by people coming to live here from other countries." Responses were recoded according to an 11-point scale ranging between 0 (better) and 10 (worse). ***Racism*** is operationalized by an index based on respondents' answers to the three following questions: "Do you think some races or ethnic groups are born less intelligent than others?," "Do you think some races or ethnic groups are born harder working than others?," "Thinking about the world today, would you say that some cultures are much better than others?" Because responses to these questions were coded only as "yes" and "no," the variable is expressed as the proportion of the questions that elicited a positive answer (out of all the questions on which a respondent provided answers)[2].

In order to control for individuals' socio-demographic characteristics, the following variables were used in the estimation procedure: age (in years), gender, education (years of formal schooling), and reported subjective income (insufficient vs. sufficient).

Measuring Opposition to Immigration: Definitions and Descriptive Overview

The measured indicators of opposition to immigration were obtained from responses to the following five questions: (1) "To what extent do you think [country] should allow people of the same race or ethnic group as most [country] people to come and live here?" (2) "How about people of a different race or ethnic group from most [country]?" (3) "To what extent do you think [country] should allow Jewish people to come and live here?" (4) "To what extent do you think [country] should allow Muslims to come and live here?", and (5) "To what extent do you think [country] should allow Gypsies to come and live here?" Response options were 1 (many), 2 (some), 3 (a few), and 4 (none). In order to provide the most extreme and clear-cut categories of opposition to immigration, we distinguished between those who said allow "NONE" and all others (response options include: many, some and a few). In **Table 1**, we present percent distribution of the respondents who object to immigration ("allow none") by ethno-religious groups of immigrants and by country.

The data reveal that the level of opposition to immigration varies considerably across groups and across countries. Scandinavian countries are characterized by relatively low level of opposition to immigration while Eastern European countries are characterized by relatively high level of opposition to immigration (regardless of the origin of the immigrant group). At the same time, there is a clear hierarchical order in the level of opposition toward the groups with almost uniform order in *all European countries*. Opposition is least pronounced toward "immigrants of a same race or ethnic group as most country people" and most pronounced toward Roma immigrants.

[2] As a robustness check this variables was also constructed using only the two first questions that pertain to so-called biological racism. The revised operationalization of the variable did not alter the results

TABLE 1 | Percent of respondents who oppose to immigration of a group (allow *NON* from this group to come and live here)…(%), ordered according to the level of opposition.

	Same race/ethnic group	Jewish people from other countries	Different race/ethnic group	Muslims from other countries	Gypsies from other countries	*N*
Austria	7.7	12.7	15.3	23.5	28.3	1,417
Belgium	8.1	10.7	13.6	20.5	31.9	1,338
Switzerland	1.5	6.0	4.4	14.9	20.5	898
Germany	1.3	2.3	3.7	6.7	12.6	2,457
Denmark	2.0	2.6	6.0	11.3	25.9	1,304
Spain	8.8	12.7	12.5	22.9	29.6	174
Finland	2.5	5.3	8.7	17.9	23.3	1,945
France	6.7	7.2	12.4	14.3	20.4	1,420
United Kingdom	10.2	7.0	14.4	19.4	31.6	1,743
Ireland	9.4	10.9	14.3	25.5	45.1	1,963
Netherlands	5.3	4.1	6.5	14.6	17.3	1,576
Norway	0.8	2.4	1.3	8.3	17.8	1,193
Portugal	13	29.2	18.8	35.5	46.4	1,120
Sweden	0.4	0.9	0.5	3.8	5.0	1,414
Czech Republic	16.8	17.9	29	56.5	63.5	1,891
Estonia	4.2	12	12.2	41.8	51.2	1,133
Hungary	12.4	35.2	32.6	56.3	66.1	1,623
Lithuania	7.6	20.9	12	38.6	50.3	1,967
Poland	6.5	14.2	10.6	34.4	28.7	1,518
Slovenia	6.5	17.0	11.4	22.9	34.0	1,002
Europe	6.5	9.2	11.1	20.2	26.4	30,636

Although opposition to Muslim immigrants is lower than that toward Roma immigrants, it is considerably higher than the level of opposition toward "immigrants of a different race and ethnic group" and toward Jewish immigrants. Opposition to Jewish immigrants is higher than that expressed toward immigrants of a same race and ethnic group but lower than that toward immigrants of a different race and ethnic group, with several exceptions[3].

Specific information regarding the average level of objection (percent of those who checked the "allow none" option) toward the various groups of immigrants in Europe as a whole can be obtained from the values listed in the bottom row of **Table 1**. It is interesting to note that opposition to immigration (i.e., those not willing to admit any immigrants from specific groups) is quite moderate. Specifically, only 6.5 percent of Europeans object immigration of people of the same race or ethnic group as those living in the country, 9.2 percent object to Jewish immigrants and 11.1 percent object to immigrants of a different race or ethnic group. The percent of opposition to Muslim and Roma immigrants are considerably higher than those expressed toward any of the other groups (20.2 and 26.4, respectively). Indeed, the values in **Table 1** attest to the hierarchical order of the level of opposition toward different groups of immigrants with immigrants of the same race/ethnicity being "most welcome" and Muslims and Roma being "least welcome".

The hierarchical order of opposition to groups of immigrants (that are apparent in **Table 1**) leads us to expect that those who object to immigration of one group of immigrants are likely to object to other groups. Furthermore, it is reasonable to expect that those who oppose immigration of the "more welcomed" groups are likely to also oppose immigration of the "less welcomed" groups. To put this expectation to test, we display (in **Table 2**) the overlap between categories of opposition to different groups of immigrants. The findings lend firm support to this expectation. For example, more than 90 percent of respondents who oppose immigrants of a same race and ethnic group object to the admission of any immigrants of different race or ethnicity. Three quarters of those who oppose immigrants of a different race or ethnic group (from most country people) also oppose Muslim and Roma immigrants. More than 90 percent of respondents who object to any Jewish immigrants also object to admission of any Muslim immigrants. Likewise, almost 80 percent of respondents who oppose to immigration of any Muslims also oppose to immigration of any Roma people.

The overlap in opposition to different categories of immigrants makes it difficult to isolate the unique sources that drive opposition toward a specific group. Yet, it is possible that sources that drive opposition to Muslim immigrants (or opposition to immigrants of different race or ethnicity) are different from the sources that drive opposition to immigrants of the same race or ethnicity or Roma. Therefore, it is important

[3]In Portugal, Norway and Sweden as well as in Hungary, Lithuania, Slovenia and Poland, the opposition toward immigration of Jewish people is higher than that toward people of a different race and ethnicity.

TABLE 2 | Percent of those who oppose to immigration (allow none) of each group out of those who oppose to immigration of a certain group.

	Opposition to immigration of same race/ethnic group (allow none)	Opposition to immigration of Jews (allow none)	Opposition to immigration of different race/ethnic group (allow none)	Opposition to immigration of Muslims (allow none)	Opposition to immigration of Gypsies (allow none)
Oppose immigration of….					
Same race/ethnic group	–	41	54	26	20
Jewish people from other countries	58	–	48	43	32
Different race/ethnic group	92	58	–	41	33
Muslims from other countries	80	93	75	–	61
Gypsies from other countries	80	89	77	79	–

to identify and isolate respondents who oppose **to only** one ethno-religious group of immigrants from those who object immigration of all groups or from those who are willing to admit all groups of immigrants. Along the same line of logic, it is also important to identify and isolate respondents who are willing to admit **only** immigrants of the same race or ethnic group but exclude all others. To overcome such identification problems, we constructed a set of mutually exclusive categories of opposition (or admission) to immigrants by ethno-religious origin. The classification scheme resulted in seven categories of respondent's attitudes regarding admission of the various groups of immigrants to the country:

1. *Pro-admission* includes all respondents who do not object to any of the five ethno-religious groups (i.e., willing to admit a few, some or many immigrants).
2. *Total exclusionists* pertain to respondents who oppose to all five ethno-religious groups (by stating "allow none to come and live here" regarding all groups).
3. *Exclusive admission of the same race/ethnic group* consists of respondents, who do not object to immigrants of the same race or ethnic group but object to immigrants from all other ethno-religious groups (i.e., different race/ethnic group, Jewish people, Muslims, and Roma).
4. *Exclusive opposition to a different race/ethnic group* includes respondents who object immigrants of a different race or ethnic group but willing to admit immigrants belonging to all other four ethno-religious groups (i.e., same race/ethnic group, Jewish people, Muslims, and Roma).
5. *Exclusive opposition to Jewish people* contains respondents who object Jewish immigrants but willing to admit immigrants belonging to all other four ethno-religious groups (i.e., same race/ethnic group, different race/ethnic group, Muslims and Roma).
6. *Exclusive opposition to Muslims* includes respondents who object to Muslim immigrants but willing to admit immigrants belonging to all other four ethno-religious groups (i.e., same race/ethnic group, different race/ethnic group, Jewish people, and Roma).
7. *Exclusive opposition to Roma* consists of respondents who object to Roma immigrants but willing to admit immigrants belonging to all other four ethno-religious groups (i.e. same race/ethnic group, different race/ethnic group, Muslims, and Jewish).

Table 3 presents the percent distribution of seven categories of respondents' attitudes. The findings reveal that two thirds of Europeans can be classified as "pro-admission." In other words, substantial numbers of Europeans are willing to accept at least a few people from each one of the five ethno-religious groups. By contrast, only 3.4 percent of Europeans are classified as "total exclusionists." These Europeans flatly oppose to admission of any immigrant by stating "allow none" regardless of the ethno-religious origin of the immigrant. The category of "exclusive admission" is composed of the 1.4 percent of respondents who support only admission of immigrants of the same race and ethnic group (as most country people) but oppose to admission of any person from all other groups. More than eight percent oppose

TABLE 3 | Total and exclusive exclusion/inclusion.

	Percentage (valid and weighted)	Numbers (unweighted)
Pro admission	67.3	17,639
Total opposition	3.4	1,174
Exclusive support for immigration of same race/ethnic group	1.4	569
Exclusive opposition to immigration of Jewish people	0.2	68
Exclusive opposition to immigration of a different race/ethnic group	0.9	234
Exclusive opposition to immigration of Muslims	2.7	785
Exclusive opposition to immigration of Gypsies	8.4	2,808

admission of Roma people but willing to accept immigrants of all other groups, and about three percent exclusively oppose to admission of any Muslim immigrant but are willing to accept immigrants belonging to all other groups. Only 0.9 percent of respondents exclusively oppose immigration of people belonging to an ethnic or racial group that is different from most people in the country, but willing to admit all other groups of immigrants. The percent of people who exclusively oppose immigration of Jewish (0.2) is too small in absolute numbers (68 cases), and thus does not allow further statistical estimation[4]. Although most of the seven categories are relatively small, they have substantive meaning; and the numbers of sampled cases in these categories allow multivariate analysis that enables an evaluation of the unique sources that drive opposition to each specific group of immigrants.

RESULTS: MULTIVARIATE ANALYSIS

The multivariate analysis is aimed at predicting the various categories of attitudes toward admission of the various groups of immigrants (listed in **Table 3**) in order to trace, evaluate, and compare the differential sources that drive opposition toward each group of immigrants. The first stage of the multivariate analysis seeks to answer the following two questions: what are the sources that drive total opposition to immigration (regardless of ethno-religious group) and what are the sources that drive exclusive admission of immigrants of a same race/ethnic group? To answer these questions, we estimated multinomial logit regression model with a four-category dependent variable. The four categories are: (1) Pro-admission as category of comparison; (2) Exclusive admission of immigrants of a same race/ethnic group; (3) Total opposition to immigration, and (4) all other combinations of responses. The last category serves only for control purposes. Therefore, the coefficients for "all other combination of responses" category (which have no substantive meaning) are not presented. The inclusion of such category allows us to keep the total sample when estimating the different models. The estimated coefficients of the multinomial logit equation are displayed in **Table 4**. The coefficients in column 1 and 2 of **Table 4** pertain to the effect of each variable on the relative odds of "total opposition" (i.e., "total exclusionists") and "exclusive admission," respectively, as compared to "pro admission."

[4]This category is eliminated from the multivariate analysis.

TABLE 4 | Multinomial regression predicting odds [Exp(B)] for "total opposition" and "exclusive admission of immigrants of a same race/ethnic group" (Pro admission is category of comparison)[a].

	Total opposition (total exclusionists) (1)	Exclusive admission of immigrants of a same race/ethnic group (2)
Age	1.01*	1.01*
Men	1.09	0.76*
Education	0.89*	0.88*
Insufficient income	1.43*	0.77*
Perceived economic threat	2.11*	1.84*
Perceived cultural threat	1.52*	1.50*
Fear of crime	1.19*	1.14*
Racism	1.40*	2.56*
Have a friend from different ethnic/race origin	0.41*	0.47*
Nagelkerke pseudo R-square	0.44	

[a]*The model includes a series of dummy variables representing each country, UK is comparison category (coefficients are not presented). In addition to "include only same ethnic/race group," total exclusionists and pro-admission, the depended variable also includes category "other combinations" for control purposes only (coefficients are not presented).* $^{*}p < 0.05$.

The data in column 1 demonstrate that the odds of opposing immigration of all ethno-religious groups (vs. supporting admission of all of them) tend to rise with age and to decline with education (with older people being more conservative and people with high education more liberal). The odds for total opposition (total exclusionists) tend to be higher among people with insufficient income (i.e., among economically vulnerable people). Threat of competition in economic and cultural spheres and fear of crime are likely to increase odds for total opposition to immigration, with especially high effect of perceived economic threat [Exp(b) = 2.11]. In addition, odds for "total opposition" tend to increase with level of racist views as evident by the significant and positive coefficients of racism in column 1 of **Table 4**. By way of contrast, intergroup contact tends to decrease "total opposition." That is, the odds for "total opposition" are twice lower among those who have a friend from a different race/ethnic group than among those who do not have such an intergroup contact.

The odds of supporting "exclusive admission" of immigrants of the same race/ethnic group (as compared to pro-admission) are displayed in column 2 of the table. The coefficients for all the predictors included in the model are statistically significant. The analysis reveals that odds for supporting exclusive admission of immigrants of the same race/ethnic group (as compared to the odds of supporting admission of all immigrants) tend to rise with respondents' level of perceived economic and cultural threats, fear of crime and racism. Note that the impact of racism on the

willingness to only admit immigrants of the same race or ethnic group as most country people, but to exclude all other ethno-religious groups of immigrants [net odds are: Exp (B) = 2.56] is more pronounced than the impact of racism on opposing all immigrants [net odds are: Exp (B) = 1.40]. Intergroup contact with members of a different race/ethnic group reduces the odds for the exclusive support of admitting immigrants of the same race/ethnic groups.

The second stage of the multivariate analysis (presented in **Table 5**) seeks to provide answers to the following two questions: First, whether and to what extent the sources that drive opposition to immigration vary across different ethno-religious groups. Second, if such variation exists, what are the sources of opposition that are unique to each specific group of immigrants? The three groups of immigrants on which the present analysis focuses are: people of different race/ethnic group from most country people, Muslims, and Roma.

To provide answers to these questions we estimated three multinomial logit equations. Equation 1 includes a dependent variable with the following four categories: (1) Exclusive opposition to immigrants of a different race/ethnic group from most country people; (2) Total opposition to immigration; (3) Pro-admission as category of comparison; (4) all other combinations of responses (the last category included only for control purposes, and its coefficients are not presented). In Equation 2 "exclusive opposition to immigrants of a different race or ethnicity" (as the first category of the dependent variable) is replaced by "exclusive opposition to Muslim immigrants." In Equation 3, the first category of the dependent variable is "exclusive opposition to Roma immigrants." The estimated coefficients displayed in **Table 5** pertain to the impact of the independent variables on respondents' relative odds of "membership" in each category of opposition (vs. "pro-admission").

The findings reveal that education tends to decrease the odds of opposing each one of the following three groups of immigrants: people of a different race or ethnicity, Muslims and Roma (as compared to the odds of admitting all five ethno-religious groups). By contrast, income and gender do not exert statistically significant effect on the "exclusive opposition" to each one of the three groups of immigrants. Age does not exert an effect on the "exclusive opposition" to immigrants of a different race or ethnicity, but increases "exclusive opposition" to Muslim and Roma immigrants.

Perceived economic and cultural threats tend to increase odds for exclusive opposition to each one of the three groups of immigrants: people of a different race or ethnicity, Muslims, and Roma. Fear of crime tends to increase opposition to immigrants of a different race/ethnic group and Roma immigrants, respectively, but does not exert a net effect on opposition to Muslim immigrants (the coefficient is statistically insignificant and very small). By way of contrast, racism prompts opposition to Muslim and Roma immigrants, as evident by statistically significant and sizable coefficients, Exp (B) = 2.58 and Exp (B) = 2.90, respectively. Curiously, however, racism does not exert a *net* effect on opposition to immigrants of a different race/ethnic group. While intergroup contact reduces the odds

TABLE 5 | Multinomial regression predicting odds [Exp(B)] of "exclusive opposition" to immigrants of different ethno-religious groups (Pro admission is category of comparison)[a].

	Different race/ethnic origin (1)		Muslims (2)		Roma (3)	
	Exclusive opposition to immigrants of a different race/ethnic group from most country people	Total opposition to immigration	Exclusive opposition to Muslim immigrants	Total opposition to immigration	Exclusive opposition to Roma immigrants	Total opposition to immigration
Age	1.00	1.01*	1.02*	1.01*	1.01*	1.01*
Men	0.83	1.10	0.86	1.10	1.09	1.05
Education	0.91*	0.89*	0.93*	0.89*	0.97*	0.88*
Insufficient income	0.93	1.46*	1.09	1.46*	0.91	1.47*
Perceived economic threat	1.39*	2.08*	1.25*	2.08*	1.20*	2.13*
Perceived cultural threat	1.31*	1.50*	1.30*	1.52*	1.19*	1.55*
Fear of crime	1.20*	1.18*	1.02	1.18*	1.13*	1.18*
Racism	1.04	1.39*	2.58*	1.38*	2.90*	1.39*
Have a friend from different ethnic/race origin	1.19	0.42*	0.72*	0.41*	0.77*	0.40*
Nagelkerke pseudo R-Square	0.44		0.43		0.44	

[a]*The model includes a series of dummy variables representing each country, UK is comparison category (coefficients are not presented). In addition to "include only this the group, total exclusionists and pro-admission, the depended variable also includes category "other combinations" for control purposes only (coefficients are not presented).* $^{*}p < = 0.05$

of opposing Muslims and Roma immigrants, it does not exert net effect on opposition to immigrants of a different race/ethnic group (as compared to support for admission of all immigrants).

DISCUSSION

The data demonstrate that level of opposition to immigration in Europe is far from being uniform and is, in fact, hierarchical, with the level of opposition being most extreme toward Muslims and Roma and quite minor toward people of the same ethnic/race groups as well as Jews. The hierarchal order is clearly reflected by the degree of overlap in opposition across groups. For example, Europeans who oppose admission of immigrants of the same race and ethnicity as the people who live in Europe are most likely to oppose admission of Roma and Muslim immigrants. However, Europeans who oppose admission of Roma and Muslim immigrants are not necessarily against admission of immigrants of the same race and ethnicity of the people who live in Europe. These findings are in line with previous research. For example, Strabac and Listhaug (2008) found that the percentage of the majority population in Europe objecting to Muslims as neighbors is higher than that objecting to immigrants (in general) as neighbors (Strabac and Listhaug, 2008). Fontanella et al. (2016, p. 487) suggest that Roma people are the most rejected ethnic group in Europe concluding that "the Roma people continue to be the most discriminated even with respect to migrants and to be classified as a separate reality to which we will not ever get used."

Not only does the level of opposition to immigration vary across the immigrant groups but also the sources that drive opposition to immigration vary across groups. In line with general theoretical expectation, the analysis reveals that the sources of public opposition to immigration can be divided into 2 major categories: universal sources and group-specific sources. Specifically, we suggested that threats of competition and intergroup contact are universal sources while fear of crime and racism are group-specific sources. As expected, threats of competition over socio-economic resources and cultural values of society are found to be universal sources that prompt objection to immigrants regardless of their ethnic or religious origin. However, the findings do not confirm the expectation that intergroup contact reduces exclusionary attitudes toward all immigrant groups. The findings reveal that inter-group contact, similar to racism and fear of crime are, in fact, group-specific sources. Racism and lack of intergroup contact tend to prompt (exclusive) opposition to Muslim and Roma immigrants, but not to immigrants belonging to a different race/ethnic group from most country people. Fear of crime tends to prompt (exclusive) opposition to immigrants of different race/ethnic group and Roma immigrants. However, fear of crime does not appear to increase exclusive opposition to Muslims.

From theoretical point of view, the data presented here lend support to the argument that exclusionary attitudes toward immigrants are driven by multiple sources. Exclusionary views should be viewed and understood not only as a response to competitive threats posed by immigrants to the economic interests of majority population or to cultural values and homogeneity of the society but also by racist views, lack of intergroup contact and fear of crime. Whereas, threats of competition in the economic and cultural spheres increase opposition toward admission of immigrants, regardless of their specific ethnic and religious origin, racist views, lack of intergroup contacts, and fear of crime are group specific. Indeed, the findings presented here suggest that opposition to immigration as a form of anti-immigrant sentiment should be understood within a multi-dimensional framework along multiple sources that vary across the different groups of immigrants.

AUTHOR CONTRIBUTIONS

AG and MS: conceptualization, methodology, writing original draft and writing - review and editing; AG: statistical analysis.

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Why We Should Care About Regional Origins: Educational Selectivity Among Refugees and Labor Migrants in Western Europe

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Immigrant selectivity describes the notion that migrants are not a random sample of the population at origin, but differ in certain traits such as educational attainment from individuals who stay behind. In this article, we move away from group-level descriptions of educational selectivity and measure it as an individual's relative position in the age- and gender-specific educational distribution of the country of origin. We describe the extent of educational selectivity for a selection of Western European destinations as well as a selection of origin groups ranging from recent refugee to labor migrant populations. By contrasting refugees to labor migrants, we address longstanding assumptions about typical differences in the degree of selectivity between different types of immigrants. According to our findings, there are few and only minor differences between refugee and labor migrants. However, these differences vary; and there are labor migrant groups that score similar or lower on selectivity than do the refugees covered in this study. Selectivity differences between refugees and labor migrants therefore seem less prominent than arguments in the literature suggest. Another key finding is that every origin group is composed of varying proportions of positively and negatively selected individuals. In most cases, the origin groups cover the whole spectrum of selectivity, so that characterizing them as either predominantly positively or negatively selected does not seem adequate. Furthermore, we show that using country-level educational distributions as opposed to sub-national regional-level distributions can lead to inaccurate measurements of educational selectivity. This problem does not occur universally, but only under certain conditions. That is, when high levels of outmigration from sub-national regions in which economic opportunities are considerably above or below the country average, measurement inaccuracy exceeds ignorable levels. In instances where researchers are not able to use sub-national regional measures, we provide them with practical guidance in the form of pre-trained machine-learning tools to assess the direction and the extent of the measurement inaccuracy that results from relying on country-level as opposed to sub-national regional-level educational distributions.

Keywords: refugees, labor migrants, new immigrants, educational selectivity, regional inequality

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INTRODUCTION

Individuals who leave their country of origin rarely represent a cross-section of the origin population, but differ in important characteristics from individuals who remain in their home country. Among the most frequently described features are age and gender (Lindstrom and López Ramírez, 2010), health (Weeks et al., 1999; Lu, 2008; Ro et al., 2016), ambition and risk-seeking behaviors (Bonin et al., 2006; Van Dalen and Henkens, 2012) and, crucially, educational attainment (Chiquiar and Hanson, 2005; Feliciano, 2005, 2008; Ibarraran and Lubotsky, 2007; McKenzie and Rapoport, 2010; Grogger and Hanson, 2011; Belot and Hatton, 2012; Ichou, 2014; Lessard-Phillips et al., 2014; Rendall and Parker, 2014; Spörlein, 2014; Spörlein and Kristen, 2018). More than half a century ago, Everett S. Lee succinctly put this notion of immigrant selectivity in his assertion that migrants are "not a random sample of the population at origin" (Lee, 1966, p. 56).

For decades, the nature of this non-random selection of migrants has been subject of debates with some researchers arguing that immigrants are negatively selected in terms of educational attainment while others argue to the contrary. Usually, these assessments are qualified with regard to certain conditions that are expected to shape the degree of educational selectivity, for example, with respect to the type of migration (e.g., Borjas, 1987; Chiswick, 1999), economic and other macro-level conditions (e.g., Jasso and Rosenzweig, 1990; Cobb-Clark, 1993; Van Tubergen et al., 2004; Levels et al., 2008; Dronkers and de Heus, 2010; Spörlein and van Tubergen, 2014) or characteristics that are seen as typical for immigrants such as their ambition or drive to succeed (e.g., Feliciano, 2005; Ichou, 2014). No matter of the argument brought forward, there seems to be a unifying feature to these considerations. That is, educational profiles are seen as indicative for immigrants' integration potential and consequently for the prospects of a successful incorporation into the receiving society (Portes and Rumbaut, 1996; Chiswick, 1999; Van Tubergen et al., 2004; Levels et al., 2008; Dronkers and de Heus, 2010; Spörlein and van Tubergen, 2014). Empirical studies on the consequences of educational selectivity, for example, highlight its relevance for learning the destination language with more positively selected individuals acquiring language skills faster (Spörlein and Kristen, 2018). Studies on the second generation, to date, have mostly examined whether educational selectivity in the parental generation affects the education of their children (e.g., Feliciano, 2005, 2008; Ichou, 2014; Feliciano and Lanuza, 2017; Van de Werfhorst and Heath, 2018). In most cases, the findings confirm that a positive selection in the parental generation fosters children's educational attainment. Yet others have investigated the consequences for immigrants' labor market performance (e.g., Picot et al., 2016).

In this study, we aim at describing educational selectivity for a range of immigrant groups who recently came to Western Europe. We use the geographical term rather broadly to refer to a selection of European countries that in recent decades became important destinations for immigrants. In the immediate past, some of these countries even turned into crucial receiving societies worldwide, with immigration rates surpassing those of classic destinations (OECD, 2016). Based on the available data sources, we are able to study immigrant selectivity in England, Germany, Ireland, the Netherlands and Spain.

In combination with its increase in size, Western Europe's migrant population became much more diverse over time. It now covers individuals of many different origins who migrated for a variety of reasons and under different legal circumstances. In our description of educational selectivity, we focus on refugees from Syria and other conflict regions in South Asia (Afghanistan) and the Middle East (Iraq). We contrast their educational profiles with those of labor migrants and their families from a variety of origins. The available data allows distinguishing between labor migrants from Eastern Europe (Bulgaria, Poland, Romania and the Ukraine[1]) as well as from a range of so-called third countries (i.e., non-EU member states). These countries are located in Africa (Morocco), the Middle East (Turkey), South Asia (Pakistan), and Latin America (Argentina, Bolivia, Brazil, Colombia, Cuba, Ecuador, Peru, and Venezuela). By comparing refugees to labor migrants and their family members, it is possible to assess differences in the degree of selectivity between different types of migrants. Specifically, we can address the longstanding assumption that refugees are less positively selected compared to economic migrants (Chiswick, 1999).

For this descriptive undertaking, we build upon and go beyond prior measurement approaches to selectivity[2]. Much of the literature frames selectivity from the perspective of the receiving society rather than from that of the country of origin. In fact, most empirical studies on migrant selectivity do not rely on data for non-migrants in the origin country. Instead, they refer to macro-level characteristics of the country of origin and/or destination, such as cross-country differences in the level of economic development (e.g., Cobb-Clark, 1993; Levels et al., 2008) or net earning differentials between migrants and majority members in the destination country (e.g., Borjas, 1987). Even studies that explicitly consider the country of origin as the point of comparison are frequently limited by their focus on group-level processes. In this perspective, selectivity is treated as a characteristic of an immigrant group as a whole rather than as an individual-level attribute (e.g., Borjas, 1987; Feliciano, 2005; Ibarraran and Lubotsky, 2007; McKenzie and Rapoport, 2010; Rendall and Parker, 2014; Van de Werfhorst et al., 2014; Ro et al., 2016; Van de Werfhorst and Heath, 2018). This group-level characterization of immigrant selectivity perpetuates a narrative according to which some migrant groups are drawn from the higher end of the educational distribution, whereas the opposite is true for other groups. However, using a measure of selectivity at the group level obscures that immigrants of the same origin may have acquired more or less education than indicated by the overall group value.

Moving away from group-based definitions of selectivity toward a definition at the individual level and therefore toward

[1]The Ukraine is not a member state of the EU, but belongs to Eastern Europe geographically.

[2]The account on measuring educational selectivity in this section as well as in section Measuring Educational Selectivity is based on an earlier presentation of our reasoning (see Spörlein and Kristen, 2018).

a more direct conceptualization of selectivity, Ichou (2014) introduced a measure that indicates the individual migrant's relative position in the educational distribution of the country of origin. This individual-level perspective explicitly acknowledges that an origin group can consist of varying shares of both positively and negatively selected individuals. In fact, migrant groups often consist of individuals covering the whole selectivity spectrum rather than of individuals concentrating on one end or around a certain value of that spectrum.

In this paper, we further refine Ichou (2014) individual-level approach by describing educational selectivity relative to the population in migrants' sub-national region of origin as opposed to the whole population in the country of origin. Our focus on sub-national regional selectivity is driven by two considerations. First, there is substantive variation in educational distributions within origin countries and a narrow focus on country-level distributions obscures this sub-national regional heterogeneity. Second, there are historic cases of migration flows of individuals who had distinct educational profiles and came from confined regions of their origin country rather than from all over the country. If these kinds of emigration patterns are accompanied by sub-national regional variation in educational distributions, selectivity measures that consider a country as a whole—at either the group or the individual level—will be inaccurate. Thus far, this regional nuance has been largely absent from the literature. For ease of presentation, throughout this article, we refer to the sub-national regional level as "regional level."

Our descriptive undertaking entails the attempt to assess and quantify the inaccuracy that is introduced by relying on national averages instead of more fine-grained distributions at the regional level. Starting with the description of the inaccuracy for a range of immigrant groups in different destinations, we intend to address a selection of macro-level conditions associated with the degree of inaccuracy. Moreover, we use machine-learning techniques to estimate its direction and extent. The application allows for an identification of origin countries, in which potential distortions introduced by relying on national level rather than on regional data are likely to occur.

WHY RELATIVE EDUCATION MATTERS (IN ADDITION TO ABSOLUTE EDUCATION)

Readers may wonder whether information on relative education in terms of the position migrants occupy in the educational distribution of their origin country provides additional insights compared to the commonly established strategy of focusing on absolute educational attainment. At least three arguments seem relevant in this context.

First, educational attainment can be a sometimes-noisy indicator of skill levels, which is not easily comparable across countries. That is, two individuals from two different countries who have acquired the same level of absolute education may not necessarily have acquired the same level of skills. One of the reasons for potential discrepancies in this regard is that educational systems differ in their capabilities of conveying competences.

Second, the value a certain degree has in a society varies with the prevalence of this degree. As countries differ in their economic development and, relatedly, in how far the educational expansion has gone, having acquired a medium or higher degree may mean very different things across contexts. This consideration seems especially relevant for migrants from less developed countries who settle in modern, highly industrialized societies.

Third, an individual's relative education might represent a range of latent, usually unmeasured characteristics and resources that are expected to influence immigrants' incorporation into the receiving societies (Spörlein and Kristen, 2018). These unmeasured traits include migrants' motivation and their drive to succeed (Feliciano, 2005). Selectivity may also stand for other skills such as cognitive competences (Chiswick and Miller, 2001) or other academically useful resources (Feliciano, 2008; Ichou, 2014). In addition, the status position immigrants held prior to migration may continue to be relevant for their perceptions and behaviors, especially when the actual absolute status position in the destination country is lower than that held in the origin country (Ichou, 2014; Feliciano and Lanuza, 2017). In these instances, individuals drawn from higher positions in the origin country's status hierarchy likely experience status inconsistency. This perceived mismatch could be a motivating factor that triggers investments aimed at improving upon lower post-migration status. Considering migrants' relative education may thus allow capturing characteristics typical for a higher status position that would go unnoticed when focusing exclusively on absolute education.

Taken together, we argue that combining information on absolute education with a relative measure of educational attainment that records the individual's position in the educational hierarchy of the origin country allows for a more accurate description of the educational composition of migrant populations. In addition, by considering relative education, it is possible to address attributes and characteristics that are often overlooked or not covered in data collections, but which nevertheless may matter for migrants' and their children's prospects in the destination country.

SELECTIVITY PROFILES OF REFUGEES AND LABOR MIGRANTS

The notion that labor migrants and refugees differ in their selectivity profiles was put forward in two major contributions in economics (i.e., Borjas, 1987; Chiswick, 1999), which became an important source also for the sociological literature. Notably, Chiswick (1999, p. 181) characterized labor or economic migrants as "tending on average to be more able, ambitious, aggressive, entrepreneurial, or otherwise more favorably selected than similar individuals who choose to remain in their country of origin." They are contrasted with individuals "for whom other motives are important such as tied movers, refugees, and ideological migrants" (Chiswick, 1999, p. 181). According to his reasoning, the difference between labor migrants and refugees boils down to the motive to migrate. That is, individuals who

strive to improve their economic situation should be more positively selected than those who respond primarily to push-factors of migration such as the refugees covered in our study (i.e., Afghans, Iraqis, and Syrians) who mostly have left their origin countries due to violent conflict and war.

Borjas (1987) provides a different view, which is influenced by the refugee movements during the Cold War. He expects that a communist takeover and the subsequent wealth redistribution negatively affects the more entrepreneurial-minded segments of the local population and motivate them to emigrate (Borjas, 1987, p. 534). Hence, for this specific historic case of refugee movement, Borjas predicted a positive selection of refugees; at least, he did not assume that they differ from labor migrants.

The literature on immigrant selectivity is dominated by the notion of migration motives being an important reason for selectivity differences between labor migrants and refugees. Empirical studies investigating his idea can be grouped into two strands. One strand is addressing the extent and direction of selectivity (e.g., Jasso et al., 2004; Feliciano, 2005; Grogger and Hanson, 2011; Lessard-Phillips et al., 2014); the other strand is using selectivity arguments to study differences in integration outcomes (e.g., Van Tubergen et al., 2004; Levels et al., 2008; Dronkers and de Heus, 2010; Spörlein and van Tubergen, 2014).

Regarding the first strand, Jasso et al. (2004) address immigrants' health and report particularly negative health selectivity among refugees. This reasoning could also be relevant for the refugees covered in our study, who, in addition to their experience of war and conflict, often fled under dangerous and potentially traumatizing conditions.

Moving to educational selectivity, Feliciano (2005) study provides a contrasting picture to the assumption of negative selectivity among refugees. She shows that virtually all large origin groups present in the United States are on average positively selected, including migrant groups, in which political refugees (e.g., from Cuba or Iran) play an important role. However, in contrast to our study, the refugees covered in her analyses mostly have not been leaving their home countries during a war.

Extending the scope of destination countries to other English-speaking and European societies, Grogger and Hanson (2011) provide indirect evidence for the idea that refugees are negatively selected by showing that migrants who arrive in countries with more liberal refugee and asylum policies tend to be less skilled. Lessard-Phillips et al. (2014) pursue a similar route by comparing selectivity profiles of immigrants in countries with small refugee populations to selectivity profiles of immigrants in countries with larger refugee populations. Their results are ambiguous for two important host countries for refugees, namely, Finland and Sweden. For Finland, they report predominantly positive selectivity patterns; for Sweden, the results point to a slightly positive or a negative selectivity.

The second strand of research uses selectivity arguments to inform analyses of differences in integration outcomes across immigrant groups, often from a cross-national perspective. This literature frequently refers to the reasoning of Borjas (1987) and Chiswick (1999) and points to macro-level indicators that are expected to reflect selectivity differences between migrant populations. Refugee streams, for example, are approximated by the degree of political suppression in the origin countries. Immigrants from these countries should be less positively selected and therefore less successful in their host societies. This indirect approach to immigrant selectivity is accompanied by mixed evidence. Migrants from countries with high levels of political suppression are less likely to be employed (Van Tubergen et al., 2004), and their children score lower in math (Levels et al., 2008). At the same time, political suppression seems to be unrelated to migrants' occupational status (Spörlein and van Tubergen, 2014) and to their offspring's science test scores (Dronkers and de Heus, 2010).

To summarize, both strands of research rely on group-level characterizations of immigrant populations as either positively or negatively selected. They use a range of different measures of selectivity of which most are indirect and based on macro-level characteristics. Overall, there seems to be inconsistent evidence and little agreement in the empirical description of selectivity of refugee populations and of the differences to labor migrants. In the following, we provide an overview of measurement approaches and address potential solutions to the problem of using aggregate and indirect methods to describe and analyze immigrant selectivity.

MEASURING EDUCATIONAL SELECTIVITY

Much of the existing literature frames selectivity from the perspective of the destination countries. A prominent example refers to the aftermath of the period of labor recruitment in Western Europe in the 1960s, when many immigrants worked in low-skill jobs. Since then, it was often assumed that these immigrants were negatively selected in terms of their human capital. This assessment was usually made in comparison to the majority population in the destination country rather than in comparison to the populations in the countries of origin. However, for a sending country in which the average level of education is lower, a medium educational degree is relatively more valuable than it is in a context in which the average level of education is higher and where most individuals complete at least a medium degree. In other words, immigrants who do not have a high education according to the standards in the destination country may nonetheless be quite selective relative to the general population in their home countries (Lieberson, 1980, p. 214).

Still, most empirical studies on selectivity do not rely on data for non-migrants in the country of origin. Instead, they attempt to capture selectivity by referring to macro-level attributes of the country of origin and/or destination. Typical examples of this approach include the distance between the origin and the destination country, income inequality or relative levels of economic development (e.g., Borjas, 1987; Jasso and Rosenzweig, 1990; Cobb-Clark, 1993; Van Tubergen et al., 2004; Levels et al., 2008; Dronkers and de Heus, 2010; Spörlein, 2014; Spörlein and van Tubergen, 2014). Indicators of this kind provide indirect approximations of educational selectivity. More direct measures, in contrast, compare migrants with those who remain in the country of origin (e.g., Feliciano, 2005; Grogger and Hanson,

2011; Belot and Hatton, 2012; Lessard-Phillips et al., 2014). Because they rely on databases that provide information about the populations who did not emigrate, these measures are better suited to capturing differences between immigrants and the population in the country of origin.

Even studies that explicitly consider the country of origin as the point of comparison are frequently limited in that they treat selectivity as a characteristic of an immigrant group as a whole rather than as an individual-level characteristic (e.g., Borjas, 1987; Feliciano, 2005; Ibarraran and Lubotsky, 2007; McKenzie and Rapoport, 2010; Rendall and Parker, 2014; Van de Werfhorst et al., 2014; Ro et al., 2016; Van de Werfhorst and Heath, 2018). Using a measure of selectivity at the group level obscures that migrants from the same country of origin may have acquired more or less education than indicated by this overall group value. As many immigrant groups will consist of varying shares of positively and negatively selected individuals, these measures yield rough and sometimes overly general assessments. They are especially problematic for groups with highly dispersed or with non-normal educational distributions of educational attainment. For example, consider a bimodal distribution in which a substantial share of the population has received little education while another substantial share is well educated. In this case, an average selectivity measure at the group level will misrepresent the group's overall educational composition. As we will demonstrate later on, distributions of this kind are not exceptional, but occur rather frequently.

One way to avoid these problems is to move away from group-based definitions of selectivity toward a definition at the individual level and therefore toward a more direct conceptualization. Along these lines, Ichou (2014) recently introduced a selectivity measure that indicates the individual migrant's relative position in the educational distribution of the country of origin. We create this measure by first assigning each immigrant to the appropriate educational distribution in the country of origin and thereby allowing a comparison to individuals of the same age and gender who did not migrate. In a next step, we calculate each individual's position in the relevant educational distribution. This individual-level approach not only goes beyond overly general findings that some groups are negatively selected while the reverse is true for others, but it also acknowledges that an origin group is composed of varying proportions of both positively and negatively selected individuals.

Although the implementation of a direct individual-level measure of selectivity reflects a significant step forward, its application may not necessarily take into account variation in educational distributions within origin countries. At the same time, within-country differences in educational distributions are quite frequently substantial. They are related to differences in the socio-economic structure of the population; and they can be a result of regional disparities in educational opportunities (e.g., regarding the quality of educational input or the distances to different kinds of schools; Ulubaşoglu and Cardak, 2007; Qian and Smyth, 2008). In addition, there are cases of migration flows from confined regions of their country of origin. A prominent example refers to Turkish labor migrants who arrived as "guest workers" in different Western European destinations between 1961 and 1974; they originated mostly from rural areas in middle Anatolia (Guveli et al., 2016). Another important example concerns the migration stream between Mexico and the United States, which is dominated by Mexicans from rural areas (Ibarraran and Lubotsky, 2007; Rendall and Parker, 2014). In general, regional variation in outmigration rates seems to be greater in countries, in which the opportunity structure substantially differs across regions (Rathor and Premi, 1986; Portnov, 1999; Heidenreich and Wunder, 2008; Enflo and Rosés, 2014). Given this typical combination of higher rates of outmigration from regions that tend to be further away from the national average, the construction of selectivity profiles based on national averages seems problematic. It can yield inaccurate assessments of the degree of educational selectivity.

DATA AND METHODS

Destination and Origin Country Data on Educational Attainment

The envisaged empirical analyses make large demands on the data sources, both for the countries of origin and destination.

To our knowledge, in the Western European context, currently only three data sources include information on immigrants' regional origin. The empirical account, therefore, is limited to the receiving societies comprised in these data sets. These countries are Germany, England, Ireland, the Netherlands and Spain.

The first data set is the *IAB-BAMF-GSOEP Survey of Refugees in Germany* (IBS-RS.) With a total sample of roughly 4,500 individuals aged 18 and older, it covers the largest refugee origin populations who arrived in Western Europe between 2013 and 2016 (Brücker et al., 2016). Although Germany is only one receiving context for refugees, it is by far the largest recipient with more than half of the total refugee population heading for Europe eventually settling there (Bundesministerium des Inneren., 2016; Eurostat, 2016).

Second, information on labor migrants comes from the first wave of the two-wave panel SCIP (*Socio-Cultural Integration Processes among New Immigrants in Europe*; Diehl et al., 2015; Gresser and Schacht, 2015). The data covers recent migrants in England, Germany, Ireland and the Netherlands. Around 8,000 individuals, aged 18 to 60, were surveyed in 2010/2011. They have been staying in the respective destination country up to 18 months. The origin groups included in SCIP come from countries with which the destinations have shared a history of labor recruitment (i.e., Turks in Germany and the Netherlands, Moroccans in the Netherlands) or have had former colonial ties (i.e., Pakistanis in England). In addition, the data reflect recent flows of labor migrants from Eastern Europe (i.e., Poles in all 4 countries).

Third, we include *The National Immigrant Survey of Spain* (ENI) from 2008 as an additional source of data on labor migrants (Reher and Requena, 2009). It covers around 15,500 foreign-born immigrants 16 years of age and older who have lived in Spain between 1 and 8 years. We exclude immigrants who completed

their education in Spain. During the period that is represented in this dataset (1998–2006), Spain saw a massive increase in migrant stock, which rose from around 2 to almost 10 percent. The origin group composition reflects the immigration patterns of this period, in which immigration from Latin America, North Africa and Eastern Europe dominated (Reher and Silvestre, 2009).

Table 1 provides information on the various data sources including a brief description of the sampling procedures as well as a list of the various migrant groups covered. The analyses are confined to origin groups with at least 100 cases. Distributions of the key indicators are depicted in **Tables S1, S2.**

Table 1 reveals that information on refugees is available only for Germany (IBS-RS), whereas labor migrants can be studied in all five destinations. In principle, both the SCIP and ENI—the two data sources we rely on to study labor migrants—could also include refugees. Using information on migration motives, it turned out that <0.5% of SCIP respondents indicated migrating for political reasons, whereas none of the respondents did so in the Spanish data. In addition, none of the origin countries in these two data sets was engaged in a war or other forms of major violent conflicts during the respective immigration periods, which might have contributed to sizable refugee streams. Taking together the negligible numbers of migrants who indicated political migration motives and the absence of violent conflicts leads us to conclude that the SCIP and ENI data provide a solid foundation to study labor migrants and their family members.

Moreover, two of the three data sets focus exclusively on new immigrants (IBS-RS and SCIP), while the third (ENI) includes recently arrived individuals as well as immigrants with longer durations of stay. Additional variation is introduced with regard to the immigration periods covered by the different sources. Finally, given that new migrant populations are often difficult to sample because sampling frames are not always available, sampling strategies differ across and partly also within the data sets depending on the destination country and the immigrant groups considered. For these reasons, we do not claim to come up with a fully comparable empirical account across migrant groups and destinations.

To consider region-, gender- and age-specific educational distributions, we rely on a variety of data sources. The regionalized and country-level distributions are constructed based on micro data from the IPUMS-International project (Integrated Public Use Microdata Series International), which collects and harmonizes census data from a host of different countries, the UNICEF-MICS (Unicef Multiple Indicator Survey), the DHS (US Aid Demographic and Health Survey) Program, the EU-LFS (European Labor Force Survey) and the Turkish Statistical Institute. **Table 2** lists the data sets for the different countries of origin. Whenever possible, regional classifications are based on the first-level administrative divisions published by the International Organization for Standardization (ISO). For six of the groups, the origin data required us to aggregate administrative divisions to achieve comparability (see **Table 2** for more information).

The Selectivity Measure: Relative Education

In the origin and destination country data likewise, educational attainment is measured by four categories based on a variant of the *International Standard Classification of Education* (ISCED-97). We distinguish between "primary completed" (ISCED 0, 1), "some secondary" (ISCED 2), "secondary completed" (ISCED 3, 4), and "tertiary completed" (ISCED 5, 6). Reducing the information on educational attainment by combining categories is unavoidable given the cross-national comparative scope of the analyses and the use of many different data sources.

For the refugee populations in the IBS-RS data, educational attainment was measured in more detail. Consequently, for this group we are able to provide a description of selectivity based on the ISCED-97 classification without collapsing ISCED 0 and 1 as well as ISCED 3 and 4 into one category. We will present this more detailed specification together with the less detailed measure on which we have to rely for all other groups. This comparison allows illustrating the impact ostensibly minor changes in core measurements can have for the assessment of selectivity.

The coding of immigrants' education in the destination country data may be less problematic than it is in other instances. This is because the three surveys IBS-R, SCIP, and ENI explicitly address immigrants and therefore do not implement measures that are designed to reflect the degrees obtained in the destination country. Quite to the contrary, both the IBS-R and the SCIP data, which target recently arrived immigrants, ask for the educational degrees that are typical for each of the origin countries. The Spanish data set ENI includes information on the highest level of studies acquired in the country of origin. It is measured with an open question. This proceeding does not seem to force respondents either to assign their qualification to a degree that is typical for Spain.

In the origin country data, age is categorized into ten 5-year units covering individuals aged 15–64 years. To give the reader a sense of the number of educational distributions that are taken into account, consider an exemplary origin country with 10 regions. Then for each region, we construct 2 [gender categories] * 10 [age categories] = 20 reference distributions. For the 10 regions, these distributions add up to 200 reference distributions.

Combining destination with origin data enables us to create an individual-level measure of selectivity by (1) assigning each immigrant to the appropriate gender- and age-specific educational distribution in the country of origin and subsequently (2) calculating his or her relative position in the reference distribution. The resulting index of selectivity represents the percentage of individuals with a lower level of educational attainment compared to the individual migrant plus half the percentage of individuals with the same level of education; this calculation positions the immigrant in the center of the respective educational category. Put differently, this measures records an individual's quantile position in the origin country's gender- and age-specific educational distribution.

The measure of relative education ranges from 0 to 1 and allows for a straightforward interpretation. For example, an index of selectivity of 0.6 indicates that 60 percent of the population

TABLE 1 | Destination country data.

Data set	Duration of stay	Period of immigration	Sampling	Destination country	Immigrant groups
IAB-BAMF-GSOEP Survey of Refugees in Germany (IBS-RS)	New immigrants: Up to 3 years (>90 percent no longer than 2 years)	2013–2016	Random sample of Central Register of Foreigners (AZR); oversampling of groups who had a higher likelihood of staying (i.e., Afghans, Iraqis and Syrians), women and individuals older than 30	Germany	Refugees from - South Asia/Middle East (Afghanistan: $n = 460$, Iraq: $n = 485$, Syria: $n = 2{,}046$)
Socio-Cultural Integration Processes among New Immigrants in Europe (SCIP)	New immigrants: Up to 18 months	2008–2010	Respondent-driven sampling in London (RDS)	England	Labor migrants from - South Asia (Pakistan: $n = 634$) - Eastern Europe (Poland: $n = 479$)
			Respondent-driven sampling in Dublin (RDS)	Ireland	Eastern Europe (Poland: $n = 982$)
			Stratified random sample from register data in five large cities	Germany	Eastern Europe (Poland: $n = 1{,}272$) - Middle East (Turkey: $n = 981$)
			Stratified random sample from national register data	Netherlands	- Africa (Morocco: $n = 221$) - Eastern Europe (Bulgaria: $n = 315$, Poland $= n = 372$) - Middle East (Turkey: $n = 562$)
The National Immigrant Survey of Spain (ENI)	New immigrants and immigrants with longer durations of stay: At least 1 year up to 8 years	1998–2006	Random household sample of foreign-born residents from register data	Spain	Labor migrants from - Africa (Morocco: $n = 404$) - Eastern Europe (Bulgaria: $n = 260$, Romania: $n = 1{,}109$, Ukraine: $n = 163$) - Latin America (Argentina: $n = 389$, Bolivia: $n = 295$, Brazil: $n = 158$, Colombia: $n = 641$, Cuba: $n = 100$, Ecuador: $n = 932$, Peru: $n = 139$, Venezuela: $n = 113$)

All data sets are accessible to researchers.

in the country of origin has acquired less or the same level of education as the individual migrant. In terms of the relative position in a distribution, we would also say that this person is positively selected, while a value below 0.5 would point to a negative selection.

Additional Country of Origin Regional Data: Economic Conditions

In the second part of our study, we focus on the inaccuracy that is introduced when using country-level as opposed to regional-level data. We pursue this route to provide researchers with an idea of the extent of the inaccuracy for situations, in which regional information is not available. The inaccuracy is measured as the difference between two versions of relative education—one measured at the country level and one at the regional level.

The extent and the direction of the inaccuracy is likely related to regional disparities in educational opportunity structures and to regional outmigration. We expect the measurement inaccuracy to be more severe for countries, in which regional educational distributions differ from those of the overall country. For regions, in which the average education is considerably below the country mean, country-level measures will likely underestimate the extent of selectivity resulting in a "negative" inaccuracy. For illustration purposes, consider an individual who has acquired a secondary degree (ISCED 2) and resides in a region with subpar educational opportunities. Since only few of her peers will have completed a higher degree, her medium attainment will result in a higher score on relative education in that region. However, were we to compare her with the national average, where secondary education is the norm, she will score lower on relative education. The difference between these two measurements (i.e., the inaccuracy, which corresponds to subtracting the larger regional-level selectivity value from the smaller country-level value) will be negative. Conversely, we expect a "positive" inaccuracy (i.e., overestimating the extent of selectivity) for regions above the country mean, because in these contexts higher levels of absolute educational attainment will result in values of relative education that are more moderate. Note that in the absence of data on regional educational opportunity structures, we approximate these ideas by referring to the regional economic situation.

In addition, regional outmigration serves as a weighting factor, which does not exert a direct effect on the inaccuracy, but which is important as it can skew analyses of selectivity. For example, consider migrants from a region, in which the measurement inaccuracy is large. Assume in addition that individuals from this region rarely leave so that their outmigration rate is close the zero. The few individuals who do migrate are likely unproblematic in their contribution to the inaccuracy, as they do not show up in large enough numbers to distort analyses of the extent of educational selectivity.

TABLE 2 | Origin country data on educational attainment.

Country	Year	Source	Sample size (in thousands)	*N* administrative units
Afghanistan	2011	MICS	86	8[a]
Argentina	2010	IPUMS-I	3.937	24
Bolivia	2004	DHS	17	9
Brazil	2010	IPUMS-I	9.693	6[a]
Bulgaria	2009	EU-LFS	14	6
Colombia	2005	IPUMS-I	3.643	11[a]
Cuba	2006	MICS	27	4
Ecuador	2010	IPUMS-I	1.269	7[a]
Iraq	2011	MICS	238	18
Morocco	2004	IPUMS-I	1483	14[a]
Pakistan	2013	MICS	17	6
Peru	2007	IPUMS-I	2.585	25
Poland	2011	IPUMS-I	3.194	16
Romania	2011	IPUMS-I	1.992	42
Syria	2006	MICS	96	14
Turkey	2011	TurkStat	54.000	82
Ukraine	2005	MICS	29	5[a]
Venezuela	2000	IPUMS-I	2.306	22

[a]*Data based on an aggregated version of the country's administrative division (aggregation to achieve correspondence in the measures of regional origin between origin and destination data sources); DHS, US Aid Demographic and Health Survey; EU-LFS, European Labor Force Survey; IPUMS-I, Integrated Public Use Microdata Series International; MICS, Unicef Multiple Indicator Cluster Survey; TurkStat, Turkish Statistical Institute. All data sets are accessible to researchers.*

Based on this reasoning, we consider (a) the economic opportunity structure at the regional level, (b) the economic opportunity structure at the country level, and (c) regional outmigration rates. While the measure of regional differences in economic opportunity structures capture within-country differences, the use of country-level measures allows accounting for potential additional cross-country patterns (e.g., the average inaccuracy may be higher in countries with high levels of within-country inequality in regional opportunity structures). The first measure (a) is based on regional information of the gross domestic product (GDP) and unemployment rates. **Table 3** lists all data sources that were used for the different countries of origin. With the exception of Iraq, for which these measures were not available, we are able to include all countries. To build the second measure (b), we applied population weighted within-country standardization to make the information on GDP and unemployment rates comparable across origin countries. Subsequently, we calculated the population-weighted coefficient of variation (CV) as the standard deviation of a country's regional GDP (and unemployment rate) divided by the country's average GDP (and unemployment rate). Higher values on the CV of the GDP and the unemployment rate represent higher levels of regional inequality. The third measure (c) refers to differences in regional outmigration odds (ROO). They are measured using the ratios of relative regional outmigration based on our destination datasets and relative regional population based on our origin country datasets:

$$ROO = \frac{\frac{m_{ij}}{M_i}}{\frac{s_{ij}}{S_i}} \quad (1)$$

where m refers to the number of emigrants from origin country i and its region j, M to the number of total emigrants from country i, s to the number of individuals living in country i and region j and S to the total population of country i. ROO values above 1 indicate higher outmigration from a specific region than expected assuming outmigration proportional to a region's size whereas values below 1 indicate the opposite. Values equal to 1 indicate that outmigration is exactly proportional to the region's size.

Finally, to analyze the inaccuracy, we construct a dataset where each row records the inaccuracy for each cross-classification of destination country, origin group, origin region, age, sex and educational attainment. In total, this data set comprises of 5,674 inaccuracy measurements for 23 origin group-destination country combinations (i.e., 18 origin groups of which four—Bulgarians, Moroccans, Poles, and Turks—are present in multiple destinations; see **Table 1**).

Methods

In order to analyze the inaccuracy in measuring educational selectivity, we rely on a number of machine learning tools. In contrast to a conventional theory-driven approach, in which a set of hypothesized relationships is specified, the goal of this strategy is to account for as much of the inaccuracy as possible. Hence, we do not "impose" unnecessary restrictions on the data by a priori hypothesizing about how our constructs are related to the inaccuracy. Instead, we pass the data to a number of methods with the objective to model the data in such a way that it minimizes prediction error when given new data. This proceeding may be helpful when researchers are planning a study, which involves measures of educational selectivity. In

TABLE 3 | Origin country data on regional GDP and unemployment rates.

Country	Source
Afghanistan[a]	https://openknowledge.worldbank.org/bitstream/handle/10986/27407/638720WP0Afgha00Box0361531B0PUBLIC0.pdf?sequence=1&isAllowed=y
Argentina	https://www.indec.gov.ar/nivel4_default.asp?id_tema_1=3&id_tema_2=9&id_tema_3=138 https://www.indec.gov.ar/nivel4_default.asp?id_tema_1=4&id_tema_2=31&id_tema_3=58
Bolivia	https://www.ine.gob.bo/index.php/producto-interno-bruto-departamental/producto-interno-bruto-departamental-5
Brazil	https://ww2.ibge.gov.br/estadosat/perfil.php?sigla=ro
Bulgaria	http://www.nsi.bg/en/content/5528/employed-persons-regions http://www.nsi.bg/en/content/5493/gdp-regions
Colombia	http://www.dane.gov.co/index.php/en/statistics-by-topic-1/regional-information/
Cuba[b]	http://www.one.cu/aec2011/esp/07_tabla_cuadro.htm
Ecuador	https://www.bce.fin.ec/index.php/component/k2/item/763
Morocco[a]	http://rgphencartes.hcp.ma/
Pakistan	https://en.wikipedia.org/wiki/List_of_Pakistani_provinces_by_gross_domestic_product http://www.pbs.gov.pk/sites/default/files/Labour%20Force/publications/lfs2013-14/t38-pak-fin.pdf
Peru	http://www.inei.gob.pe/estadisticas/indice-tematico/national-accounts/ http://www.inei.gob.pe/estadisticas/indice-tematico/ocupacion-y-vivienda/
Poland	https://geo.stat.gov.pl/imap/
Romania	http://edemos.insse.ro/portal/
Syria[c]	http://www.cbssyr.sy/index-EN.htm
Turkey	https://biruni.tuik.gov.tr/bolgeselistatistik/sorguSayfa.do?target=degisken
Ukraine	http://www.ukrstat.gov.ua/
Venezuela	http://www.ine.gov.ve/documentos/see/sistesisestadistica2008/estados/distritocapital/index.htm http://www.ine.gov.ve/index.php?option=com_content&view=category&id=103&Itemid=40

[a]Regional GDP based on aggregated poverty rates. [b]Regional unemployment data based on aggregated social expenditure. [c]Regional GDP based on aggregated frequency data of incomebrackets.

these instances, it is important to know whether country-level measurements of educational distributions will suffice or whether regional measures are required. We train the algorithms on a training data set, which is based on an 80% random sample of the whole data set of inaccuracy measurements. The remaining data comprises the test set, which we use in the very end of the model-training phase to test the performance of the algorithms used.

We rely on three popular supervised learning methods to model the inaccuracy: random forests, the XGBoost algorithm and artificial neural nets. Random forests "grow" a large number of regression trees using random samples of the data and the predictors (Breiman, 2001). Random forests are a type of ensemble learning method, where the results of a larger number of "weak learners" are combined to obtain a better predictive performance than would be achievable by relying on a weak learner alone. In the case of random forests, a regression tree represents the weak learning method. Each regression tree creates root nodes that split the data into disjunctive groups based on values of the predictor variables. Variables used to split nodes closer to the root of the tree are more important than variables used to split further away where importance is defined as the largest decrease in the residual sum of squares. The panel on the left-hand side of **Figure 1** presents the result of one such tree: for this specific tree, GDP is at the root of the regression tree splitting the data into those regions that score above (right branch) and below (left branch) values of 0.3. Following the right branch would help us understand comparatively small positive inaccuracy, whereas following the left branch would do the same for negative inaccuracy values. For example, we are likely to encounter a substantial average inaccuracy of 0.17 for immigrants from regions with a GDP of equal to or above 0.4 (i.e., following the right branch: GDP<0.3? No! -> GDP<0.4? No! -> GDP>=0.4? No! -> inaccuracy = 0.17). In total, our random forest grows 500 of these trees and combines their estimates to make predictions.

The XGBoost algorithm represents a variation of the random forests idea. Whereas, random forests are a type of "bagging" method where regression trees are estimated effectively in parallel and combined at the end, XGBoost is an example for a tree-based "boosting" method (Chen and Guestrin, 2016). Boosting methods iteratively learn from "mistakes" by specifically focusing on reducing the residual error from the previous estimation step (i.e., the previously estimated regression tree).

Lastly, artificial neural nets are typically referred to as "black box" methods where a set of inputs passes through a series of hidden layers to predict the output (Goodfellow et al., 2016). The panel on the right-hand side of **Figure 1** provides a visual representation of the artificial neural network used in this study. On the left, the input layers appear. Every input is connected to all nodes of the first hidden layer by a set of weights. In essence, every node represents a regression equation whose output passes through an activation function before being "passed along the network." A hidden layer can thus be thought of as stacked regression models. The first hidden layer is also connected to all nodes of the second hidden layer, which is connected to the output layer predicting the inaccuracy. This forward pass through

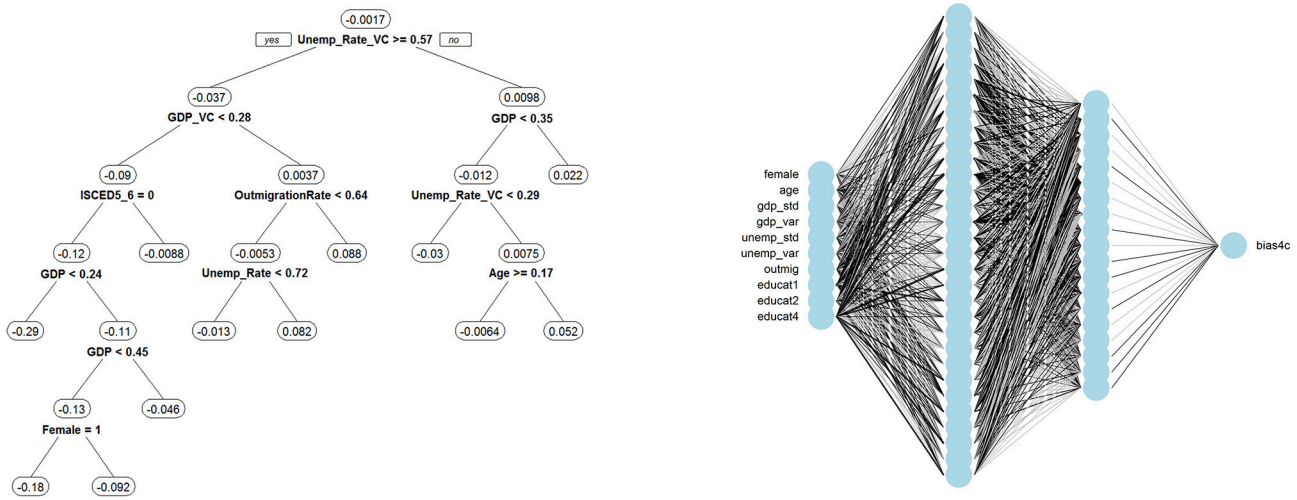

FIGURE 1 | Visual presentation of selected machine-learning results. Regression tree and neural network. Black lines in the neural network connecting nodes indicate positive relationships whereas gray lines refer to negative relationships; the degree of line darkness indicates association strength.

the network is used in the so-called backpropagation step to adjust iteratively the weights connecting the various layers in order to minimize prediction error in the inaccuracy measures.

Each method has a certain set of hyperparameters that can be tuned to improve model performance (e.g., the number of trees grown in a random forest or the number of hidden layers and their nodes in artificial neural nets). We thus drew another 30 percent sample from the training set to serve as a cross-validation test set for hyperparameter tuning using grid-search methods (Goodfellow et al., 2016; Géron, 2017). All models and an extensive tutorial, which provides information on how to use them to predict the inaccuracy using new data is made freely available to researchers on the first author's GitHub (https://github.com/chspoerlein/selectivity_tutorial).

RESULTS

Describing Educational Selectivity

Before presenting the main findings, we first illustrate the relationship between absolute and relative education. **Figure 2** depicts boxplots of the distributions of relative education for each category of absolute education and for a subset of the three numerically largest origin groups from each geographic region (with the exception of Africa; the full set of boxplots for all migrant groups is included in **Figure S1**).

For each origin group, the medians are connected with a red line to visualize the general relationship. Unsurprisingly, absolute and relative education are strongly positively correlated ($r \sim 0.81$) with individuals in the higher ISCED categories also scoring higher on the measure of relative education. The key aspect depicted in **Figure 2** relates to the variation of relative education *within* each category of absolute education. That is, the scores on relative education are highly variable, especially among the mid-level educational categories (ISCED 2 and 3–4). Syrian refugees with ISCED 2 represent a good example for this phenomenon. Their median relative education is at around 0.60 but the box (i.e., the interquartile range) covers a 25-point interval ranging from around 0.45 to 0.70. In other words, the value or meaning of education is context-depended: individuals with nominally the same (medium) degree find themselves in very different positions in their origin region's educational hierarchy. Among labor migrants, individuals from Argentina with ISCED 2 represent a similarly impressive example with a median of 0.40 and an interquartile range, which spans a 25-point interval from 0.25 to 0.50. In general, an individual's position in the origin region's educational hierarchy is considerable more variable for the mid-level educational categories opposed to the lowest and highest categories.

Figure 3 presents the selectivity profiles separately for labor migrants and refugees[3]. It also covers gender differences. Each row represents one origin group-destination country combination and their respective density distribution of relative education (x-axis) grouped into geographic regions. The red reference line indicates the 0.5 threshold. In distributional terms, we would say that individuals above this threshold are positively selected, while immigrants below this threshold are negatively selected. Within the group of labor migrants and refugees as well as within each geographic region, origin groups are ranked according to the percentage of positively selected immigrants. This share is also included in the numbers following the indication of the origin group-destination country combination. Note that due to differences in the measurement of educational attainment discussed in The Selectivity Measure: Relative Education, the profiles for refugees are presented using the four-category ISCED variant, which is also applied to labor migrants, and in addition using a more detailed six-category ISCED variant that is only available for refugees. The discussion

[3]**Figure S2** in the Supplementary Material presents these findings ordered according to the distributions rather than according to geographic regions.

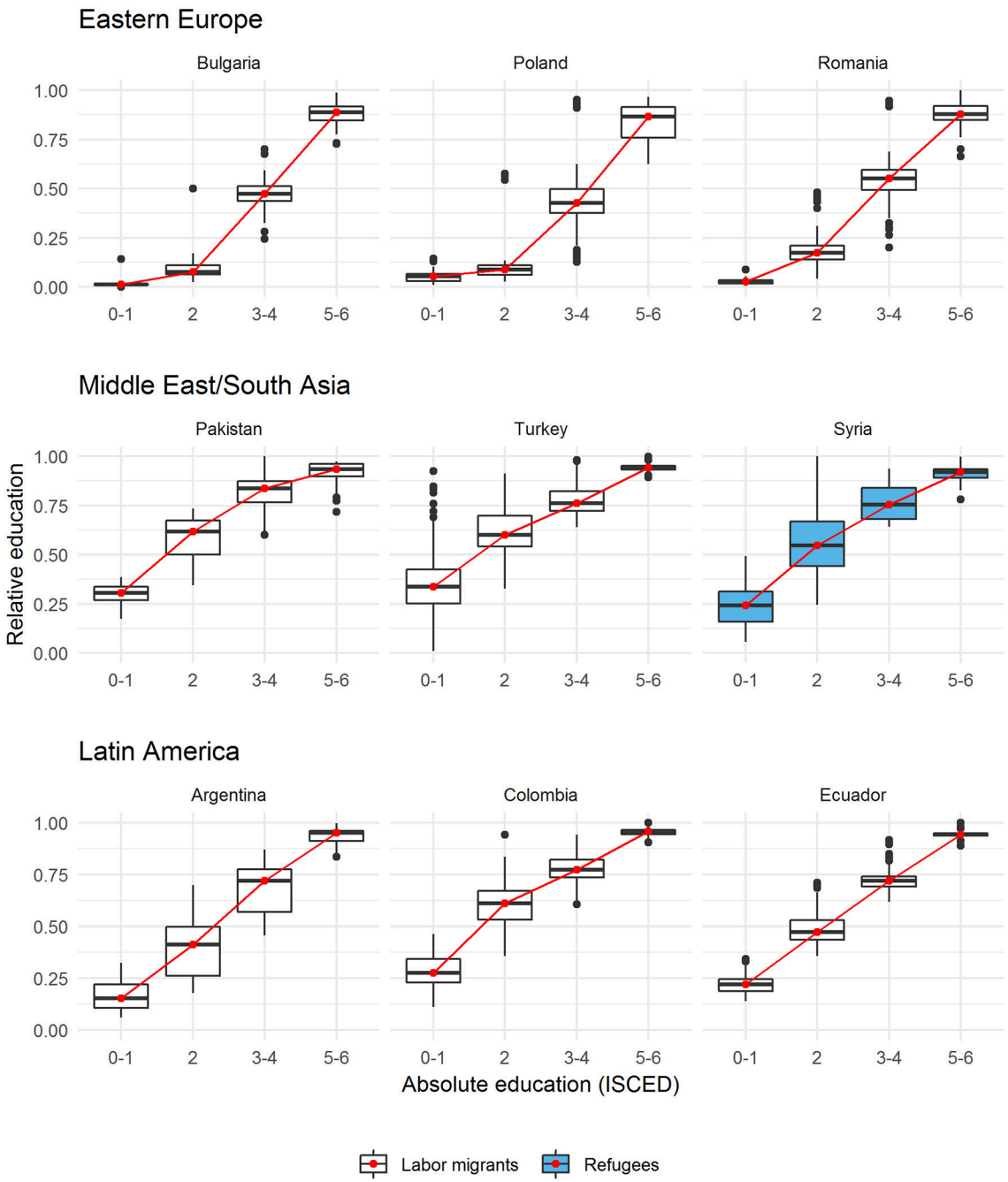

FIGURE 2 | Relative and absolute education.

of results in the text is based on the four-category ISCED specification if not stated otherwise.

Overall, Pakistani immigrants in England are the most positively selected group among labor migrants (with 96 percent above the threshold of 0.5), whereas Bulgarian immigrants in Spain are the least positively selected group (with 23%). On average and across all origin groups and destination countries in this study, immigrants score 0.61 on our measure of regional educational selectivity suggesting that their educational attainment is at least as high as that of roughly 60 percent of the sedentary population of the same sex and age group who remained in the migrant's region of origin.

One major point is immediately apparent from **Figure 3**. That is, each origin group is composed of varying shares of both positively and negatively selected individuals covering the whole spectrum of educational selectivity. Only in a few cases,

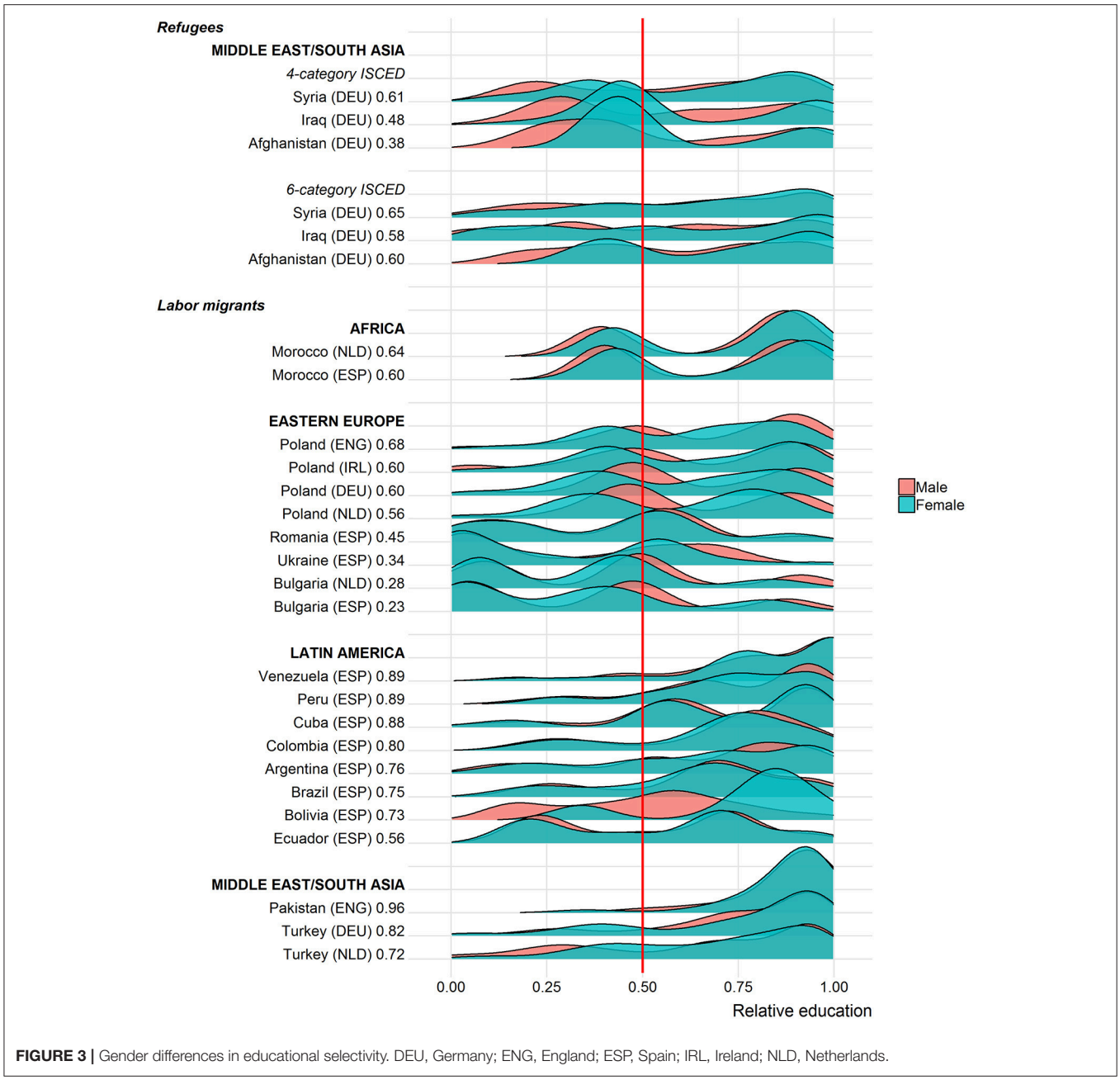

FIGURE 3 | Gender differences in educational selectivity. DEU, Germany; ENG, England; ESP, Spain; IRL, Ireland; NLD, Netherlands.

is it reasonable to characterize a whole origin group (e.g., more than 90 percent) as positively or negatively selected. In this study, only recent immigrants to England from Pakistan would represent such an extreme case. For all other groups, the distributions of the specific proportions vary substantially. For some labor migrant groups, a large majority (>80%) crosses the 0.5 threshold. These groups include Columbians, Cubans, Peruvians, and Venezuelans in Spain, Turks in Germany and Pakistanis in England. In contrast, Eastern Europeans (with the exception of Poles) are located mostly below the threshold. In addition, many origin groups show distinctly bimodal distributions, according to which a substantive share of the group is negatively selected while another substantive share is positively selected (e.g., Moroccans in Spain and the Netherlands, Polish migrants in all three destinations or Ecuadorians in Spain). Moreover, there are no clear patterns visible when it comes to geographic origins. Irrespective of whether immigrants originate from Africa, Eastern Europe, the Middle East, Latin America or South Asia, they seem to cover a wide array of positively and negatively selected individuals.

Turning to the selectivity profiles of refugee migrants in Germany, we present two descriptions. The first relies on the less detailed measure of educational attainment that was also used for labor migrants, while the second description

is based on the more detailed variant of the measure of educational attainment that was only available for refugees (see The Selectivity Measure: Relative Education). The comparison illustrates that rather divergent assessments of the selectivity profiles can result from different specifications. Relying on the less detailed 4-category ISCED variant suggests that 62 percent of the Afghan refugees are located below the 0.5 threshold indicating that this group is mostly negatively selected. Among Iraqis, about half of the migrants are positively selected (48 percent); for Syrians, this share amounts to 61 percent. With the 6-category ISCED measure, little changes for Syrian refugees: still, about two-thirds of them are positively selected (65 percent). However, both Iraqis (with 58 percent) and especially Afghan refugees (with 60 percent) shift toward the positive end of the selectivity spectrum. Apparently, collapsing ISCED 0 and 1 and ISCED 3 and 4 into single categories distorts the descriptions of selectivity for these groups. For Afghan and Iraqi refugees, the distinction between having no education and having completed primary education appears essential. Merging the two lowest ISCED categories into one category thus conceals the underlying positive selectivity inherent in this refugee migration. At the same time, in Western societies, the lowest ISCED categories are populated by so few adults that these categories are virtually meaningless. Accordingly, the more detailed variant of the ISCED classification, which distinguishes between ISCED 0 and 1, depicts a more positive take on selectivity than when considering the less informative four-category ISCED specification.

What do these findings imply for the comparison between refugees and labor migrants? The most important message seems to be that differences in relative education are comparatively small. They are certainly less pronounced than arguments in the literature suggest. The overall group means for the two populations amount to 0.59 for refugees (0.61 using the 6-category education measure) and to 0.62 for labor migrants. Moreover, a closer look at the findings reveals substantive variation in this difference across groups. In fact, labor migrants of certain origins score similar or lower on the measure of educational selectivity than do the refugees covered in this study. These are mostly immigrants from Eastern Europe (i.e., Bulgarians in the Netherlands and Spain as well as Ukrainians and Romanians in Spain). At the same time, there is more variation within origin groups than there is across origin groups—irrespective of the migration motive. This result underlines our initial point that all groups are composed of varying portions of negatively and positively selected individuals.

As the refugee data only covers Germany, contrasting refugees to Germany with labor migrants to a broader set of destination countries may not be the most insightful comparison. Focusing only on labor migrants to Germany, however, restricts the description to recent Polish and Turkish migrants. This comparison leads to the same conclusion with the levels of selectivity being broadly similar to those of refugees in both cases (Poles: 0.61 and Turks: 0.75).

Figure 3 also plots gender differences in educational selectivity. On average, there is virtually no difference between male and female migrants (0.62 vs. 0.61) across all groups. Nevertheless, for some groups distinct patterns emerge. Female refugees score higher on the selectivity scale than their male counterparts irrespective of the ISCED specification (about 5 points among Syrians, 6 points among Afghans and 4 points among Iraqis). It should be kept in mind, however, that the share of males among refugees in the peak year 2015, in which the largest number of refugees came to Germany, has been with about 70 percent much higher than that of women (Bundesamt für Migration und Flüchtlinge., 2016). For labor migrants only one case stands out: female Bolivians who are considerably more positively selected compared to their male counterparts (+25 points).

Addressing Measurement Inaccuracy

Up to now, we presented educational selectivity profiles based on the regionalized reference distributions. **Figure 4** illustrates the same regionalized profiles and, in addition, depicts the selectivity distributions based on country-level information. This aggregate comparison allows for a first assessment of the measurement inaccuracy that is introduced when using educational distributions at the country level as opposed to the regional level. In general, the more strongly the two distributions overlap, the less severe the measurement inaccuracy is and the lower is the additional benefit of collecting regional information. Overall, there is no clear pattern in terms of one measurement approach consistently leading to over- or underestimating immigrant selectivity. Rather than that, there tend to be few differences. For some origin groups, there are discrepancies in the distributional overlap. Visually, this is noticeable for Iraqis where we see higher levels of relative education at the regional compared to the country level. A similar though less pronounced pattern is present for Syrians, whereas the opposite pattern is found for Bulgarians.

Figure 5 captures the inaccuracy between the two approaches to measuring selectivity in a direct manner by subtracting the regional measure from the country-level measure (x-axis). Values close to the red reference line at zero reflect little to no differences in the two measures. Portions of the distribution to the right of the red reference line indicate that educational selectivity measured regionally leads to larger estimates of relative education than if measured at the country level, while the opposite is true for values to the left of the red line. Overall, measurement inaccuracy is an issue for all immigrant groups considered here. At the same time, in only a few origin groups, the inaccuracy goes overwhelmingly in one direction indicating a systematic over- or underestimation of educational selectivity. More importantly, in most cases the inaccuracy remains within limited ranges with only a small proportion of cases exceeding inaccuracy levels of 0.1 (represented by the dashed red lines).

The Argentinian origin group is a case that deserves attention. Here, a substantial portion of the distribution takes values above 0.20 suggesting that relying on country-level data would overestimate educational selectivity by more than 20 points. A closer look at the data reveals that these immigrants mostly stem from only a few regions, which happen to be inadequately characterized by the country average educational distribution. That is, roughly

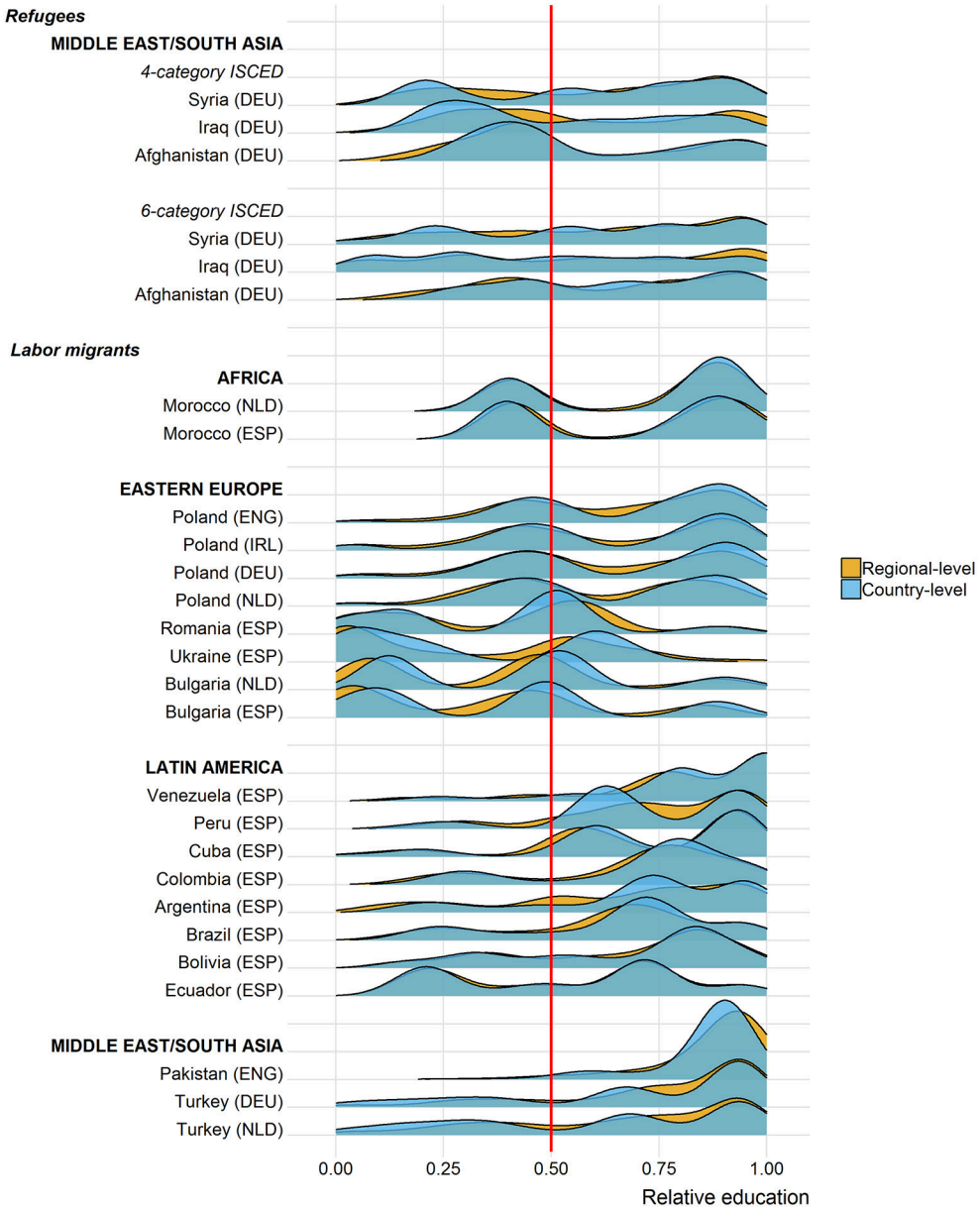

FIGURE 4 | Educational selectivity measured at the regional level vs. the country level. DEU, Germany; ENG, England; ESP, Spain; IRL, Ireland; NLD, Netherlands.

two-thirds of Argentinian migrants originate from Buenos Aires and the surrounding province. In this urban context, acquiring a higher educational degree is more common than in other regions of Argentina. Comparing emigrants from Buenos Aires to the average Argentinian, therefore, makes them seem more positively selected than they actually are when compared to their "real peers" in Buenos Aires. Argentina provides an extreme example for a country, in which disproportionate outmigration from certain regions coincides with substantive differences between the educational distributions typical for these regions as opposed to the whole country.

A similar situation, though this time in the opposite direction, is present for Turks and to some degree also for Ukrainians. In line with the Argentinian case, outmigration in these countries is more pronounced in certain regions than in others. In contrast to migration flows from a highly developed region in Argentina, Turkish and Ukrainian migrants tend to emigrate from a limited number of regions, which score well below the national average. Accordingly, what in the national context would be considered as a medium level of education is more valuable in lower developed regions, in which relatively fewer individuals complete such a degree. The use of country averages in these instances yields an underestimate of the "true" extent of selectivity.

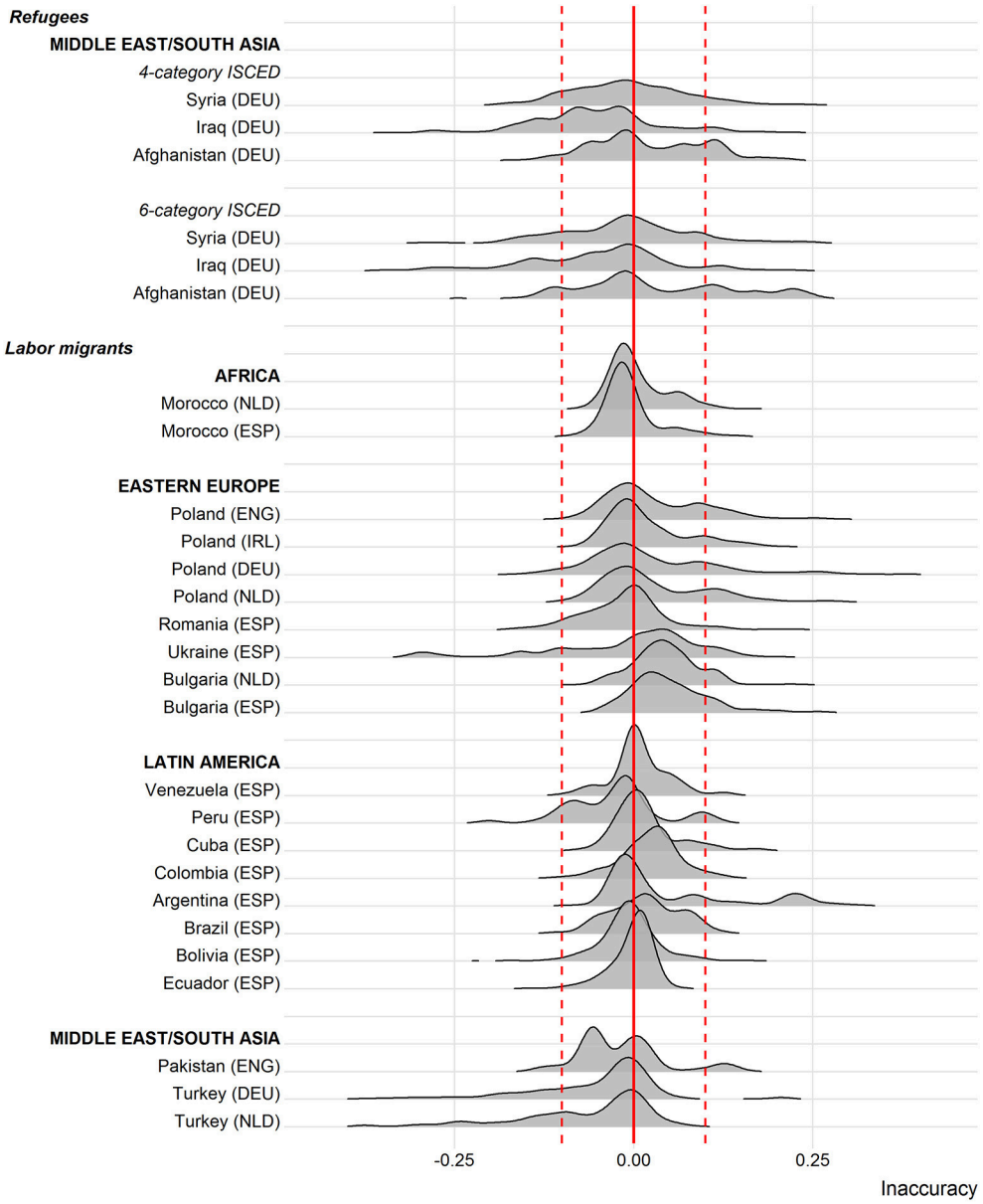

FIGURE 5 | Differences between educational selectivity measured at the regional level vs. the country level. DEU, Germany; ENG, England; ESP, Spain; IRL, Ireland; NLD, Netherlands.

Finally, our aim is to generate tools that help researchers to identify origin groups, for which the expected inaccuracy in measuring educational selectivity reaches unacceptable levels. This is achieved by modeling the relationship between regional inaccuracy levels and characteristics of these regions and countries using random forests, the XGBoost algorithm and neural nets. **Table 4** reports the results as forecasting errors of testing our trained methods on the 20 percent holdout sample. It includes the mean absolute error (MAE), which measures the average magnitude of the prediction error, and the root mean squared error (RMSE). Note that both fit measures are scale-dependent. According to **Table 4**, the random forest and XGBoost performed best with MAEs of 0.018 and 0.015, respectively. The prediction error associated with the neural net is more than twice as large. More concretely, were we to use either of the two tree-based methods to predict the inaccuracy in selectivity in future research projects, we would expect the average prediction to be off by 0.018 and 0.015 points. Considering the inaccuracy distributions captured in **Figure 5** and an arbitrarily set limit of defining an acceptable inaccuracy as within 0.1 points, we are able to predict the expected inaccuracy quite accurately. Tree-based methods are also preferable when relying on RMSE estimates, which penalize large errors.

TABLE 4 | Machine-learning techniques to minimize the inaccuracy in selectivity measures (country-level relative education minus regional-level relative education).

Model	Mean absolute error (MAE)	Root mean square error (RMSE)
Random forest	0.014	0.026
XGBoost	0.015	0.030
Neural net	0.035	0.079

CONCLUSIONS

In this descriptive piece, we illustrated the selectivity profiles of a range of immigrant groups who arrived in Western Europe in recent years. We focused on refugees from conflict regions in the Middle East and South Asia and contrasted them to labor migrants from a wide variety of origins. By comparing refugees to labor migrants, we addressed longstanding assumptions about the selectivity patterns dominant among migrants who flee from their home country vs. migrants who leave for economic reasons. For this undertaking, we built upon prior approaches to measuring selectivity. Our individual-level measure of selectivity identified each migrant's relative position in the age- and gender-specific educational distribution of the country of origin. We further refined this approach by considering immigrants' regional origins and, accordingly, constructed the educational distributions present in the origin countries for each region as opposed to the whole country.

One of the key findings is that migrant groups are almost never either positively or negatively selected, but are composed of varying proportions of both positively and negatively selected individuals. In other words, even though a group may be heavily positively selected in that the majority of its members score above 0.5, there is usually also a considerable proportion of that origin group that is negatively selected.

A second key result is that there are few differences between refugees and labor migrants in average levels of selectivity. However, these differences vary; and there are labor migrant groups that score similar or lower on educational selectivity than do the refugee groups covered in this study. In other words, the differences between these two populations who migrate for different reasons is considerably less prominent than arguments in the literature seem to suggest.

Finally, regional origins matter—though not universally. Our findings show that there are cases where considering educational distributions at the country level rather than at the regional level produces a considerable inaccuracy in the measure of selectivity. This inaccuracy is likely to occur in countries where outmigration is confined to particular regions of the country and where these regions exhibit economic opportunity structures that are either substantially below or above the country average. In these instances, the positioning of the individual migrant in the educational distribution of the country as a whole produces an inadequate assessment of a person's relative position. Thus, depending on the research interest it might be reasonable to make the effort and check whether it is possible to include a regional measurement of selectivity. If this is not feasible, researchers may use the pre-trained machine-learning tools that are made freely available to get an idea about the direction and the size of the inaccuracy.

Challenging for any approach, which includes a wide range of immigrant groups of different origins in different destinations, are the obstacles inherent to using a variety of data sources. Our description is limited in that we cannot claim to come up with a representative or fully comparable empirical account across the migrant groups and destinations included in our study. The destination country data sets cover slightly different periods of immigration and they used different sampling strategies. Hurdles of this kind will be difficult to overcome especially for an extremely mobile population of recently arrived migrants who move a lot in the first months and years after arrival and for whom sampling frames in many destinations are not available. The origin country data do not provide a uniform source of information either, but vary in the number of cases included, in quality and in how recently they were collected. Harmonization issues further complicate the picture. To assign each migrant to the appropriate age- and gender-specific educational distribution in the region or country of origin, it is necessary to aggregate the ISCED categories. Otherwise, it is not possible to analyze destination country data together with origin country data. The lowest ISCED categories (0 and 1) had to be summarized because most destination countries do not collect information on the zero category (which they consider not to be existent in their countries). The medium categories (ISCED 3 and 4) were analyzed together, because vocational training (i.e., ISCED 4) is not present in all countries. The highest categories (ISCED 5 and 6) are summarized because only few individuals complete a doctoral degree (i.e., ISCED 6) and because not all countries of origin collect information on this highest category. Harmonization of this kind, obviously, reduces the degree of precision in descriptions of educational selectivity. The differences in the selectivity profiles of refugees we saw when using different categorizations of educational attainment attest to this concern.

The selection of countries constitutes another limitation. It was driven by pragmatic reasons, as information on migrants' regional origin has been available only for the three destination data sources considered in this study. Surely, a selection of origin and destination countries based on substantive reasons would be preferable. With regard to destinations, key immigration countries in Western Europe are missing (e.g., France, Italy, or Sweden). Regarding the countries of origin, only few African and Asian countries are present in our description.

Educational selectivity is an important characteristic that has been shown to be relevant for immigrants' and their children's incorporation into the host societies (e.g., Ichou, 2014; Spörlein and Kristen, 2018). Similarly, other selectivity characteristics such as motivational traits or attitudes may matter for how well migrants fare in the years after arrival, possibly also in the next generation. However, it will be even more difficult to come up with suitable data on such attributes for migrants in the destination countries and for the populations in the origin countries.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fsoc.2019.00039/full#supplementary-material

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It's the Economy! Perceptions of Host-Countries' Institutions and Individual Life Satisfaction of Intra-European Migrants

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By drawing data from the European Social Survey (ESS) (2008–2016), this study explores how immigrants' assessments of economy, democracy, and quality of public goods (such as health and education systems) in the receiving societies contribute to their life satisfaction. Results indicate that satisfaction with the economy is the strongest correlate of individual life satisfaction among European immigrants, and this association is particularly pronounced among immigrants from Turkey, Eastern and Southern Europe. Assuming that immigrants compare institutions of their host and home countries when assessing institutional features of the host countries, relative gains in satisfaction with the performance of host-country economy are shown to be associated with particularly higher levels of overall life satisfaction among immigrants from Turkey, Eastern and Southern European countries than the rest of Europe. We conclude that, in relative terms, migrants from countries with less well-functioning economies to countries with more favorable economic conditions display higher levels of perceived satisfaction with the host country economies, which contributes considerably to their overall life satisfaction.

Keywords: immigrant integration, life satisfaction, social comparisons, Europe, comparative

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INTRODUCTION

Whereas a vast body of migration research has examined objective indicators of immigrants' integration (see Van Tubergen et al., 2004 for comparative research; Kogan, 2006, 2007; Heath and Cheung, 2007; Heath et al., 2008 for a review; Fleischmann and Dronkers, 2010; Gorodzeisky and Semyonov, 2017; Khoudja and Platt, 2018 for recent research), immigrants' subjective evaluation of their life situation is far less studied. Recent years have, however, witnessed a growing interest in immigrants' own assessments of their lives in host societies, captured by individual life satisfaction (see Hendriks, 2015 for a review; Baykara-Krumme and Platt, 2018; Hendriks and Bartram, 2018; Kogan et al., 2018 for recent research). Conceptually, life satisfaction is defined as a result of evaluation, in the course of which individuals compare their perceptions of the actual situations with their hopes and expectations of how the situation should be, i.e., an ideal situation (e.g., Campbell et al., 1976; Shin and Johnson, 1978; Michalos, 1985 for a comprehensive overview).

While factual situations can be largely approximated through individuals' economic, socio-demographic and socio-cultural circumstances, factors relevant to the description of the ideal situation seem to be more multifaceted and ambiguously defined. Among other things, an ideal situation depends on perceived norms, aspirations, past experiences, or on how immigrants compare themselves with others, such as relatives and friends in the country of origin or native-born colleagues and neighbors in the receiving country (Siegert, 2013).

In the current study, we explore how immigrants' assessments of the state of economy, democracy, and quality of public goods (such as health and education) in the receiving societies contribute to their life satisfaction. Unlike earlier research, which either focused exclusively on individual characteristics (e.g., Bartram, 2011) or predominantly on contextual determinants of the associations between immigrants' individual characteristics and life satisfaction (e.g., Hendriks and Bartram, 2016; Kogan et al., 2018), we examine how individual *perceptions* of host country structural conditions and institutional characteristics contribute to immigrants' overall life satisfaction. While addressing this research question, we pay particular attention to the differences in assessment of host country institutions across immigrant groups. A peculiarity of the current study is that we do not consider an immigrant's perception of the host-country context alone, but rather, we relate this perception to that of the immigrant's sending country[1]. To this end, we first compare an immigrant's perception of the receiving society with reports from similar individuals in the immigrant's country of origin. The underlying assumption is that had immigrants remained in their countries of origin they would have similar opinions as stayers with comparable characteristics in the respective countries. Even after moving to another country, immigrants would still maintain contacts in their countries of origin (via relatives or friends), and are likely to be influenced by opinions of their former fellow citizens. Alternatively, immigrants might also undertake comparisons within a reference frame in the countries of their current residence, i.e., with the native-born. In order to make immigrants and stayers/natives as much comparable as possible, in our empirical analyses, we match immigrants to stayers and the native-born, respectively, on a number of observed individual characteristics, such as age, gender, family status and educational level. Then we establish whether immigrants' assessments of host-country institutions diverge once these are compared to stayers and natives. Finally, we explore the association between assessments of host-country institutions, both absolute and relative, and individual life satisfaction with the aim to establish to what extent the choice of a comparison frame might be of relevance.

Before addressing the possible role of host country institutions and structural conditions and formulating related hypotheses, we describe patterns of migration within Europe, paying particular attention to driving forces behind migration flows and their implications for immigrants' subjective well-being. Subsequently, the data and methodological aspects of our study are presented, followed by the empirical analyses. We draw on the European Social Survey (ESS) data, a standardized comparative dataset on a large number of European countries, which meets key data requirement for our study: It contains identical information on movers and stayers with regard to core independent and control variables. The study concludes with the discussion of whether or not and how subjective perceptions of host-country performance shape individual life satisfaction, and what role potential comparisons with the sending countries might play in this regard.

Patterns of Intra-European Migration

In order to better comprehend patterns of subjective well-being among European migrants, it is important to relate them to the history of intra-European migration, which since the Second World War has been marked by a number of major developments. These include guest worker migration and family reunification in the 1950–1970s, refugee migration to the West—predominantly from Eastern Europe (particularly up until the late 1980s), Yugoslavia (in the early 1990s) and Turkey—and finally migration within the European Union (as a result of freedom of mobility within the EU).

The phase of guest worker recruitment started in the mid-1950s, when North-Western European governments signed a number of bilateral agreements with peripheral and neighboring European countries. The main destination countries were Belgium, France, Germany, Luxembourg, the Netherlands, Sweden and Switzerland, whereas the main sending countries were Greece, Italy, Portugal, Spain, Turkey and Yugoslavia (Fassmann and Münz, 1992). In accordance with the Gravity model of migration (Zipf, 1946), in many cases geographical proximity of sending and destination countries played a major role in migration flows. For instance, Finland became a key source of labor force in Sweden; Irish went to the UK and Italians to Switzerland or Germany (Van Mol and de Valk, 2016). In accordance with macro-economic theories of migration (Harris and Todaro, 1970), migration was more likely to take place from economically less developed (regions of the) sending countries to more developed industrialized (regions of the) receiving countries and was primarily driven by economic considerations. Migrants from agricultural regions of Northern Portugal, Western Spain, Southern Italy, Northern Greece and Anatolia (Turkey) were pushed by scarce employment opportunities, low incomes and poverty (Bade, 2004) and pulled by abundant job opportunities in the lower segments of the labor market and higher living standards in Western and Northern Europe (see also Push-Pull-Paradigm by Lee, 1966 and dual labor market theory by Piore, 1979). Working abroad allowed migrants to accumulate financial resources and send remittances to their (extended) families, thereby contributing to higher consumption levels of those who remained in the sending countries. The oil crisis of 1973–1974 brought about halt in recruitment of guest workers and transformation of migration flows (Van Mol and de Valk, 2016). Instead of the circular patterns of labor migration, European countries started facing chain migration of the family members of migrants who had arrived in the framework of guest worker schemes (Fassmann and Münz, 1992; Hansen, 2002).

[1]The importance of multiple comparison frames among immigrants has been emphasized in earlier studies (Falk and Knell, 2004; Gelatt, 2013).

Apart from the former Yugoslavia, Eastern European countries were not a part of the 1950–1970s labor recruitment. Instead their migration to the West has been characterized by inflows of Eastern European refugees following political crises in Hungary (1956–1957), Czechoslovakia (1968–1969), and Poland (1980–1981) (Fassmann and Münz, 1992, 1994). The disintegration of the Soviet Union and the Yugoslavian wars in the early 1990s triggered a surge in numbers of asylum seekers and refugees within Western Europe and resettlement in Eastern Europe (Hatton, 2004; Van Mol and de Valk, 2016). In many cases, immigrants leaving Eastern European countries were not necessarily political refugees but ethnic minorities of the sending countries, who were able to relocate to their countries of ancestry after the fall of the Iron Curtain and the liberalization of travel (e.g., ethnic Germans predominantly from Poland, Hungary and the former Soviet Union; Ingrian Finns from Russia; a Greek minority from the former Soviet Union; and a Turkish minority from Bulgaria). The population groups were pushed by deteriorating political and economic situations in the sending countries and pulled by the prosperity and preferential treatment of the returning Diaspora members in the receiving countries.

The 1992 Maastricht Treaty's abolition of borders considerably eased intra-EU migration. It allowed European citizens to move freely within the EU and reduced many institutional barriers. Since the mid-1990s and particularly since the enlargement of the European Union to the East up until the recent economic crisis, fueled by the rapidly improving economic conditions, Southern Europe, Finland and Ireland—formerly major sending countries themselves—became magnets for immigrants, particularly from Eastern Europe. The recent global economic crisis brought about a revival of emigration from Southern Europe, as countries hit hardest by the crisis—Greece, Ireland, Italy, Portugal and Spain—again became emigration countries (Castles et al., 2014).

Population movements from the South to the North and from the East to the West dominated migration flows within Europe since the 1950s. Migrants heading from Turkey, Eastern and Southern Europe to Western and Northern European countries were pushed by scant employment opportunities and political unrest (particularly in Eastern Europe) in their home countries and pulled by more favorable economic conditions and promises of a better economic future abroad. Different migration motives among Western and Northern Europeans on the one hand, and Turks, Eastern and Southern Europeans, on the other hand might find reflection in immigrants' assessments of their life situation in the countries of their new residence.

State-of-the-art Research and Hypotheses

Allardt's (1976) seminal approach "Having, Loving and Being," which defines the role of the three factors in individual subjective well-being, can be seen as a conceptual framework for the current study. Whereas, "Having" captures material resources and basic living conditions, such as income, housing and basic (public) goods, "Loving" refers to the individual needs for social relations and emotional support and "Being" to the overall recognition, participation and feeling of belonging. "Having" forms a basis for the satisfactory functioning of an individual. Referring to differences between richer and poorer countries in the strength of the association between individual income level and life satisfaction reported by Easterlin (1973), Veenhoven (1997), Argyle (1999), and Böhnke (2008) suggest that satisfaction with basic needs is a precondition for other life domains, such as social approval and belonging. Indeed, research has shown that levels of life satisfaction are negatively correlated with unemployment levels (Clark, 2003) and positively associated with GDP per capita (Inglehart and Klingemann, 2000; Fahey and Smyth, 2004) of countries. These studies show that an individual's perceptions of structural conditions and how well a country's institutions function reflect not only the country's objective conditions, but more importantly, they could also capture individual evaluations that might be related to the individual's own needs and resources. Hence, such subjective perceptions can vary across individuals within the same country.

Pertinent research examining the role of institutional factors on life satisfaction posits that not only GDP and economic growth matter for subjective well-being, but also welfare state expenditures and political freedoms correlate with individual life satisfaction (Haller and Hadler, 2006). According to Diener and Suh (1999), citizens are more satisfied when they live in wealthy countries, which are characterized by high-quality education, health and legal systems. Addressing the role of host country institutions on immigrants' life satisfaction, Kogan et al. (2018) find that when taking into account the extent to which a host country is able to provide public goods, a country's wealth level does not seem to be particularly important for immigrants' life satisfaction, whereas a country's level of human development is associated with a higher life satisfaction of immigrants. Research on how specific aspects of the provision of public good shape individual life satisfaction is scant (for some exceptions see Hsieh, 2017, on the relationship between quality of homecare service and quality of life).

As for the "Being," Dorn et al. (2008) contend that citizens' well-being may be enhanced by their participation in the political decision-making processes and by the perceived extent of the procedural fairness during the processes. It is plausible that citizens' empowerment through democratic institutions should lead to higher levels of self-reported life satisfaction. Whereas Frey and Stutzer (2003) report that direct democracy (as in Switzerland) is significantly associated with levels of happiness in this country, evidence from other international cross-sectional research does not unanimously confirm such a relationship (Schyns, 1998; Inglehart and Klingemann, 2000; Veenhoven, 2000; see also Dorn et al., 2007, 2008).

Altogether, existing research has underscored the importance of countries' economic and political conditions as well as quality of public goods for individual well-being. It has also been shown that, alongside examining the role of political and institutional settings, researchers should pay attention to the individual perceptions of institutions that correlate with life satisfaction beyond objective measures of the quality of society (Böhnke, 2008). To date, no study has specified which institutions

would be perceived as most important for immigrants' well-being and hence contribute the most to immigrants' assessments of their life satisfaction. We hypothesize that due to the predominantly economic nature of the intra-European migration and the improvement of economic well-being as the foremost migration motive, immigrants' satisfaction with the state of economy should be the strongest correlate of their overall life satisfaction (*Hypothesis 1*).

Given that the association between perceptions of country's (economic) performance and individuals' overall life-satisfaction exists, the question arises, whether it is uniform for groups of inter-European migrants. Attribution mechanism, prominent in psychology (Jones and Davis, 1965; Kelley, 1971) would suggest that people growing up in more developed countries should have a weaker tendency than their counterparts growing up in less developed countries to associate their life satisfaction with the external environment. Research indeed shows that individuals originating in societies with established democratic institutions and well-functioning economies seem to be more likely to decouple their assessments of personal life situation from the satisfaction with national affairs (Andrews and Withey, 1976; Böhnke, 2008). In contrast, personal satisfaction might be much more strongly attached to one's view of the country among individuals facing lower living standards and limited political freedoms for a large part of their lives. Therefore, when moving away from their homelands, immigrants from such countries should put more emphasis on the host-country conditions when evaluating gains or losses of migration. This allows us to postulate that satisfaction with the state of economy should play a particularly important part in the overall life satisfaction among immigrants originating from countries with less well functioning labor market institutions, i.e., those coming from Turkey, Eastern and Southern Europe (*Hypothesis 2*).

From the standpoint of the social comparison theory (Festinger, 1954), immigrants' attachment to both the places where they originate from and where they currently live, is likely to result in multiple frames for comparison. Socialized in the country of origin, immigrants tend to compare their current situation to the situation in the sending country. Such comparisons might be further nurtured by social contacts in the country of origin, i.e., through conversations with their friends and relatives who remained in the sending country. Finally, media might keep immigrants' comparisons with sending countries alive even if migration lays back in time. If someone comes from a country with institutions functioning less efficiently than in the host country, perceptions of host country institutions might be positively biased and hence potentially be more positively associated with the overall life satisfaction. An opposite case is, in principle also possible: when someone originates from a country with healthy functioning institutions but emigrates to a country, where social structures function less well, his/her perceptions of host-country institutions would be downward biased and potentially reflected in the overall life satisfaction. Individuals migrating from Turkey, Eastern and Southern Europe should on average experience greater improvement in their economic lives than those moving within the rest of Europe. Based on this, we hypothesize that the association between the relative level of satisfaction with host country institutions, and particularly economy, and the overall life satisfaction among these immigrants should be particularly high compared to the respective association among immigrants originating in the rest of Europe (*Hypothesis 3*).

Data and Measurements

The analyses are based on the ESS cumulative data[2] for the years 2008–2016 (waves 4–8), thus covering the period during and in the aftermath of the recent economic crisis. The ESS enables a truly comparative European perspective, as strong efforts have been made to ensure comparability across the participating countries. We concentrate on the European migration in and from the following 30 countries: Austria, Belgium, Bulgaria, Switzerland, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, UK, Greece, Croatia, Hungary, Ireland, Iceland, Italy, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Russia, Sweden, Slovenia, Slovakia, Turkey and Ukraine[3]. The focus on solely European migrants within European countries is justified by the design of the study, which requires identical information on both migrants and stayers not only regarding their individual characteristics (such as socio-demographics) but also with respect to their assessments of countries' institutions. Immigrants are defined in our study as individuals who were born in countries other than their current country of residence and arrived to the country of their current residence in years 1955–2017. Individuals who reside in their birth countries throughout their lives are referred to as stayers. In additional analyses, we also refer to patterns of life satisfaction among the native-born in host countries, who are defined as residents, born on the territory of the respective country. We further compare satisfaction with the performance of host-countries among immigrants and the population born in these countries.

Our dependent variable is the level of life satisfaction, which is asked in all waves of the ESS: "All things considered, how satisfied are you with your life as a whole nowadays?" The answer categories range from 0 (extremely dissatisfied) to 10 (extremely satisfied), resulting in an 11-point Likert-scale. A consistent measurement and standardized formulation ensures comparability across the ESS waves and the countries participating in the survey. Although we acknowledge that the multifaceted character of subjective well-being is possibly captured better by multiple indicators, a detailed information on different aspects of subjective well-being is not available in the ESS.

Since we focus in particular on the comparison of immigrants' current situation in the receiving country with a hypothetical situation in the sending country if they had remained there or had been influenced by their relatives and friends residing in their

[2]The European Social Survey is a unique cross-sectional survey that covers a large number of European countries and allows for comparisons both between migrants and non-migrants. It is repeated every second year since 2002, and said to be representative of the population aged 15 or older.

[3]We excluded Turkey as a destination country, focusing solely on Turkish migrants residing within rest of Europe.

country of origin, we match immigrants with stayers on the basis of their core socio-demographic characteristics. The procedure is the following. In the first step, based on the OLS regression analyses, we predict the value of satisfaction with economy, democracy, the state of the education and health systems for a stayer with each possible combination of the following variables: gender, age (with the following age groups: 15–24, 25–39, 40–59, and 60–65), marital status (married vs. other), presence of children (yes vs. no), educational level (lower secondary or below, upper secondary, or post-secondary and tertiary), country and ESS round. In the next step, each immigrant is matched with a stayer based on the set of above-mentioned characteristics.

Since the major focus of the study is on the association between immigrants' satisfaction with the functioning of host country institutions (in both absolute and relative terms) and their general life satisfaction, our central independent variables pertain to individuals' satisfaction with the functioning of the country in which they reside, including satisfaction with the provision of public goods (health services and education systems), the economic situation and the state of democracy. Each of these variables is measured on an 11-point scale ranging from 0 (extremely dissatisfied) to 10 (extremely satisfied). In addition to the absolute levels of life satisfaction with host country institutions, we also focus on the relative levels. These are calculated as a difference between the level of life satisfaction with respective host country institutions and the level of life satisfaction with institutions of the sending country among socio-demographically identical stayers (based on the above-mentioned set of characteristics). The theoretical range of the newly created relative levels of life satisfaction with host country institutions is between −11 and +11, whereby positive values pertain to higher satisfaction with host country institutions than with sending country institutions and 0 pertains to equal level of satisfaction with institutions of both countries. To test whether individual assessments of host country institutions are differently associated with overall levels of life satisfaction depending on the source country of immigrants, we include interaction terms between domain-specific levels of life satisfaction and immigrant origin groups (see below for the definition of these groups).

At the individual level, a set of demographic, socioeconomic and migration-specific characteristics is included. Demographic traits, such as age and its quadratic term, gender, number of persons in the household and (ever) having children, are controlled. We measure socioeconomic characteristics with the following variables: employment status—coded as a categorical variable with three groups: employed, unemployed and inactive (with "inactive" used as a reference category)—, years of schooling, and the relative position of the household income in the income distribution of the corresponding host country (measured in deciles). We include individuals with missing information on income by assigning them to the modal income decile of the host country's corresponding income distribution. We use a dummy variable to distinguish cases with missing income information.

Migration-specific characteristics mainly refer to immigrants' countries of origin, the length of residence in the host country after immigration, language use and citizenship acquisition. On the basis of the countries of origin, we differentiate between immigrants from (1) Eastern Europe, (2) Northern Europe, (3) the UK and Ireland, (4) continental Europe, (5) Southern Europe and (6) Turkey. The country or region of origin not only indicates an immigrant's cultural background, but also serves as the reference for immigrant evaluations of their post-migration situation. An obvious question is whether the classification of origin groups is meaningful and valid. Our sensitivity analyses, in which we reran all analyses while excluding one country from each origin group at a time yielded comparable results for all origin groups, but one. The analyses for the UK/Irish groups seem to be driven by the UK data. Once excluding the UK, the coefficients for the perception of economy and democracy increase substantially. Apparently, for Irish immigrants perceptions of economy and democracy are stronger associated with life satisfaction than any other immigrant group in the dataset. Having Irish immigrants as a separate group is, however, unwarranted due to a relatively low sample size of the group. Hence, we decided to stick to the group of English-speaking immigrants, but refer reader to the differences between Irish and British immigrants when applicable.

Length of residence in the host country is captured by the variable "years since migration" (YSM) and coded as a categorical variable with four groups (residing in the host country for 0–5, 6–10, 11–20, and above 20 years; here, the group residing in the host country for 5 years or less is used as a reference category). Speaking the host country's national language at home—the only indicator of language proficiency available in the ESS data—is used as a proxy for the degree of cultural assimilation. Citizenship status of the host country is another indicator of integration—this time legal integration—in the host society.

In addition, we control for variables that are commonly mentioned in the existing literature on life satisfaction (see Kamberi et al., 2015 for a summary). For example, religiosity has often been considered a factor potentially protecting individuals in difficult life situations. We measure religiosity on an 11-point scale ranging from not at all religious to very religious. Immigrants' minority status is captured by a dummy variable, indicating whether immigrants mention to belong to an ethnic minority group. Individual health status is measured by immigrants' subjective assessment of their health situation, ranging from (1) very bad to (5) very good. We further include a variable "feeling of safety when walking alone in the local area after dark," which indicates whether one feels safe in the neighborhood. The variable's range is from (1) very unsafe to (4) very safe. We take into account the degree of immigrants' sociability by including the variable measuring how often they meet with friends, relatives and colleagues, with answer categories reaching from (1) never to (7) every day. In addition, we control for the survey waves to capture a general time trend in life satisfaction. Finally, we include host country fixed effects, so that our results pertain to the difference in life satisfaction among immigrants residing in the same receiving country. In doing so, we control for differences in country-specific levels of life satisfaction as well as for institutional influences able to shape individual life satisfaction. Distributions of the independent and control variables are available upon request.

The importance of the perceptions of various host country characteristics and their patterns of association with overall life satisfaction might obviously differ depending on the population analyzed and the objective conditions. To homogenize the analyzed population, we restricted our analyses to working-age immigrants (aged 15–65).

Descriptive Results

Before turning to the patterns of association between perceptions of host-country economic conditions, state of democracy, and public services and the individuals' overall life satisfaction, we explore whether immigrants from various source regions differ in terms of their satisfaction with host country structural and institutional conditions. **Figures 1**–**4** plot group average levels of satisfaction with the state of economy (**Figure 1**), democracy (**Figure 2**), education system (**Figure 3**), and health services (**Figure 4**) in both absolute (panel a) and relative (panel b) terms. The figures show average levels of satisfaction with each of four contextual characteristics for an immigrant regardless the country s/he resides in (labeled "overall") and separately by groups of destination countries. Similar to groups of origin, we differentiate between continental, Northern, Eastern and Southern European countries, as well as UK and Ireland.

Regarding satisfaction with the state of the host country economy in general, considerable variation is observed across the origin groups. Overall, Northern Europeans—compared to other immigrants—seem to be the group that is most satisfied with the state of economy and democracy and highly satisfied with the education system and health services in their countries of residence. Immigrants stemming from the UK and Ireland are, on the other hand, the least satisfied with the state of economy and democracy in their host countries. East Europeans are one of the groups with consistently low levels of satisfaction in all domains of host country institutions compared to the rest. Southern Europeans, on the other hand, are among the most satisfied immigrants regarding all institutional characteristics of the host countries they reside in. A similar observation can be made for immigrants originating in Turkey.

A closer look at the combinations of origin and destination countries helps to better understand where the average patterns come from[4]. Not surprisingly, satisfaction with host-country institutions largely depends on the country an immigrant resides in. Practically all immigrant groups are more satisfied with the state of economy when they live in Northern and continental countries, and least satisfied with institutions in Eastern Europe. Still, we observe some variation across ethnic groups residing in the same region: whereas immigrants from continental and Eastern European countries are rather positive about the economy of continental countries, Turkish immigrants are substantially less satisfied. On the other hand, Turkish immigrants appear to be mostly satisfied with the state of education and health system in continental Europe and are not different from the rest when assessing the state of democracy. This indicates that assessments of host-country institutions do not just reflect objective conditions in the pertinent country, but are carried out through the lenses of individuals' socio-economic status, needs and experiences. The disparities in the assessment can be substantially large, as indicated, for example, by the levels of satisfaction with economy among Eastern and Southern Europeans in Northern Europe regarding economy, or Southern Europeans and immigrants from continental Europe regarding the health system. Overall, opinions diverge more when it comes to the assessment of the host-country economy than any other institutions. Immigrants are particularly unanimous regarding lower levels of assessments for Eastern European destination countries.

But how immigrants evaluate host-country institutions if they were to compare them with the institutions back in their countries of origin? Relative to the situation in their source countries, the groups that are the most satisfied with the host country institutions are Turks, Southern and—to somewhat lesser degree—Eastern Europeans. Referring to the bars capturing the "overall" level of relative satisfaction (see **Figures 1B**–**4B**), all three groups are consistently more satisfied than the rest with economy, democracy and education system, and partially also with health services when comparing them to the institutions of their home countries[5]. Immigrants from Nordic countries, Ireland and the UK, on the other hand, assess the state of economy and democracy in their source and host countries rather similarly, under the assumption that their opinions about source countries would coincide with those of the socio-demographically similar stayers. Regarding the health and education systems, their opinions diverge: whereas immigrants from Nordic countries evaluate systems of public goods in the host country less favorably, Irish and British favor education and health systems in their host countries more than in their source countries. Immigrants from continental countries, on average, are more satisfied with institutions of the host country compared to those of their source countries; a single exception is health system. Taken together, this suggests that Turkish, Southern and Eastern European immigrants and, to a somewhat lesser degree, immigrants from continental Europe improve their utility compared to stayers back home, whereas Northern Europeans do not, at least not regarding institutional domains of the host-country featured in this study.

A look at the combination of countries of origin and destination reveals a more differentiated picture. Immigrants from the UK and Ireland, who are found in sufficiently large numbers in all destination countries apart from Eastern Europe, seem to be more satisfied with the state of economy and democracy if they reside in continental or Northern European countries, but not otherwise. Immigrants from continental Europe are satisfied with the state of economy, democracy and public services if they reside in other continental or Nordic country, but are substantially dissatisfied with economy and democracy (relative to their source country)

[4]Figures 1ab-4ab present average satisfaction levels with the functioning of institutions in respective country groups for immigrant groups with at least 50 observations. For differences between Ireland and the UK, consult **Table A.1** in the Appendix.

[5]This does not refer to the relative levels of satisfaction with the state of health system among Eastern Europeans.

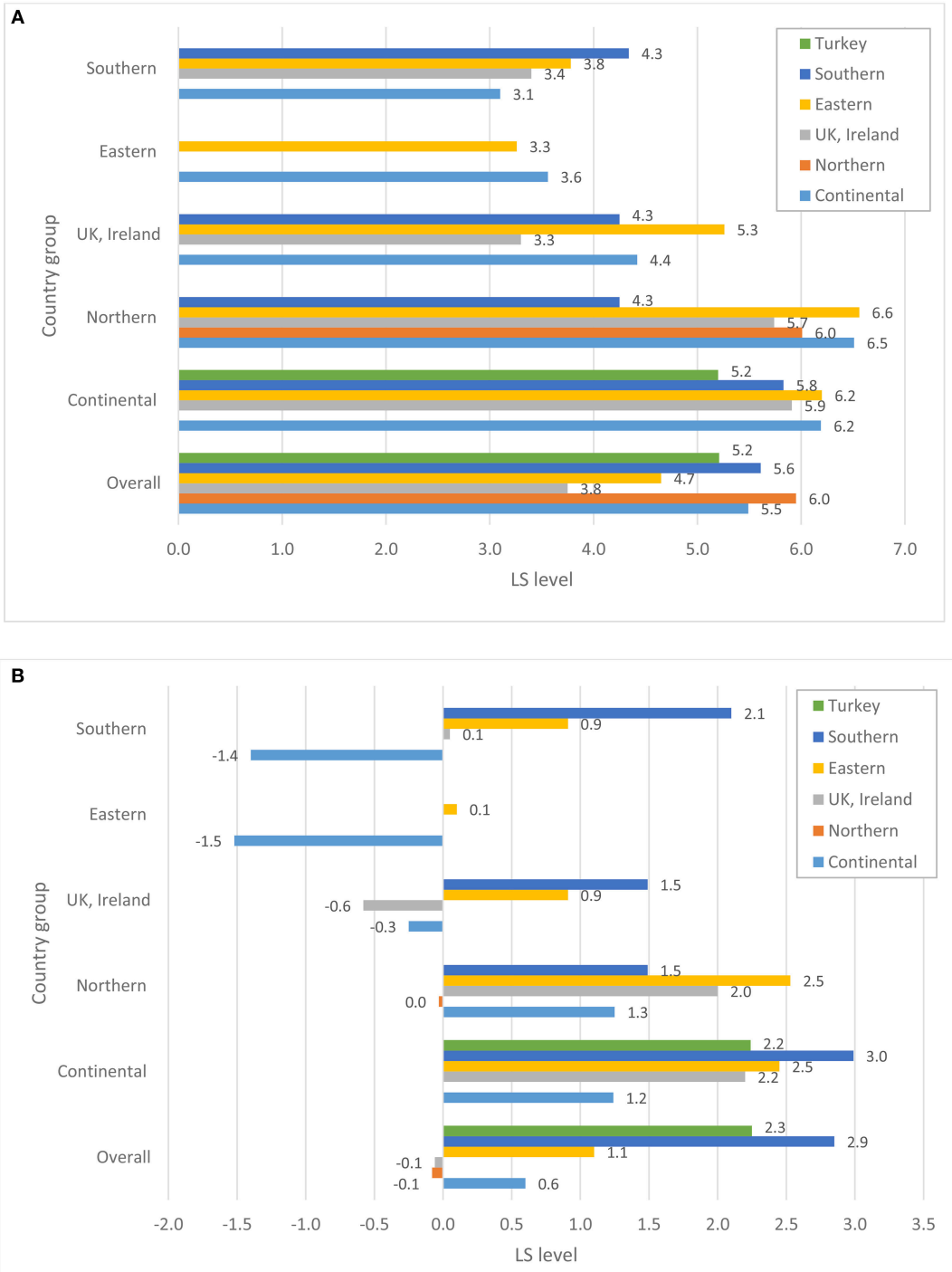
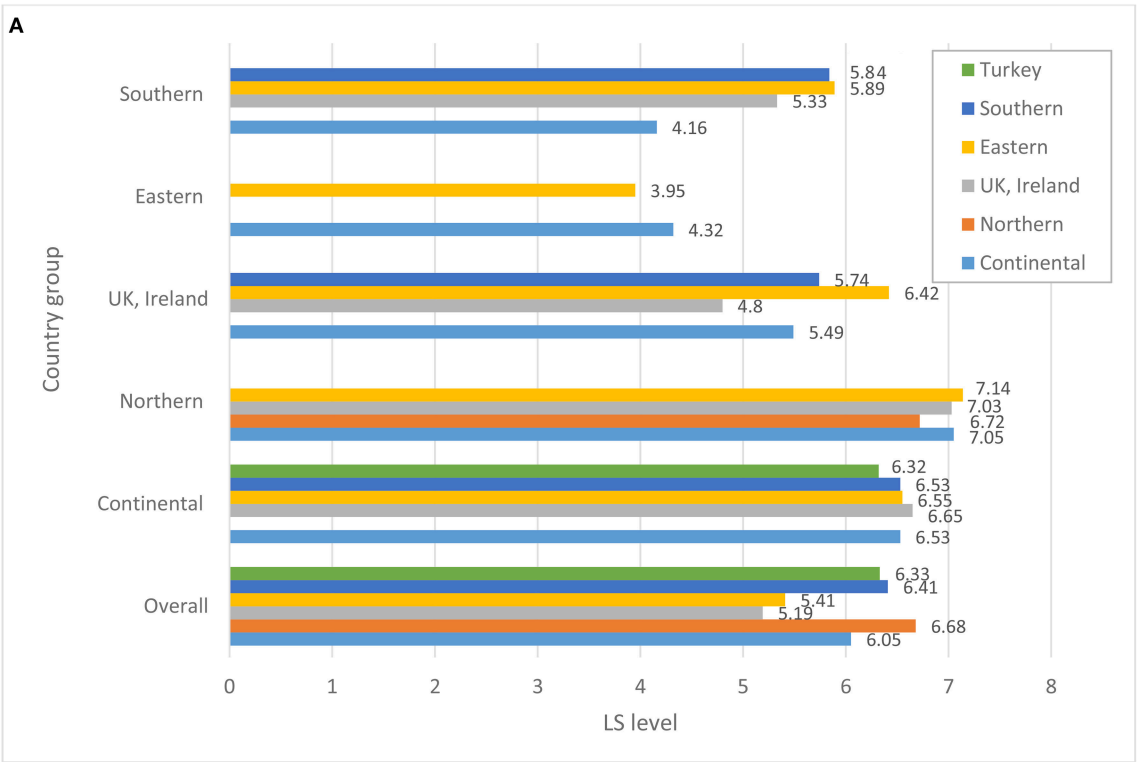


FIGURE 1 | (A) Satisfaction with the state of economy, absolute level. **(B)** Satisfaction with the state of economy, relative to stayers in the country of origin. Source: ESS 2008-2016 (rounds 4-8), weighted data, authors' calculations.

in Eastern and Southern European countries. Gains in satisfaction with economy are the largest for Southern Europeans when they reside in continental Europe, but are much lower once they live in the UK, Ireland or Northern Europe. Eastern Europeans are more satisfied with institutions of any destination country than their home country, with one exception when they reside in another Eastern European country. Their satisfaction with the health system in another Eastern European country seems to be particularly low.

The fact that overall averages deviate from country-of-residence averages implies that we should definitely



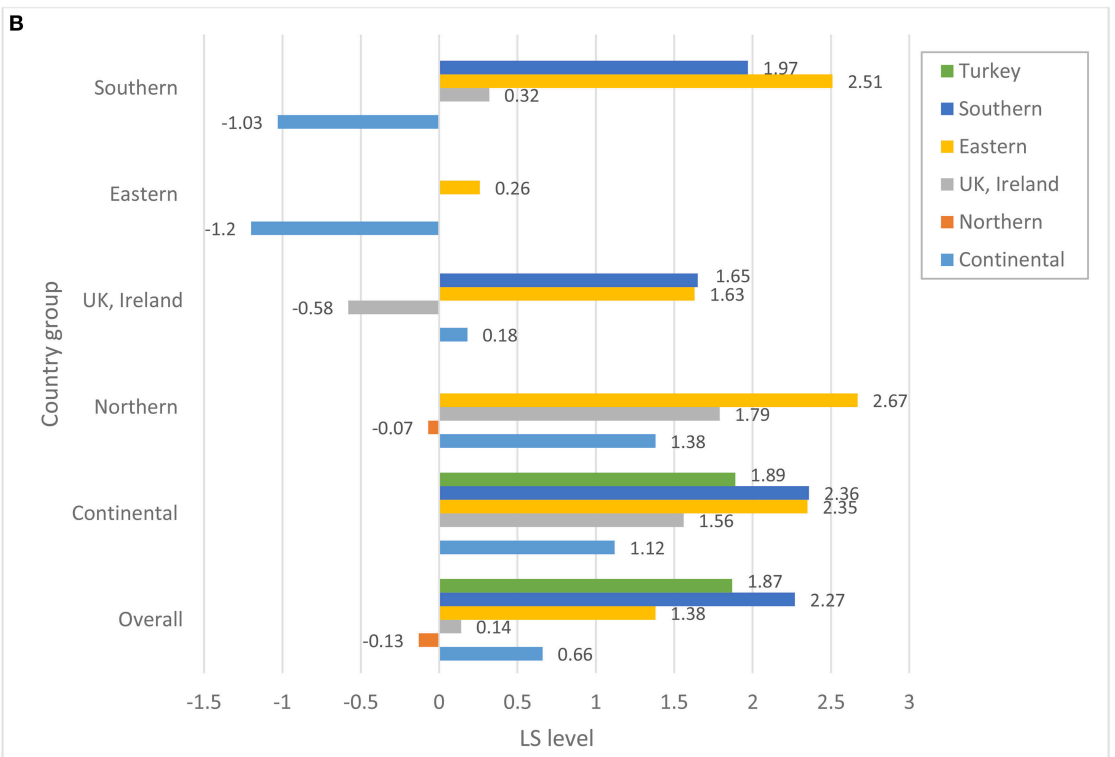


FIGURE 2 | (A) Satisfaction with the state of democracy, absolute level. **(B)** Satisfaction with the state of democracy, relative to stayers in the country of origin. Source: ESS 2008-2016 (rounds 4–8), weighted data, authors' calculations.

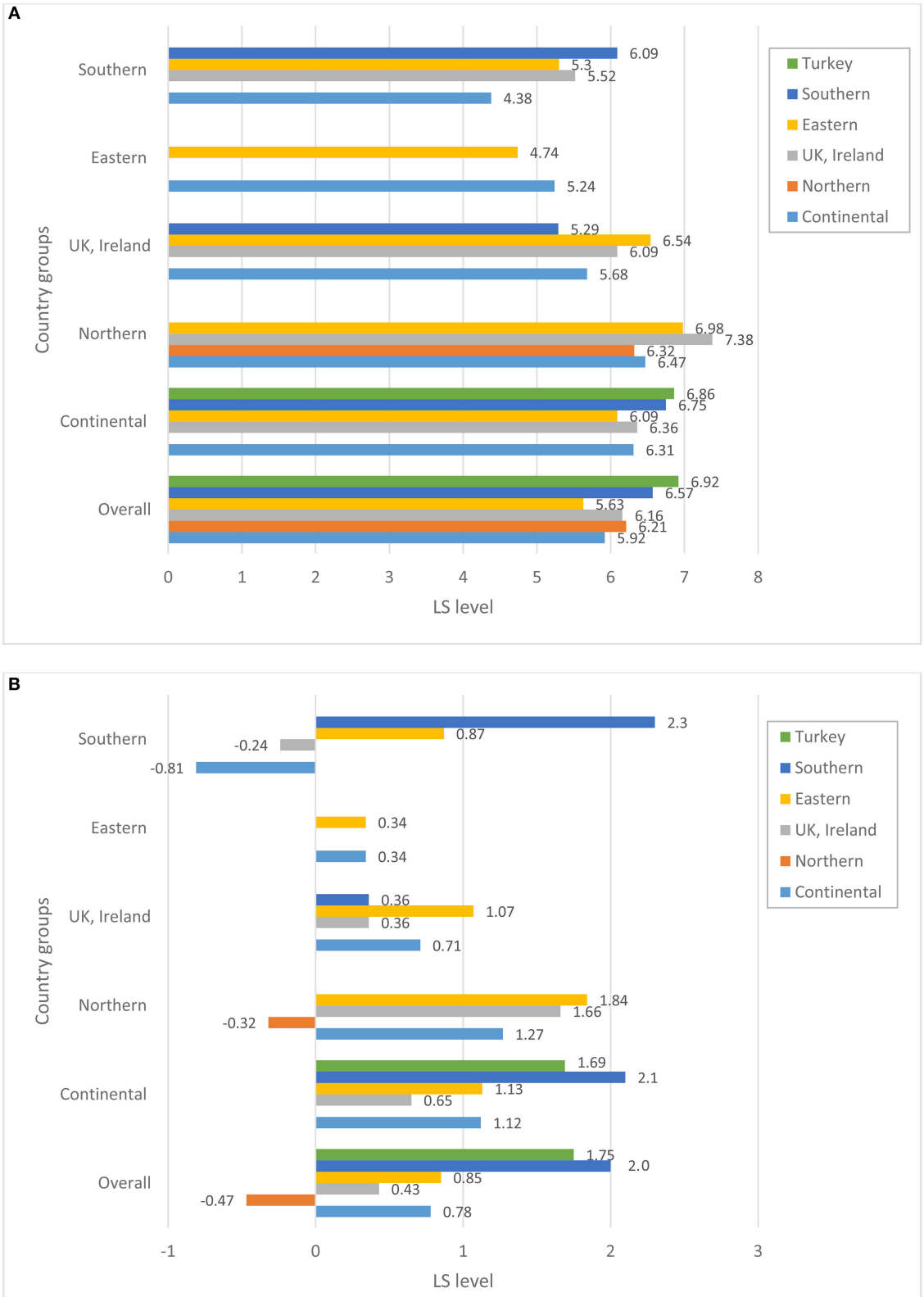
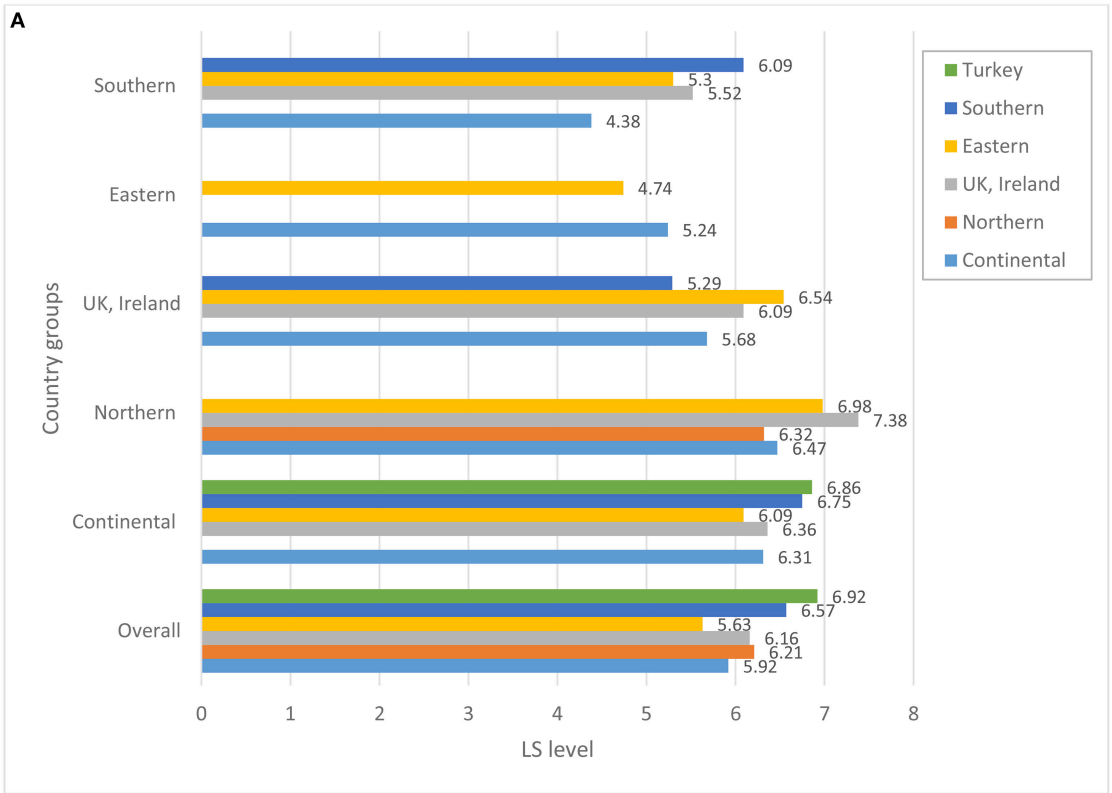


FIGURE 3 | (A) Satisfaction with the state of education system, absolute level. **(B)** Satisfaction with the state of education system, relative to stayers in the country of origin. Source: ESS 2008-2016 (rounds 4–8), weighted data, authors' calculations.



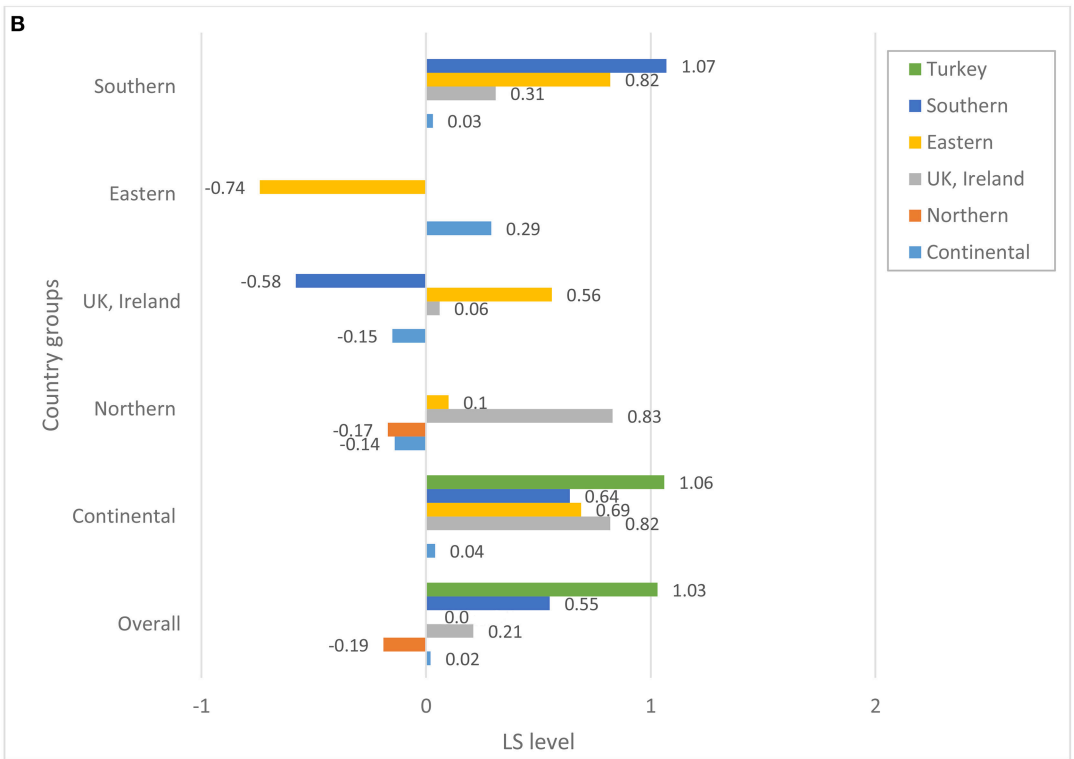


FIGURE 4 | (A) Satisfaction with the state of health system, absolute level. **(B)** Satisfaction with the state of health system, relative to stayers in the country of origin. Source: ESS 2008-2016 (rounds 4–8), weighted data, authors' calculations.

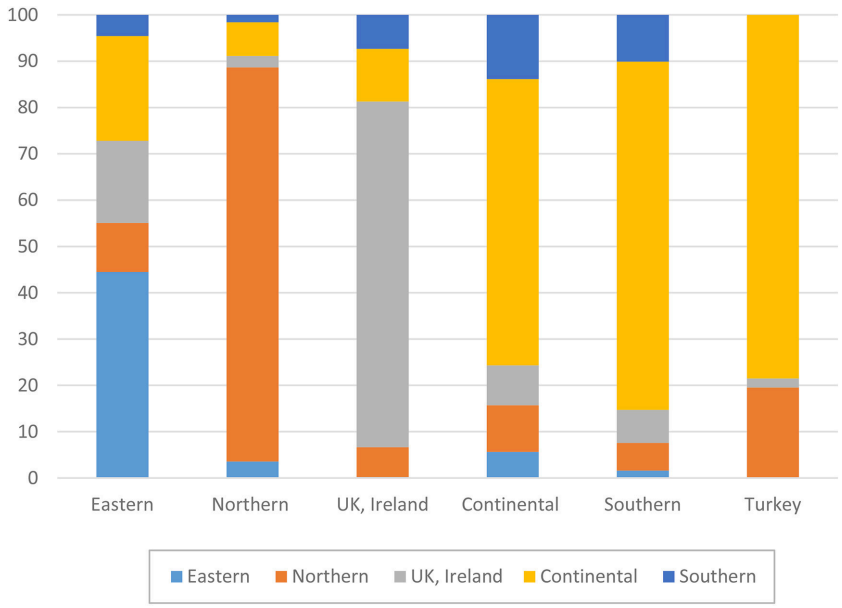


FIGURE 5 | Composition of immigrants in European receiving regions by origin. Source: ESS 2008-2016 (rounds 4–8), weighted data, authors' calculations.

consider differences in the distribution of origin groups across destination countries. Thus, if we look at the total pool of immigrants (see **Figure 5**) we immediately notice that, for example, the bulk of immigrants from Nordic countries reside in other Nordic countries. Similarly, a large majority of Irish and British immigrants reside in Britain or Ireland, respectively. Obviously, if these immigrants were to compare the institutions of their host countries with those of their sending countries, they might not find any substantial differences. This might be different for Turks, Eastern and Southern Europeans. The bulk of Southern European migrants reside in the continental European countries, whereas only a small share of them live in other Southern European countries. Among Turkish immigrants, the two key destinations are continental and Northern Europe. It is fair to assume that Turks and Southern Europeans residing in wealthier countries of Europe might be particularly satisfied with the functioning of institutions in these countries once comparing them to those in their sending regions. The case of Eastern Europeans is somewhat different. Almost a half of all Eastern Europeans reside in other Eastern European countries, but a substantial proportion of them is found in the continental European countries, Ireland and the UK. Similarly, immigrants from continental countries reside in various destinations, with about a half of them settling in another continental country. So, it is not surprising that for these two groups, we find a large variation in assessments of host-country institutions, with Eastern Europeans being rather satisfied, for example, with economy in Nordic countries, but not in another Eastern European destination, or immigrants from the continent being satisfied in another continental country, but not in Ireland or the UK (cf. **Figure 1B**).

Multivariate Results

Descriptive results presented in **Figures 1A,B**−**4A,B** demonstrate substantial variation in levels of satisfaction with institutions across immigrant groups, overall and separately by destination. We also acknowledge differential settlement patterns among immigrants in European countries in **Figure 5**. The multivariate analyses presented in this section will take the heterogeneity of immigrants' destinations by means of host country fixed effects. In such a way, our models seek to fully control for host country–specific factors, thus making it possible to compare the perceptions of institutions among immigrants residing within the same country. **Table 1** reports selected coefficients from the OLS regression models predicting overall life satisfaction as a function of satisfaction with host country institutions (state of democracy, health services and education system) as well as satisfaction with economic situation, while controlling for an extensive set of individual background characteristics described in the methods section. Whereas the results in the four left columns pertain to the absolute measures of area-specific life satisfaction, the results in the last four columns report respective findings concerning relative measures of life satisfaction, i.e., satisfaction with host country relative to source country institutions (as they are reported by socio-demographically comparable stayers). In order to estimate the statistical significance of the coefficients of area-specific satisfaction for every origin group directly, we ran each model 6 times by using each of the respective origin groups as the baseline. Consequently, coefficients in Columns 1 and 5 directly indicate both the magnitude and statistical significance of the b-coefficient pertaining to the perceptions of host country institutions in life satisfaction for each respective origin group. Standard errors and beta coefficients are found in columns 2–3

and 6–7, respectively. Columns 4 and 8 document whether the coefficients pertaining to the group in question are statistically significant from another group, indicated in the table by a letter. For example, "the effect" of the absolute level of satisfaction with the state of economy on the overall life satisfaction is significantly different for immigrants from continental and Northern European countries. Regarding the relative levels of satisfaction with economy, the "effects" for continental European immigrants are different from those found among immigrants from Eastern and Southern Europe as well as Turkey. The sample size for the analyses of the relative satisfaction with institutions is somewhat lower due to some missing matches in the stayer sample. This might hinder the direct comparability of the coefficients across models with absolute and relative satisfaction with host country institutions. Restricting the sample size in the models of absolute measures of satisfaction to the cases used in the analyses of the relative measures of satisfaction yields rather similar patterns (results are not shown but available upon request).

A close look at the first column in **Table 1** suggests that satisfaction with economy contributes significantly to the overall life satisfaction across all origin groups, and the magnitude of the respective coefficients is much higher than when it comes to the satisfaction with the state of democracy, education system, or health services. This clearly accords with our first hypothesis.

Alongside this general pattern, there are some host country group differences that require particular elaboration. Satisfaction with economy contributes least to the overall life satisfaction among immigrants from Northern Europe and the difference to other groups (apart from those coming from Ireland and the UK) is statistically significant. Among Eastern and Southern Europeans as well as Turks, satisfaction with the economy contributes substantially to the overall life satisfaction, and the difference to immigrants from Nordic countries, UK and Ireland is statistically significant. Among immigrants from continental countries the state of economy plays a considerable role in the overall life satisfaction, the coefficient is, however, statistically different only if compared to the one found among Northern European immigrants. All in all, this supports the second hypothesis, which expects perceptions of economy to play a particularly strong role in life satisfaction of immigrants from Turkey, Southern and Eastern Europe. For these immigrants, perceptions of economy contribute to the overall life satisfaction both substantively and statistically (with a single exception of the comparison to immigrants from continental countries) stronger than it is the case of other immigrants.

Perceptions of the state of democracy contribute significantly to the overall life satisfaction among immigrants from Ireland/UK, Turkey and Eastern Europe. These coefficients are, however, largely not statistically different across various immigrant groups[6]. Perceptions of the state of education system contribute significantly to the overall life satisfaction among immigrants in Ireland/UK and Eastern Europe, but here again, we observe no significant difference across immigrant groups in the strength of association between evaluations of country's education system and individual life satisfaction. Satisfaction with the state of health services significantly matters for the overall life satisfaction among immigrants from continental and Eastern Europe, but the respective coefficients are not statistically different from the ones pertaining to other immigrant groups.

But what if we assume that immigrants compare themselves with the stayers in their origin countries when evaluating host country institutions? Does this alternate the association between satisfaction with institutions in the host country and overall life satisfaction? The answer can be found in columns 4–8 of the same table. Results clearly indicate that immigrants from Turkey, Southern and Eastern Europe attach higher relative importance to a favorable economic situation in the host country (vs. home country) in their overall life satisfaction compared to immigrants originating in other European countries. In other words, relative satisfaction levels with the state of economy contribute substantially more to these immigrants' overall life satisfaction. Satisfaction with economy matters also for the life satisfaction of immigrants from continental and northern Europe, Ireland and the UK, but the respective coefficients are of much lower magnitude. Moreover, they tend to differ from the coefficients related to the absolute levels of satisfaction with the state of economy, particularly among immigrants from continental countries. Other patterns are much in line with the results pertaining to absolute levels of satisfaction with host country institutions presented in columns 1–4.

In sum, the findings for European immigrants residing in other European countries largely confirm our first hypothesis about European immigrants of working age attaching larger importance to satisfaction with economy once defining their overall levels of life satisfaction. Immigrants from Turkey, Southern and Eastern Europe display higher levels of association between both absolute and relative levels of satisfaction with economic performance of the host country and the overall life satisfaction. Both findings concord with the second and third hypotheses.

In a set of additional analyses (see **Appendix Figures A.1–A.4**), we ask a related question, how immigrants' perception of host-country structural conditions and institutions compare to those of the native-born and whether they are uniquely associated with individual life satisfaction. A variable, pertaining to the difference in the level of satisfaction with the state of economy, democracy and public goods between immigrants and comparable native-born in host countries is created similarly to the variable capturing difference between immigrants and stayers in immigrants' home countries. Our results indicate that immigrants tend to be overall similarly or more satisfied with the functioning of host-country economy, democracy and systems of public goods compared to the native-born population in these countries. Whether this is an indication of particular immigrant optimism or a manifestation of realized mobility aspirations needs to be explored in the future. Still there are exceptions to the general trend of positive assessment of host-country institutions. Thus, Eastern European immigrants residing in Eastern European countries

[6]A single exception is the difference between the respective coefficient for Irish/British and immigrants from the continental Europe, but the coefficients are different solely at the 10% level.

TABLE 1 | Selected coefficients from OLS regressions predicting life satisfaction among immigrants in Europe arriving since 1955.

	Absolute				Relative to stayers in the country of origin			
	b	se	beta	Sign. dif.	b	se	beta	Sign. dif.
(A) CONTINENTAL								
State of economy	0.23***	(0.04)	0.27	b	0.15***	(0.03)	0.19	d, *e*, f
State of democracy	0.05	(0.03)	0.05		0.03	(0.03)	0.03	c
State of education	0.01	(0.03)	0.01		0.00	(0.03)	0.00	
State of health system	0.08**	(0.03)	0.09		0.10***	(0.03)	0.13	*c*, e
(B) NORTHERN								
State of economy	0.12*	(0.05)	0.14	a, d, e, f	0.10*	(0.05)	0.13	d, e, f
State of democracy	0.07	(0.05)	0.08		0.10*	(0.05)	0.12	
State of education	0.04	(0.05)	0.05		0.02	(0.04)	0.02	
State of health system	0.05	(0.05)	0.05		0.05	(0.05)	0.06	
(C) IRELAND/UK								
State of economy	0.17***	(0.04)	0.20	d, *e*, f	0.15***	(0.04)	0.18	d, e, f
State of democracy	0.13***	(0.04)	0.15	*a*	0.13***	(0.04)	0.15	a, *d,*
State of education	0.08*	(0.04)	0.08		0.07^{+}	(0.04)	0.08	
State of health system	0.01	(0.03)	0.02	*d*	0.03	(0.04)	0.04	*a*
(D) EASTERN								
State of economy	0.28***	(0.02)	0.33	b, c	0.24***	(0.02)	0.30	a, b, c
State of democracy	0.09***	(0.02)	0.10		0.05**	(0.02)	0.06	*c*
State of education	0.05*	(0.02)	0.05		0.05*	(0.02)	0.05	
State of health system	0.07***	(0.02)	0.09	*c*	0.07***	(0.02)	0.09	
(E) SOUTHERN								
State of economy	0.26***	(0.04)	0.31	b, *c*	0.24***	(0.04)	0.29	*a*, b, *c*
State of democracy	0.06^{+}	(0.04)	0.07		0.05	(0.04)	0.06	
State of education	0.07^{+}	(0.04)	0.07		0.04	(0.04)	0.05	
State of health system	0.03	(0.04)	0.04		0.00	(0.04)	0.00	a
(F) TURKEY								
State of economy	0.28***	(0.04)	0.33	b, c	0.29***	(0.04)	0.36	a, b, c
State of democracy	0.12**	(0.05)	0.13		0.09*	(0.04)	0.11	
State of education	0.05	(0.05)	0.05		0.01	(0.05)	0.01	
State of health system	0.07^{+}	(0.04)	0.08		0.06	(0.04)	0.08	
N		5,292				5,100		
R^2		0.39				0.37		

Source: ESS 2008-2016 (rounds 4-8), weighted data, authors' calculations.
(1) $^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$; (2) Letters in column 4 and 8 indicate whether differences of the group shown are significant compared to the groups indicated by a letter; letters in bold pertain to coefficients significant solely at 10%-level. (3) Control variables included in the model are: age, age squared, gender, family status, presence of children, employment status, YSM, citizenship status, income, language spoken, social contacts, safety situation, subjective health, religiosity, minority status, origin groups main effects, country of residence fixed effects, year of interview fixed effects.

other than countries of their birth appear to be less satisfied with the state of economy, democracy and health system compared to the natives. British and Irish immigrants are less satisfied with the economy in Nordic countries than the natives of these countries. UK/Irish and immigrants from Southern European countries are less satisfied with education system in Southern Europe, whereas immigrants from Nordic countries are less favorable about the education system once they reside in another Northern European country. The differences in life satisfaction between immigrants and comparable natives are, however, smaller in magnitude than the respective differences in hypothetical comparisons with the stayers.

Results of the multivariate analyses (Table A.2) deliver a picture, which largely resembles patterns of association between the absolute levels of satisfaction with host country institutions and individual life satisfaction. Still, the main message holds: economy matters most and it matters stronger for immigrant groups, which emigrated from areas marked by lower levels of economic development.

Summary and Discussion

In recent years, the European continent has experienced a considerable rise in migration. Whereas, a large proportion of newcomers are immigrants and refugees from the Middle East, they are not the only significant source of migration to

the European continent. For several decades, migration flows within Europe have also been salient. In the last decades, the enlargement of the European Union to the East has contributed to a significant increase in East–West migration, while the recent economic crisis has amplified incentives for the Southern Europeans to migrate to the North of Europe. Similarly, in the past, wealthier European countries resorted to recruitment of foreign labor force from more peripheral European regions and accepted significant numbers of asylum seekers from the countries on the other side of the Iron curtain or refugees fleeing wars in the former Yugoslavia or deadly ethnic conflicts in Turkey. The questions this study addressed were whether and how immigrants' perceptions of the host countries contribute to their life satisfaction. Since host countries are often assessed through the lenses of the sending countries and are presumably indirectly compared to the latter, considering relative levels of satisfaction with host and sending country institutions would be a rather meaningful approach. Hence, in the current study we examined the role of both the absolute and the relative levels of satisfaction with host countries' health and education systems, the functioning of their democracies and the state of their economies on immigrants' overall life satisfaction.

In accordance with the first hypothesis, out of the four domains related to the performance of the host country institutions, satisfaction with economy proved to be the strongest correlate of individual life satisfaction among European immigrants. In support of the second hypothesis, the study maintained that satisfaction with the countries' economies correlates particularly strongly with the overall life satisfaction among immigrants from Turkey, Eastern and Southern Europe. Such a pattern is especially pronounced if we refer to the relative levels of satisfaction with the functioning of economy, which accords with our third hypothesis. In other words, if immigrants at all compare their host and home countries when assessing institutional features of host countries, relative gains in satisfaction due to well-functioning host country institutions are shown to be associated with significantly higher levels of overall life satisfaction among immigrants from Turkey, Eastern and Southern European countries than among immigrants from the rest of Europe. This implies that—in relative terms—migration from countries with presumably worse to countries with better functioning economies and—associated with that—higher levels of perceived satisfaction with host country economies contribute considerably to immigrants' overall satisfaction with life.

In addition to the economy, other features of host societies also matter, but to a considerably lesser extent. Our study showed that perceptions of the state of democracy matter in both absolute and relative terms for immigrants from Turkey, Eastern Europe and Ireland. The state of education system matters for the overall life satisfaction of immigrants from Ireland/UK and Eastern European countries, whereas the state of health services plays a significant role in overall life satisfaction of immigrants from continental and Eastern Europe. Taken together, we can conclude that Eastern Europeans are an immigrants group, for which well-functioning institutions and economy are particularly important for overall life satisfaction.

At large, our results echo major conclusions from Böhnke's (2008) study; namely, perceptions of societies differ in their strength as a determinant of life satisfaction across European countries depending on the level of these countries' development. Our study takes this idea further and shows that individuals from economically prosperous regions with a functioning democracy and efficiently operating systems of public goods tend to put less emphasis on the host country's institutional features when assessing their life satisfaction. If immigrants stem from countries that perform less well—economically or otherwise, the host country's economic and other conditions play a more substantial part in their life satisfaction, even if they are relocated to better-off host societies. Immigrants from Turkey, Eastern and Southern Europe are aware that their life chances depend quite strongly on the improvements—most importantly, in the economic dimension—associated with their migration move.

Another interpretation is possible and might be related to the economic recession European societies endured between 2008 and 2014. Indeed, in this period the bulk of the European countries were strongly affected by first the economic and then the Euro crisis. Concerns about the functioning of countries' financial and labor markets could buttress the finding that immigrants of working age prioritize economic well-being when defining their overall life satisfaction. If it were so, then a similar trend should be observed among socio-demographically comparable native-born populations in the respective host countries. Additional analyses indeed show that satisfaction with the economy is also the most important correlate of individual overall life satisfaction among natives, but the magnitude of beta-coefficients for the majority is considerably lower than it is among the immigrant populations (results are not presented here but available upon request). Further, re-analyses of the data once dropping ESS waves 4 and 5 suggest no substantial change in the pattern of association between perceptions of the state of economy and general life satisfaction among immigrants. If anything, effects of economy become somewhat stronger for immigrants from the UK/Ireland and Turkey, whereas they become somewhat weaker for immigrants from Nordic countries. This suggests that our finding of a paramount significance of economy for immigrants' life satisfaction is not solely driven by the financial and Euro crises catching eye of Europeans in the period under observation.

Our finding that immigrants in many cases assess host-country institutions more positively than both stayers and—even more pronouncedly—than the native-born of the destination countries can be related to the selectivity of migrants. Research has consistently shown that immigrants might be selective on a number of unobserved characteristics, such as immigrant optimism or more positive attitudes to life. If immigrants are generally happier than stayers, which some research tends to suggest—albeit not always consistently (Bartram, 2013, 2015; Akay et al., 2017; Hendriks and Bartram, 2018)—, this might explain their more positive assessment of countries' structural and institutional characteristics, but cannot explain the variation across immigrant groups and countries of destination. Additional assumptions might be needed to elucidate why divergent patterns of evaluations are present. For example, why are immigrants

from continental countries in Eastern Europe less satisfied with economy when potentially comparing themselves to their home countries, but are more satisfied than the native-born in the Eastern European countries? Or, on the contrary, why are UK/Irish immigrants in Nordic countries particularly satisfied with economy when comparing themselves to the situation back home, but are considerably less satisfied when comparing it to the native-born of the Northern European countries? Without disregarding the role immigrant selectivity might play in migration decisions and the subsequent outcomes related to life satisfaction, we contend that assessments of the objective state of host-country institutions cannot be primarily driven by immigrants' self-selection patterns.

Unfortunately, the cross-sectional nature of the ESS data does not allow an in-depth investigation about the mechanisms behind the observed associations. The reverse causality might be of concern: individuals who are more satisfied with their lives might be more likely to report satisfaction with the host country institutions. Yet, this cannot explain the extent of variation regarding the importance of various host country features: immigrants of different origins attach different meanings to a well-functioning economy and democracy in their host countries as well as to the state of their education and health systems. Heterogeneous effects across immigrant populations, related to differences in needs and/or aspirations, might also be a venue for future research. For example, older or chronically ill individuals might attach significant importance to health services, while parents of smaller children value a well-functioning educational system more. These issues open multiple opportunities for further investigations.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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Immigration, Discrimination, and Trust: A Simply Complex Relationship

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Many immigrants experience discrimination. In this paper we consider how discrimination affects their trust. We make a theoretical case for a formal mediation approach to studying the immigration, discrimination, and trust relationship. This approach shifts attention to the basic fact that the overall *levels* of discrimination experienced by different immigrant and native-born groups are not the same. We also build on previous empirical research by considering multiple forms of discrimination, multiple types of trust and multiple immigrant/native-born groups. Drawing on the 2013 Canadian General Social Survey data ($N = 27{,}695$) we analyze differences in three kinds of trust (generalized trust, trust in specific others, and political trust), and the role of perceived discrimination (ethnic, racial, any), between five immigrant-native groups (Canadian-born whites, Canadian-born people of color, foreign-born whites, foreign-born people of color, and Indigenous people). We find that perceived discrimination is more relevant to general trust and trust in specific others than to political trust. We also find that perceived discrimination explains more of the trust gap between racialized immigrants and the native-born than the gap between non-racialized immigrants and the native-born. The results illustrate that what appears to be a simple relationship is far more complex when attempting to explain group differences.

Keywords: immigration, trust (social and political), mediation analysis, discrimination, race

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INTRODUCTION

Although there are a few exceptions, many immigrants as well as other ethnic and/or minority group members tend to trust less in generalized others (Smith, 2010; Ziller, 2017). Nor is this surprising given the discrimination that minority group must often endure. The trust gap extends to immigrants and non-immigrant groups in a variety of immigrant receiving societies in the European context (Kotzian, 2011; Mewes, 2014) including Denmark (Bjørnskov, 2008) and the Netherlands (De Vroome et al., 2013). Trust gaps have also been documented in the North American context including in Canada and the United States (Chávez et al., 2006; Hwang, 2017). Conversely, in the case of particularized social trust in family, friends and relatives, immigrants tend to trust their own group members more than out-group members (Uslaner, 2017). Finally, when it comes to political trust, the relationship appears to be the opposite—immigrants tend to trust government more than the native-born or is at the very least mixed (Bilodeau and Nevitte, 2003).

While many studies have explored how discrimination might matter for immigrants' trust (e.g., Dinesen, 2010, 2012; Dinesen and Hooghe, 2010), no study has been able to delineate whether discrimination against immigrants occurs as a result of immigrantstatus or because of race (via the process of racialization). A key way to think about this relationship is that migrants in a new society

have effectively changed their relative position (Wilkes and Wu, 2018)—many becoming not only "migrants" but also "racialized minorities." Consider, for example, migrants from China. When they are in China the vast majority (if they are Han Chinese) will be in the ethnic majority group. Upon arrival in any new destination they will likely be in the minority group. And, it is very likely that, in this new social position, they will be subjected to discrimination. For example, in their study of the experience of Chinese immigrants in the United States Qin et al. (2008) provide the example of student from Hong Kong who says about the bullying that he experiences "In Hong Kong, no one treats me like that...They are not targeting one individual student, they target the entire group of Chinese students." This is not an isolated example.

In this paper we consider how discrimination mediates the relationship between nativity and different kinds of trust. We argue that, a focus on *who* discrimination matters for, and for what kind of trust, can be used to explicate the meaning of immigrant-native gaps in trust. In the above case it appears that the student was targeted due to being an immigrant. But, in the U.S. context the student is also a racialized minority. Native-born racialized minorities also trust less (Smith, 2010; Wilkes, 2011). Both groups often have higher political trust. Therefore, we ask, are these trust gaps and the impact of discrimination reflective of the nature of being an immigrant or are they reflective of being a racialized (minority)? To what extent does the answer to this question in turn, depend on the type of trust? An answer to these questions requires disentangling the effects of discrimination based on nativity from the effects of discrimination based on racialization.

We do so by considering how different categories of nativity, race and discrimination operate on trust within the Canadian context[1]. As a high-immigration and high trust society, Canada provides an ideal case with which to think about these relationships. Although Canada is a high trust society globally, there are still group differences in trust (Soroka et al., 2006). Similarly, while Canada also has an international reputation for diversity and a policy of official multiculturalism enacted in 1988 it has not been immune to problems of ethnic and racial discrimination. The data for this study comprise the 2013 Identity Cycle of the Canadian General Social Survey. We use this dataset to test whether the potential mediating effect of discrimination on the immigrant gap in trust is about race or nativity.

[1]In the Canadian context it is important to reflect on the use of the term "native-born." The term native-born is used in a context where citizenship is jus soli or born on the soil. Inherent in the term native-born is a suggestion of originality. In a context of settler colonies such as Canada the original native-born are Indigenous people. The use of native-born to describe successive groups of Canadians suggests that the important difference in nativity is between groups of immigrants (whether they acquired their citizenship via jus soli or via naturalization) and the timing of their arrival rather than between Indigenous and non-Indigenous peoples. What this means is that the reference group in any comparison of Immigrant-native born should be Indigenous people rather than earlier immigrant groups such as the British and French. This is a project we are currently working on and we acknowledge this as a major limitation of the framework of this paper. We are grateful to Henry Yu for discussions with us on this point.

IMMIGRATION AND TRUST

Trust is invisible. While we can see the manifestation of many social science topics such as protests, homicides, births, and urban disorder, this is not the case with trust. Nevertheless, trust is essential to our very existence as social beings, similar to the role of oxygen for our biological survival. Society as we know it is not possible without trust. Trust correlates with important individual-level benefits including increased life satisfaction, health, and happiness (Helliwell et al., 2014).

As such, trust is a positive topic. Unlike issues such as terrorism, environmental disasters, genocide, and poverty, trust doesn't appear to be an urgent "problem." And yet, as the recent explosion of psychological research on happiness illustrates, it is also the case that while negative topics such as depression, anxiety and suicide once predominated positive topics are now widely accepted as being as important (see e.g., Diener discussion in Belic, 2011). Trust is similar. Even though it is not an obvious problem *per se* it is at the same time vital for our well-being. For these reasons trust has become one of the most significant areas of social science inquiry (Uslaner and Brown, 2005).

Trust is "a generalized expectancy held by an individual or a group that the word, promise, verbal, or written statement of another individual or group can be relied on" (Rotter, 1971: 44). It appears to be a simple concept but has been the subject of considerable debate. Some scholars say that trust is a form of "social credit" or "encapsulated interest" in which an individual does something for another with a view to a future return (Coleman, 1988; Hardin, 1999). Others say that it is less instrumental and more about whether the object of trust is concerned with one's general interest and well-being.

Based on the object or targets, trust can take several forms including social (generalized, specific) and political-institutional. *Generalized trust*– typically indicated by the question "most people can be trusted" refers to a generalized and unknown other. This form of trust has been shown to positively impact a host of other desirable outcomes including social cohesion (Putnam, 1993, 1995, 2001) "well-being," and "governance" (Uslaner, 2017; p. 1). *Specific trust* in targeted groups such as family, friends, or relatives, or even racial and ethnic groups is integral for group cohesion and inter-group relations (Yuki et al., 2005). *Political trust* is needed for effective government functioning (Citrin, 1974; Easton, 1975; Wu and Wilkes, 2018a). Government cannot make effective policy or difficult decisions if its citizens do not trust it to do the right thing.

It has been well-established that on average immigrants tend to trust generalized others less than the native born (see Bilodeau and Nevitte, 2003; Kazemipur, 2006; Nakhaie, 2008; Stolle et al., 2008; Doerschler and Jackson, 2012; Hwang, 2013; Nakhaie and de Lint, 2013). This finding holds in Canada (Baer et al., 1993; Hwang, 2013), Europe (Kotzian, 2011; Mewes, 2014) and for some groups in the United States (Uslaner, 2008). In the case of particularized social trust, in-group members tend to trust their own group members more than out-group members (Uslaner, 2017). On the other hand in the case of political trust, whereas many racialized native-born groups such as Black Americans and Indigenous peoples generally have lower political

trust (Avery, 2006, 2010; Wilkes, 2014, 2015; Hwang, 2017), some immigrant groups tend to have higher political trust (Nevitte and Bilodeau, 2003; Bilodeau and White, 2016). These trust gaps matter not only for the individuals themselves but also for larger societal cohesion.

Several studies attribute the lower generalized trust of immigrant groups to the fact that they came from societies that engender distrust (Uslaner, 2008; Dinesen, 2012, 2013; De Vroome et al., 2013; Ziller, 2014). This argument has been tested by looking at whether trust levels are different between migrants (in a new society) and natives (in new society) as well as what the mean trust level is in the point of origin. However, as the above examples illustrate, there is still fuzziness around whether trust gaps are reflective of differences in the experience of nativity or differences based on racialization (or both) and if so how this might be tied to discrimination in the new society.

DISCRIMINATION AS A MEDIATOR

Discrimination refers to "inappropriate and potentially unfair treatment of individuals due to group membership." (Dovidio et al., 2008: p. 8; see also Allport, 1979). While discrimination is a behavior or experience, its roots are prejudicial (that is negative) attitudes about a given individual based on stereotypical attitudes about the group that an individual is perceived to belong to Pettigrew (1998). As a number of scholars who conduct experimental research show, discrimination does not necessarily occur at a conscious level (Foschi, 2000; Ridgeway, 2001). Clearly while discrimination can occur based on many perceived characteristics—age, gender, appearance etc.—of interest here is racial and ethnic discrimination. As Quillian (2006: p. 302) notes, "discrimination is the difference between the treatment that a target group actually receives and the treatment they would receive if they were not members of the target group but were otherwise the same."

Discrimination is likely to be a particularly salient predictor of trust because, rather than being a characteristic that, to some extent one might come to terms with or even change, it is an external set of events and experiences that shapes one's ability to successfully navigate life within a larger society. Furthermore, because of these experiences, and their day-to-day unpredictability, individuals can never be sure where or when these experiences will occur again. Individuals who have experienced discrimination must always be on their guard, and cannot therefore, afford to trust. This is why "minorities who feel discriminated against will be less sanguine about their prospects for sharing in society's bounty." (Rothstein and Uslaner, 2005: p. 51). Kumlin and Rothstein (2007), for example, make the case that if individuals experience discrimination in one avenue, such as the political sphere, this will also spill over and affect other forms of trust, including trust in others.

There are a few studies that have considered the relationship between discrimination and trust and that have done so for specific immigrant groups. Liebkind and Lahti (2000), for example, find that discrimination affects confidence in institutions for six of seven immigrant groups in Finland.

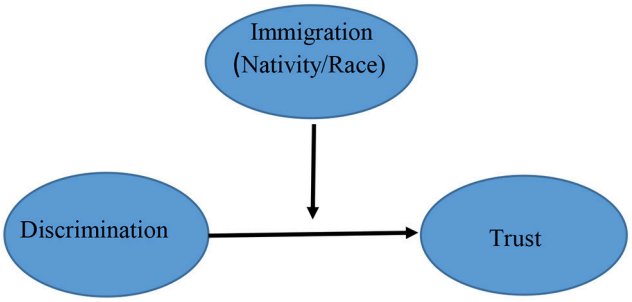

FIGURE 1 | Moderating relationship.

Kääriäinen and Niemi (2014) analyzed the association between the experience of discrimination and trust in the police for Russian and Somali minorities in Finland but only found a relationship for Somalis, a finding that they attribute (though do not test directly) to racial discrimination. Schildkraut (2005) finds that perceptions of individual-level discrimination lowers Latinos' trust in the U.S. government. In contrast, Dinesen (2010) finds that early experiences of discrimination does not affect generalized trust among Danish immigrants.

Still, the predominant approach in these studies is to consider the effect of discrimination on trust across immigrant groups or to consider the relationship between discrimination and trust within immigrant groups (moderation). **Figure 1** shows the standard moderating approach to the immigration-discrimination trust relationship. Essentially this approach is testing whether the effect of discrimination on trust is variable—that is whether the trust of some immigrant groups is more sensitive to discrimination. However, this approach cannot explain the extent to which discrimination accounts for the gap in trust between immigrants and the native-born. That is the fact that the *levels* of discrimination are higher (or potentially so) for immigrant and/or racialized groups also needs to be taken into account and done so as more than a control. This is because conceptually what matters is the fact that immigrants typically experience more discrimination than the native-born. While a small minority may have experienced discrimination in their place of origin discrimination is an experience that is a function of location within the new host society (see also Dinesen, 2012, 2013 on the move from low to high trust societies). This latter scenario suggests a mediating rather than a moderating relationship, and therefore is an explanation where the emphasis is on why, rather than how, groups differ (Reskin, 2003). **Figure 2**, above, illustrates this mediating relationship where the effect of immigrant status is explained by discrimination and the focus is on *gaps* in trust. In both cases we include nativity and race as subcomponents of the concept of immigration.

Only one study to date (Röder and Mühlau, 2012) has attempted to think about the relationship between discrimination and trust in this way and it does not actually measure discrimination. Röder and Mühlau (2012) test whether discrimination can account for differences in confidence in public institutions between first and second-generation

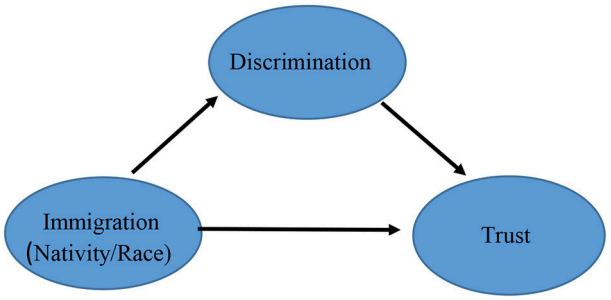

FIGURE 2 | Mediating relationship.

migrants and native born in 26 European countries between 2002 and 2006 and find little effect. However, all the measures they use to indicate discrimination—whether the respondent is an ethnic minority, practices a non-Christian religion, speaks a different language or is a member of a group that experiences discrimination—actually indicates discrimination—are, arguably, indicators of different aspects of ethnicity rather than indicators of discrimination. The few studies that have used a mediation approach to considering explain ethnic differences in trust (e.g., see De Vroome et al., 2013; Wilkes and Wu, 2018) do not have a measure of discrimination and do not use formal mediation analysis. Similarly, while Douds and Wu (2018) include models that look at how discrimination mediates the Black-White and Hispanic-White gaps in trust in Louisiana, they do not use a formal test of mediation. The strength of the mediation framework is that not only does it allow us to assess whether discrimination explains some of the impact of immigrant status on trust but also, as we highlight below, the relative importance of discrimination in explaining trust for different immigrant and native born and racialized groups.

To test this relationship empirically requires datasets that contain sufficient numbers of immigrants and racialized. The problem is that in most datasets the number of respondents who identify as immigrants and/or minority is small (except see e.g., Uslaner, 2011; Dinesen, 2012; De Vroome et al., 2013). A country-specific dataset, might for example, only contain a thousand respondents and will therefore only have responses from a limited number of immigrants and or racialized minorities. Helliwell et al. (2014) have a sample of over 6,000 immigrants but because this sample is derived from 127 countries there is only an average of 47 immigrants per country. Doerschler and Jackson (2012) compare 96 Muslims in Germany to over 3,000 non-Muslims. Nannestad's et al. (2014) comparison trust of various ethnic groups in Denmark includes 276 Turks, 267 Pakistanis, 115 Bosnians and 64 Ex-Yugloslavians. This then precludes a detailed analysis of heterogeneity within minority populations (except see De Vroome et al., 2013). The other issue is that, while most trust datasets such as the World Values or European Social Surveys contain indicators of social capital and socio-economic status, there are typically no direct measures of discrimination.

We do so here using data from the 2013 Canadian General Social Survey Cycle 27, Social Identity and Giving Volunteering and Participating collected by Statistics Canada. As a high-immigration and high trust society, Canada provides an ideal case with which to think about this relationship. While Canada has an international reputation for diversity and a policy of official multiculturalism it has not been immune to problems of discrimination. Of further relevance is that, as of 2016, over one fifth of Canada's population is foreign-born (Statistics Canada, 2016). This, in combination with the very large sample size of the CGSS ($N = 27{,}695$), means that there are over 9,000 immigrants (and over 6,000 people of color).

With these distinctions in mind it can be expected that discrimination (partially) mediates the immigrant-native gap in trust within the Canadian context. That is, immigrant minority status is associated with increased discrimination, which, in turn, decreases trust—immigrant status has an indirect effect on trust via discrimination. More specifically, if this relationship only exists for the race-based groups then the effect of nativity on trust is about being discriminated as a racialized minority. Conversely, if this relationship between immigration, discrimination, and trust only exists for the nativity-based groups then the effect on trust is about being discriminated as an immigrant minority, possibly due to some other factor such as language or social stereotyping about place of origin. Assuming four possible groups for comparison (Canadian-born whites, Canadian-born racialized minorities, foreign-born whites, foreign-born racialized minorities) there are then three possible hypotheses.

H1: Discrimination will mediate the difference in trust between Canadian-born whites and all others (Canadian-born people of color, foreign-born whites, and foreign-born people of color). This would indicate that the impact of discrimination on trust mediates the effects of both nativity and racialization.

H2: Discrimination will mediate the difference in trust between the Canadian–born (white and people of color) and the foreign-born (white and people of color). This would indicate that the impact of discrimination on trust only mediates the effects of nativity.

H3: Discrimination will mediate the difference in trust between whites (Canadian-born and foreign-born) and people of color (Canadian-born and foreign-born). This would indicate that the impact of discrimination on trust only mediates the effects of racialization.

This said these hypotheses focus primarily on whether gaps in trust exist across various nativity and racialized groups. As currently stated these hypotheses generalize across all three types of trust. Which of these hypotheses is the case may also depend on the type of trust. Thus, for each type of trust there are three possible hypotheses to be tested.

DATA

The GSS Social Identity model is designed to "understand how social integration is being built among people living in a modern, diverse society with multiple ethnicities and backgrounds" (Statistics Canada, 2013). Statistics Canada further states that "questions on social networks and norms of trust

will examine the social patterns that hold society together." The dataset contains multiple measures of discrimination. Most datasets either contain too few minorities and/or contain no direct measures of discrimination.

Immigrant, Native, and/or White/People of Color and Indigenous Groups

We identify immigrants and native-born using the place of birth (brthcan), Place of birth asks whether the respondent was born in or outside Canada. While we do not have group-specific identifiers we do have a yes/no visible minority question (vismin)[2], and Aboriginality (AMB_01) variables. We have replaced the terms visible—non-visible minority with the terms people of color white throughout this paper. We do not use visible minority because in the Canadian context this is a misnomer—for example as of 2018 in Vancouver and some of the surrounding areas the visible minority is white.

We also use Indigenous rather than Aboriginal because this is the more widely used term in the contemporary Canadian context. Further is that while Indigenous people are clearly the original "native-born," they cannot be placed into the same category as non-Indigenous native-born. This is because Indigenous people's "identity exists in an uneasy balance between concepts of generic "Indianness" as a racial identity and of specific "tribal" identity as Indigenous *nationhood*." (Lawrence, 2003: p. 4; see also Cardinal, 1999; Christie, 2005). This, in conjunction with the fact that the nature of the discrimination that Indigenous peoples encounter may be qualitatively different, necessitates their inclusion as a separate group.

We combined these questions to identify Canadian-born whites, Canadian-born people of color, foreign-born whites, foreign-born people of color and Indigenous people[3], Note that we replace the term native-born with Canadian-born hereafter. Indigenous people include all individuals who identify as Aboriginal—First Nations, Inuit, and Métis.

Dependent Variables: Generalized, Specific, and Political Trust

We consider three different types of trust –two kinds of social trust—generalized trust (in unknown others), and trust in more specific others- as well as political trust. Generalized trust is measured using the Trust people in general (TIP_10) question which asks respondents whether "generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people?" This is a binary measure with its two outcomes "Most people can be trusted" and "You cannot be too careful in dealing with people." Specific social trust is measured with an additive index of Trust in people in the neighborhood (TIP_15), Trust in people who speak a different language (TIP_22), and Trust in strangers (TIP_25). All three were coded on a 1–5 scale with 1 denoting "Cannot be trusted at all" and 5 denoting "Can be trusted a lot." A factor analysis of a larger list of questions on specific others indicated that these three were congruent (factor loadings are 0.77, 0.74, and 0.64) and we therefore included them in an index that we then re-scaled from 1 to 5 by dividing by three. We measure political trust using a similar index of three variables denoting how much confidence the respondent has in the police (CII_Q1), the justice system and the courts (CII_Q15), and the Federal Parliament (CII_Q40). All three were coded on a 1–5 scale with 1 denoting "No confidence at all" and 5 denoting "A great deal of confidence." These particular objects of trust have been widely used in trust studies and load on a single factor (factor loadings are 0.65, 0.77, and 0.65) (see also Wu and Wilkes, 2018b).

Mediators: Perceived Discrimination

Discrimination (perceived) is measured with three questions indicating "whether the respondents experienced discrimination" on the basis of ethnicity (DIS_15), race (DIS_20), or any discrimination at all in the past 5 years (discrim). Therefore, this was a series of outcomes preceded by the experienced discrimination statement. In the latter case this could include perceived discrimination on the basis of ethnicity, race as well as gender, age or some other characteristic. All are binary measures with 1 denoting yes and 0 denoting no. Because a factor analysis showed that, with the exception of the first two, these do not load on the same component or within all groups, we do not include them in an index.

Control Variables: Socio-Economic Status, Social Capital, and Demographics[4]

Socio-economic status is denoted by education (DH1GED) and work status (MAR_110). Education is a four-category variable with 1 indicating less than high school, 2 graduated from high school, 3 post-secondary diploma and 4 university degree. The work variable originally had 10 categories and because there were small numbers in many of these groups we recoded this measure to denote four groups—working full or part time, student, retired, and other. We also ran all analyses using the household income (incmhsd) variable—the results are similar- but do not retain it as it is not our key focal measure and because, at 22% its rate missingness was too high (see footnote 8).

Social capital, an important control in any study of trust, is measured with volunteering (VCG_300) and number of friends

[2]The GSS file visible minority question asks whether the respondent is a visible minority or not, not their specific group identification. That said, the most recent census indicates that the vast majority of the visible minority population in Canada (61.3%) are South Asian, Chinese and Black (Statistics Canada, 2019). Also included in the visible minority group are "Filipinos, Latin Americans, Arabs, Southeast Asians, West Asians, Koreans, and Japanese." (ibid).

[3]The presupposition in using the brthcan measure is that those born in Canada are not immigrants and that those born outside of Canada are immigrants. When this variable is used in combination with BPR_16 (landed immigrant status) the data show that while 8,164 are landed immigrants there are 726 individuals who are born outside of Canada who are not landed immigrants—e.g., most likely people born outside of Canada to Canadian parents. We re-ran all models omitting these individuals and the results are similar.

[4]See **Appendix** for an elaborated discussion of these approaches. Because they are only available for the foreign-born groups in our model, we do not include a number of measures such as years since arrival (yrarri), landed immigrant programs (LIP_10) and macro- geographic region of birth (brthmacr). Separate analyses (not shown but available from authors) show that, among the foreign-born population, people of color have a more recent average arrival date and are more likely to be refugees than white immigrants.

(SCF_100C). The volunteer measure is a yes/no indicator of whether the respondent volunteered in the last 12 months. The number of friends was an open-ended question asking about the number of close friends. To eliminate skew at the top end of this measure we recoded all responses above 11 in the 11 category. Though not a social capital measure *per se*, we also control for political interest (REP_05) which asks respondents about their interest in politics from "very interested" to "not interested at all." We recoded this variable so that the not interested categories was at the low end of the scale and the very interested was at the high end of the scale.

Demographics include age (AGEGR10), sex (sex), and marital status (marstat). Age is measures on a 7-point scale denoting from low to high the following age groups: 15–24, 25–34, 35–44, 45–54, 55–64, 65–74, and 75 and over. Sex is a binary with one denoting the effect of being female. Marital status originally had six categories that we recoded into a binary measure denoting married vs. all others. We also include urban residence (LUC_RST) in large part because this may have a unique distribution across groups within the Canadian context where many Indigenous peoples live in rural areas and on reserve. This measure is coded as 1 if the respondent lived in a larger urban population centers (CMA/CA) vs. 0 if they resided in a rural areas/small population centres (and also Prince Edward Island which is coded as a separate category and was recoded as 0).

METHODS

In addition to general descriptive and bivariate analysis, we conducted multivariate analyses with a view to ascertaining the extent to which the discrimination variables (M—mediator) mediate the effect of the immigration measures (X—independent variable) on trust (Y—dependent variable). As Preacher (2015: p. 846) notes, because it depends on a host of factors including theory, study design, the data, and the sample "there is no universally correct approach" to mediation. Until relatively recently, the standard formal approach to mediation analysis has been Baron and Kenny's (1986) 3-step method where (1) X was regressed on Y; (2) M was regressed on Y; and finally, (3) M was regressed on X (see e.g., Carpiano and Hystad, 2011)[5]. If all three models show a significant effect then this provides evidence of a mediating relationship, the significance of which is confirmed with a Sobel (1982) test. Although widely-used (Baron and Kenny have been cited over 24,000 times), this approach requires a model with a single rather than multiple mediators, a single rather than multiple independent variables, continuous measures, and a dataset that has a large sample size.

While we do have a large sample size we also have multiple mediators (three binary measures of perceived discrimination—ethnic, racial, and any discrimination), a multi-category set of independent variables, and three outcome measures, one of which—generalized trust—is binary rather than continuous. We use the formal Kohler et al. (2011) (KHB) method which was developed to compared "the estimated coefficients of two nested probability models" (420). There are two reasons why we use this particular method. First, in the case of binary outcomes such as the generalized trust measure, the KHB method addresses the issue of rescaling (e.g., see Mood, 2010; Christensen and Carpiano, 2014; Yang and Park, 2015). Second, the KHB method can be used with multi-category independent variables as well as multiple mediators (Kohler et al., 2011). All multivariate analyses are weighted by the individual WGHT_PER variable[6].

FINDINGS

Table 1 provides the descriptive statistics for the dependent (Y) trust measures, mediating (M) perceived discrimination measures, and control variables across the five independent (X) nativity groups. In terms of trust, irrespective of its type, there are clear differences across groups[7]. Generalized trust is highest among foreign-born Whites. People of color, irrespective of where they are born, have equal levels of generalized trust and it is lowest among Indigenous people. In terms of trust in specific others, it is highest for whites, irrespective of place of birth, followed by Indigenous and lowest for persons of color. Finally, turning to political trust the results show that it is highest among foreign-born persons of color and whites. Levels are lower for the Canadian born group but are the same based on visible minority status. Political trust levels are lowest for Indigenous respondents.

The results also show that, not surprisingly, there are stark differences in the rates of perceived discrimination experienced by the members of different groups. Canadian-born people of color experience (or are the most likely to report such experiences) the highest rates of all forms of perceived discrimination (except physical) across the board. About a third of the members of this group report ethnic and racial discrimination and almost half report some form of discrimination in the previous 5 years. Foreign-born people of color and Indigenous people also report high rates of ethnic and racial discrimination[8]. Finally, as might be expected, we see that the rates of ethnic and racial and overall discrimination are much lower for the two White populations. Still, at least one quarter of both groups report experiencing some form of discrimination in the previous 5 years[9]. These higher rates of discrimination among

[5]The results of a regression of the discrimination variables on the immigration variables is provided in **Table A1**.

[6]This variable adjusts for age, sex, and region. Statistics Canada recommends using bootstrap weights. Because the KHB procedure does not currently allow for this, we conducted separate estimations of all models (without khb) using svyset [pweight=WGHT_PER], bsrweight(WTBS_001- WTBS_500) vce(bootstrap) dof(500) mse command (see http://statcan.gc.ca/pub/12-002-x/2014001/article/11901-eng.htm#a5). As should be expected the point estimates are similar and there are slight changes in the standard errors (see e.g., Kolenikov 2010). The substantive conclusion of the study do not change.

[7]It is worth noting that the logical presentation of the categories normalizes white Canadian as the "norm" from which all others deviate.

[8]Given the current and historical context of Indigenous-Canada relations (e.g., see Taiaiake, 1999; Ramos, 2006; Denis, 2015) the qualification should be made that the reported rates might have been higher for Indigenous people had a specific question been asked about discrimination related to being Indigenous. Further is that any such question might get at overt discrimination but not colonization.

[9]The percentage rate of missing data on each measure is as follows: general trust (2.5), specific trust (9.0), political trust (6.0), age (0.6), gender (0.6), marital status (0.8), rural (0.6), education (1.3), work status (0.8), volunteer (0.8),

TABLE 1 | Mean trust levels, by nativity.

Nativity status	Canadian-born		Foreign-born		Indigenous
	White	Person of Color	White	Person of Color	
Dependent variables (Y)					
Generalized social trust (0.1) (1= trusting)	0.54	0.49	0.6	0.49	0.45
Trust in specific others (1–5) (low to high)	3.29	2.93	3.32	2.94	3.02
Political trust (1–5) (low to high)	3.51	3.52	3.72	4.01	3.36
Independent variables (X)					
Ethno-racial group	61	2	14	20	3
Mediators (M)					
Ethnic discrimination (0.1) (% yes)	4.63	32.24	12.07	29.12	22.62
Racial discrimination (0.1) (% yes)	3.82	33.72	5	28.82	19.57
Any discrimination past 5 years (0.1) (% yes)	25.99	49.42	28.48	40.8	44.61
Controls					
Age (mean 1–10 scale)	4.19	2.14	4.29	3.03	3.54
Female (0.1) (% yes)	55	53	52	52	59
Married (0.1) (% yes)	58.53	32.94	64.85	61.61	54.8
Rural (0.1) (% yes)	23	3	12	2	33
Less than high school (%)	17.53	22.83	10.03	11.89	24.58
Graduated high school (%)	27.37	31.13	21.79	24.41	31.24
Some post-secondary (%)	33.16	19.43	32.44	24.32	32.42
University (%)	21.94	26.6	35.74	39.38	11.76
Employed (%)	55.03	49.3	55.12	62.86	55.13
School (%)	6.79	34.11	7.59	18.22	10.1
Retired (%)	26.11	7.24	24.94	5.95	14.57
Other (%)	12.07	9.35	12.35	12.97	20.2
Number of friends	5.1	5.6	5.2	4.9	4.9
Volunteer (% yes)	36.5	44.2	36.2	34.1	38.7
Political interest	2.8	2.5	2.8	2.5	2.6
N	17,020	534	3,877	5,600	835

All means and percentages are calculated using Statistics Canada bootstrap weighting.

the racialized minority groups show that the more frequent experience of discrimination is a likely explanation for why minorities could have lower trust than majority group members.

The distribution of the control variables is considerably different across the five groups, indicating that it is important that these be included in any model of generalized trust. For example, the foreign-born population has higher rates of university completion than the Canadian-born. This group (of color) also has higher rates of employment. The foreign-born person of color group is most likely to be employed and Canadian-born person of color the least. The rates are similar across the other three groups. The distribution of social capital does vary across groups, though not as markedly as it does for some of the other categories. The white population (native and foreign-born) is considerably older than the person of color population and the Indigenous population. The Canadian-born person of color population is also less likely to be married than any of the other groups. Also persons of color (irrespective of place of birth) are far less likely to live in rural areas than either white populations or Indigenous people.

Table 2 provides the results of the mediation analysis of the logistic regression analysis of generalized trust including controls for demographics, SES and social capital. The first column shows the log odds on trust of a given pathway and the second and third columns show, respectively, whether this pathway is statistically significant and the robust standard error. For each group we provide the total effect—which refers to the gap in trust between that particular group and Canadian-born whites. The next two rows split that effect into the portion of the total effect that is direct and the portion of the total effect that is mediated via the perceived discrimination variables. The latter two add up to the total effect. The fourth column shows the percentage of the total effect accounted for by the mediation pathway. This percentage should be interpreted cautiously insofar as a greater percentage does not de facto imply a greater overall effect—a larger percentage may be explaining a very small effect. The fifth column shows the percentage of that total effect attributed to each mediating variable in the model.

number of friends (2.1), political interest (1.1), ethnic discrimination (2.1), racial discrimination (2.2), discrimination in past 5 years (3.9), ethno-racial/Indigenous origin (1.0). Since this rate of missingness overall is relatively low and because specific and political trust are dependent variables we do not use multiple imputation (see e.g., Von Hippel, 2007).

TABLE 2 | KHB mediation analyses of extent to which discrimination mediates effect of nativity status on generalized trust.

	Estimate		Robust SE	Overall Mediation %
VS. CANADIAN-BORN WHITE				
Canadian-born person of color				
Total effect	−0.317	*	0.127	
Direct effect	−0.144		0.128	
Mediating effect	−0.173	***	0.035	54.66
Foreign-born white				
Total effect	0.121	*	0.057	
Direct effect	0.140	*	0.057	
Mediating effect	−0.019		0.024	−15.94
Foreign-born person of color				
Total effect	−0.339	***	0.060	
Direct effect	−0.210	***	0.062	
Mediating effect	−0.129	***	0.031	38.11
Indigenous				
Total effect	−0.226	*	0.102	
Direct effect	−0.116		0.103	
Mediating effect	−0.110	***	0.027	48.68

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

TABLE 3 | KHB mediation analyses of extent to which discrimination mediates effect of nativity status on trust in specific others.

	Estimate		Robust SE	Overall Mediation %
VS. CANADIAN-BORN WHITE				
Canadian-born person of color				
Total effect	−0.171	***	0.043	
Direct effect	−0.099	*	0.044	
Mediating effect	−0.073	***	0.014	42.39
Foreign-born white				
Total effect	−0.005		0.023	
Direct effect	0.001		0.023	
Mediating effect	−0.007		0.011	125.48
Foreign-born person of color				
Total effect	−0.310	***	0.022	
Direct effect	−0.255	***	0.023	
Mediating effect	−0.055	***	0.013	17.8
Indigenous				
Total effect	−0.191	***	0.041	
Direct effect	−0.142	***	0.041	
Mediating effect	−0.049	***	0.011	25.57

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

The results in **Table 2** show that perceived discrimination is the primary cause of the gap in generalized trust between Canadian-born people of color and Canadian-born whites (discrimination explains 54.6 % of the gap). The total effect or gap between these groups is −0.317, a gap that becomes much smaller once the mediating effect of perceived discrimination −0.173 is taken into account—or, as column four shows-almost 54.6% of the effect (e.g., partial mediation). This particular mediating effect operates primarily through ethnic discrimination (42%) and to a lesser extent through racial and any discrimination (about 28%, respectively). In contrast, the results show that perceived discrimination does not mediate the gap in trust between foreign-born and Canadian-born whites (a gap that favors foreign-born whites). The fact that the overall percentage explained by discrimination is negative indicates that, if anything, discrimination is suppressing other factors. For foreign-born people of color as well as for Indigenous people the pattern is similar to Canadian-born people of color. There is lower generalized trust and there is partial mediation of the gap via perceived discrimination. In this instance, discrimination explains 38 and 48% of the gap, respectively.

Table 3 provides the results of the analysis of the OLS regression analysis of trust in specific others. The total effects show a similar pattern to generalized trust. There is a negative gap in trust between Canadian-born people of color, foreign-born people of color and Indigenous people indicating that the members of the former groups have lower trust on average than Canadian-born whites (−0.171, −0.310, and −0.191, respectively). Perceived discrimination partially mediates these gaps, and, as with generalized trust, the group most explained by discrimination is Canadian-born people of color (42%).

Table 4 provides the results of the analysis of the OLS regression analysis of political trust. For Canadian-born people of color it appears that there is very little overall gap in political trust with Canadian-born whites. However because the direct effect is positive (0.075) and the mediating effect via discrimination is negative (−0.108) this is a case of competitive mediation, that is, a pattern where the mediated and direct effect are approximately the same size but operate in different directions (see Zhao et al., 2010). This also explains why the overall mediation percentage is so large. There is no mediating effect of discrimination for foreign-born whites but it does depress the political trust of foreign-born-persons of color (−0.081). Importantly, is that the total effect is positive for both foreign-born groups indicating that political trust is higher than that of the Canadian-born (see also Bilodeau and White, 2016). Finally political trust is significantly lower for Indigenous people (−0.163) and about half of this effect is mediated via discrimination.

Perceived discrimination mediates the ethnic gap in trust. We also sought to consider whether this relationship was reflective of the effects of race, nativity, and/or Indigeneity. Discrimination plays a greater mediating role between nativity and trust for immigrants who are also people of color. This difference occurs because people of color, irrespective of whether they were born in Canada or not, and Indigenous peoples report higher rates of discrimination than do either Canadian or foreign-born whites.

Immigrants have lower generalized trust and lower trust in specific others because of the discrimination they experience as racialized minorities rather than because they are immigrants *per se* (H3). In the case of generalized trust and trust in specific others the analysis of the 2013 Canadian General Social Survey shows that there is a mediating effect of discrimination on trust based on race but not immigrant status.

TABLE 4 | KHB mediation analyses of extent to which discrimination mediates effect of nativity status on political trust.

	Estimate		Robust SE	Overall Mediation %
VS. CANADIAN-BORN WHITE				
Canadian-born person of color				
Total effect	−0.033		0.047	
Direct effect	0.075		0.048	
Mediating effect	−0.108	***	0.021	329.64
Foreign-born white				
Total effect	0.191	***	0.022	
Direct effect	0.199	***	0.022	
Mediating effect	−0.008		0.018	−4.14
Foreign-born person of color				
Total effect	0.440	***	0.024	
Direct effect	0.521	***	0.015	
Mediating effect	−0.081	***	0.020	−18.43
Indigenous				
Total effect	−0.163	***	0.050	
Direct effect	−0.084	*	0.050	
Mediating effect	−0.079	***	0.019	48.54

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

CONCLUSION

Tensions with Muslims over the Burkini in France, support for the exit of the U.K. from the European Union, and even the recent debates about foreign home ownership in Canada clearly illustrate the challenges facing immigrant minorities in many countries. Underlying these challenges is a crisis of trust—a widening trust gap between immigrant and racialized minorities and majority populations in institutions and authorities.

But noting that there is a crisis of trust related to minority groups does not explain why it occurs. Minority group status is merely a container or "black box" for other experiences and characteristics (Tilly, 2001; Reskin, 2003). There is a need to identify the mechanism, that is, the process or set of experiences, through which these status group markers connect to trust. This paper contributes to this endeavor by considering the extent to which discrimination is the mechanism that might account for group differences in trust. Although it is widely believed that ethnic and racial gaps in trust stems from discrimination this argument has yet to be directly tested.

The reason for this gap is that, in the case of immigration, trust, and discrimination the focus has been on the universal effect of discrimination across immigrant groups, or for a smaller number of studies, on whether the effect of discrimination might matter more for some groups than for others. The fact that some groups—including immigrants—experience a lot more discrimination than others is left implicit. In order to take into account differential rates of discrimination, that is that some groups experience more discrimination than others, there needs to be a shift from a moderating approach to a mediating approach. This entails a shift from explaining overall aggregate levels of trust to explaining group-based *gaps* in trust. The limited number of studies in the trust literature that have attempted to explain group-based gaps in trust across ethnic and immigrant groups (e.g., see De Vroome et al., 2013; Hwang, 2017) have yet to consider the direct experience of discrimination or to use any kind of formal test of mediation.

The results clearly show that race needs to be disentangled from nativity status. This finding is important, especially in a context of huge changes in global migration patterns and increased migration of non-whites in both the European and North American contexts. In the case of generalized trust and trust in specific others the analysis of the 2013 Canadian General Social Survey shows that there is a mediating effect of discrimination on trust based on race and Indigeneity but not immigrant status. The results clearly show that both race and Indigeneity are important and that these need to be disentangled from nativity status. This finding is important, especially in a context of huge changes in global migration patterns and increased migration of non-whites in both the European and North American contexts.

If discrimination matters for the native-born this means that, irrespective of whether immigrant minority groups "catch up" in terms of other factors that affect trust, there is unlikely to be a catching up effect in terms of the trust of the second generation. This may in part explain why, even though Canada is generally a high trust country, it has not been immune to trust challenges: Black Lives Matter has resonated with the experiences of many in Canadian cities, Francophones consistently trust less, and there is an Inquiry into Murdered and Missing Indigenous women. None of the first two are recent immigrant groups and the third is Indigenous.

These results do, however, depend on the type of trust. In the case of political trust, the results help to explain previous work showing that members of some minority groups have higher political trust than majority group members. We find that individuals who are foreign-born show no difference in political trust or actually trust more than Canadian-born whites. This occurs because of competitive mediation, that is, a pattern where the mediated and direct effect are approximately the same size but operate in different directions (see Zhao et al., 2010). That the direct effect of being foreign-born is positive is likely because institutions in Canada are generally trustworthy—at least on a global scale and hence minority groups often look to the state for protection (Maxwell, 2010). However, this relationship does not appear to exist for those who have directly experienced discrimination. A further issue is that, in the case of political trust, for Indigenous peoples political it is lower and this is exacerbated by the direct experience of discrimination. All too often this group is omitted from the nativity-immigrant comparison, and it must be acknowledged that the distinction of place of birth may be irrelevant to many Indigenous peoples (e.g., see Deer, 2011; Fenelon, 2016).

Finally, there are a number of avenues for further research that emerge from the work presented here. First, the mediation approach used in this paper could be use either to explain gaps in other outcomes that vary between immigrants and the native-born. This might include economic outcomes such as income, political outcomes such as voting and social outcomes such as well-being and happiness. Second, the mediation approach could be extended to considering the role of other types of mediators including, demographics, socio-economic resources, and social capital. Although discrimination was often the most important factor this was not across the board and, in most instances it is partial mediation ranging from about 20–50%. Thus, about 50% in the gap in trust still requires explanation. Third, is that although we have focused on the direct experience of discrimination we do not wish to suggest that discrimination does not also matter because of its relationship to other trust correlates. Take, for example, education which is a form of human capital that leads to higher trust[10]. In the case of immigrants and racialized minority groups, in addition to overt discrimination, there are also specific discriminatory and colonial institutional histories that lead to lower general levels of the very factors such as education that in turn predict overall levels of integration and well-being.

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All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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[10]The lower rates of education for Indigenous people in the Canadian context are, for example, themselves a legacy of more than a century of discrimination and genocide via the Indian Act and concomitant forced attendance at Indian Residential Schools.

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APPENDIX

Brief Overview of Ses, Social Capital, and Demographic Approaches

One line of argumentation is that variability in SES factors such as income and education across ethnic groups may be a factor in explaining trust differences across immigrant and native-born groups (Soroka et al., 2006). The experience of being one of the societal "have" groups means better treatment and hence, more social trust (Putnam, 2001; Delhey and Newton, 2005; Rothstein and Uslaner, 2005). That is, individuals with higher socio-economic status are more likely to benefit from existing social and political institutions and hence to view them more favorably (Newton, 2001; Uslaner and Brown, 2005; Wu and Wilkes, 2017). As a result, their trust in such organizations is higher. De Vroome's et al. (2013) study of the difference in social and political trust between native Dutch respondents and first and second generation Moroccan and Turkish immigrants shows that a significant proportion of the trust gap can be attributed to the lower socio-economic status of immigrant groups. In contrast, Zerfu et al's (2008) study of ethnicity and trust in eight African countries finds that class variables do not explain the effect of ethnicity on trust (see p 167).

A second line of argumentation is that the gap in trust may stem from group differences in social capital. Social capital (Putnam, 1993, 1995) refers to "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit." (1995:66). Putnam argues that "civic engagement and social connectedness" are especially important for the creation of social capital (ibid). Although there is some debate in the broader literature as to whether trust is part of, or an outcome of social capital, and well as whether social trust is a form of social capital that leads to institutional trust (Catterberg and Moreno, 2006), the general argument is that "a dense network of voluntary associations and citizens organizations help to sustain civil society and community relations in a way that generates trust and cooperation between citizens" (Newton, 2001). The De Vroome et al. (2013) study shows that social capital measures, such belonging to associations and feeling integrated in society account for some of the difference in trust between native Dutch respondents and first and second generation Moroccan and Turkish immigrants. Still, Maxwell (2010) considered whether the difference in political trust between Muslims and Christians in Britain was due to the fact that political trust is higher among the former group as a result of differing degrees of political efficacy. He found that while political efficacy does increase political trust for each group, the mean levels across these groups are very similar (ibid).

Finally, there has been some suggestion that the gap in trust may be the result of group demographic differences. Age has been shown to increase trust because older individuals, particularly those from a long "civic" generation are most likely to be civically and politically engaged and hence to trust more (Putnam, 1993; see also Uslaner, 2011). Marital status has also been found to correlate to trust either because the kind of people who get married also tend to have other kinds of social capital related to trust or because marriage itself increases trust in others (Helliwell and Putnam, 2004). Gender has also been found to correlate with both social and political trust. Women tend to have lower trust in generalized others (Mewes, 2014) but their political trust tends to be higher (Mishler and Rose, 2001; except see Catterberg and Moreno, 2006). While Soroka et al. (2006) consider the extent to which age, immigrant status and religion can explain differences in generalized and strategic trust between British/Northern European and Aboriginal, Quebec Francophones, Southern Europeans and Eastern Europeans.

Appendix 1 | Regression of ethno-racial categories on discrimination (with bootstrapped standard errors).

	Ethnic discrimination	Racial discrimination	Any discrimination
VS. CANADIAN-BORN WHITE			
Canadian-born person of color	2.302***	2.519***	1.033***
	–17.42	–19.11	–8.9
Foreign-born white	0.668***	–0.106	–0.0445
	–7.3	(–0.80)	(–0.76)
Foreign-born person of color	1.982***	2.116***	0.632***
	–27.34	–28.39	–11.65
Aboriginal/Indigenous	1.659***	1.622***	0.865***
	–14.12	–13.11	–8.94
Intercept	–2.868***	–3.040***	–0.972***
	(–59.00)	(–57.76)	(–41.08)
N	27,032	27,019	26,545

t statistics in parentheses.
**p < 0.05, **p < 0.01, ***p < 0.001*

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Pathways to Permanence: Legal Status Transitions as a Key Mechanism in Skilled Migrant Selection and Settlement

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Despite impassioned debates about immigration reform brewing in the U.S. government, researchers know remarkably little about how immigration policy shapes migration behavior. There is still much to learn about the composition of specific classes of admission, how long migrants stay in the United States, and the legal channels they follow to permanent residency or emigration. This paper takes a life course perspective on skilled migration to examine the micro-level processes and various pathways that lead to permanent settlement and emigration, and identifies legal status transitions as a key sorting mechanism in processes of immigrant selection. I find that migrants who successfully underwent a previous legal status transition were more likely to pursue permanent residence, but also saw a wider array of avenues to obtain a green card. The mismatch in some migrants' permanent settlement intentions and temporary legal status can lead to feelings of alienation and frustration in the immigration system and the U.S. labor market, driving some to emigrate or seek channels outside of the skilled migration program to procure a green card. The findings of this paper deepen our understanding of the processes that shape selection effects among immigrants and highlight the need for more robust and granular longitudinal data on legal status indicators.

Keywords: skilled migration, H-1B visa, temporary migration regimes, visa stress, labor market assimilation, immigration law

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INTRODUCTION

American politics has been gridlocked by debates over immigration reform for the better part of the last 40 years. Bitter arguments about undocumented migration, asylum and refugee seekers, "The Wall," and border enforcement essentially center around which immigrants the government wants to admit into the country. But despite the impassioned debates on Capitol Hill and at dinner tables across the country, there are still large empirical gaps in our understanding of who enters the country, and how. Researchers know remarkably little about how immigration policy shapes the composition of specific classes of admission, how long migrants stay in the United States, and the legal pathways they follow to permanent residency or emigration.

Taking a life-course perspective on skilled migration, this paper offers a micro-level examination into how skilled migrants navigate the U.S. immigration system and undergo legal status transitions. Drawing on 48 in-depth interviews with immigration lawyers and skilled migrants, I examine the conditions in which skilled migration becomes a pathway to permanent

settlement, and what factors contribute to dropping out of the skilled migration system. I find that depending on the strength of their social ties to the United States and their level of familiarity with U.S. institutions, migrants holding the same legal status have vastly different migration histories and trajectories, leading to widely different approaches to pursuing a green card or emigrating. Where migrants with strong attachments to the United States often opt out of the skilled migration system and obtain green cards through family reunification channels because they do not see skilled migration as a viable option for permanent settlement, those with weaker ties are often more tolerant of the arduous process of applying for an employer-sponsored green card, as they consider it better relative to their options back home. A third group opts out of the immigration process entirely, choosing to return home or move abroad in pursuit of more enticing career prospects.

Examining migration trajectories and legal status transitions across the migrant life course reveals important selection effects and illuminates the processes underlying them. This paper makes two contributions to the research on immigration, one empirical and one theoretical. Empirically, the life course perspective offers a fresh way of understanding pathways to permanent settlement and emigration and reveals the processes and dynamics underlying the transition points that lead to drop out and selection effects. I broaden the focus of skilled migration beyond a singular migratory event to a process that unfolds over the life-course and that is shaped by other life course events and expectations (Massey and España, 1987). By taking a long view of the migration journey and comparing different migration pathways, I find important differences in who comes to the United States, how they arrive, and how they settle or emigrate. This paper pays special attention to the policy context in which skilled migration occurs, and identifies legal status transitions as a key sorting mechanism. On a theoretical level, the findings of this paper raise important questions about the ongoing capacity of the state in regulating and controlling immigration policy.

The implications of this paper will also be of interest to policymakers interested in understanding the migration pathways and settlement patterns of immigrants. How migrants navigate and make sense of the migration process is crucial in designing effective immigration policies and visa classifications. Specifically, the recruitment and retention of skilled workers has important implications for the growth of dynamic and burgeoning sectors of the U.S. economy as skilled migrants become an increasing share of the immigrant population in the United States.

SKILLED MIGRATION AND LEGAL STATUS TRANSITIONS ACROSS THE LIFE-COURSE

Institutions and policies set the stage for skilled migration. Through visa programs like the H-1B work visa and the F-1 student visa, companies and universities function as gatekeepers for entry to the United States. These institutions work together to create migrant pathways. For example, migrants sometimes see higher education as a gateway to obtaining access to a country's labor market (Bound et al., 2015; Kerr et al., 2016; Thomas and Inkpen, 2017).

This paper develops a previously overlooked approach to the study of skilled migration, broadening the focus of skilled migration beyond a singular migratory event to a process that unfolds over the life-course (Bailey and Mulder, 2017). Life-course research emphasizes the linkages and transitions between life events and centers in on how these events fit together to shape life trajectories (Elder, 1985, 1994). This perspective sensitizes researchers to event dependence—the linkages between the incidence of one event and another—and status dependence—the relationship between a status and the incidence of an event (Bailey and Mulder, 2017). This framework lends itself well to research on migration. For example, migration is not a singular event, nor is it linear: migration is a self-perpetuating social process that unfolds over the life course (Massey and España, 1987). Migration scholars have incorporated the life-course perspective to explain key dynamics of migration behavior, from how migration can precipitate or delay marriage, to how past migrations increase the likelihood for future migrations, to how migration itself can function as a key life course event (Massey, 1987; Hutchinson and McNall, 1994; McNall et al., 1994; Swartz et al., 2003; Parrado, 2004; Clark, 2013; Kõu and Bailey, 2014; Ramos and Martín-Palomino, 2015; Sabharwal and Varma, 2016; Parke and Elder, 2019). While data on migration histories is complex and limited, the New Immigrant Survey falls into this tradition as a nationally representative longitudinal study of new legal immigrants and their children (Jasso, 2003; Jasso et al., 2005).

Grounded in the concepts of event dependence and status dependence, this paper examines legal status transitions as a key mechanism in the process of immigrant sorting and selection. Where most research on immigrant selection effects focuses on health or immigrant earnings, I focus on legal status transitions as key life course events that have important implications for shaping the composition of different migrant pools and classes of admission (Jasso et al., 2004; Chiswick et al., 2005; Akresh and Frank, 2008; Borjas, 2014). Even in seemingly random legal status processes, like the H-1B visa lottery, structural and cultural factors play an important role in who ultimately obtains a visa. Large corporations dominate the H-1B visa pool, and the recruitment and hiring processes of skilled foreign workers is shaped by academic institutional affiliation, class background, country of origin, and gender (Kapur, 2010; Chakravorty et al., 2016; Hira, 2016). The degree of incorporation into U.S. society and access to institutional and informational resources to navigate the immigration system also play an important role in who persists in obtaining a visa and who drops out, either because they do not have sufficient resources or because they see more attractive options abroad.

Taking a life course perspective on skilled migration also provides a fresh look at return migration and permanent settlement trajectories. Any life course event could be the precipitating event to initiate migratory return. The return migration decision is complex and extends beyond rational

choice theories proffered by economists—it is imbued with life course considerations for future career plans, family formation, and previous migration experience (Sabharwal and Varma, 2016)[1] Because of paltry data collected on emigration, return migration is a widely understudied but crucial dynamic of international migration. The lack of information on selection into return migration clouds our understanding of immigrant incorporation and might erroneously deflate measures of incorporation as the "best of the best" migrants emigrate and return home (Castles and Miller, 2014; Sanders, 2018). Further, the motivations for return migration are not well-understood, and a better empirical grasp on these dynamics could help policymakers design more effective policies to retain foreign skilled workers. This paper aims to address this gap by illuminating the factors at play in the return migration decision.

SKILLED MIGRATION AND LEGAL STATUS

Research on labor migration to the United States has primarily focused on low-skilled seasonal labor programs like the Bracero program and the H-2 visa (Calavita, 2010; Hernández-León and Sandóval Hernández, 2017). This body of work demonstrates the stress, uncertainty and exploitation associated with contingent, low-wage, low-skill jobs, and the ways it intersects with tenuous legal statuses (Menjivar and Abrego, 2012). Employers take advantage of temporary and undocumented workers' precarious legal status as they provide poor working conditions, pay less than minimum wage, and offer little room for advancement in unskilled jobs in construction and the service sector (Simon and DeLey, 1984; Bean and Stevens, 2003; De Genova, 2004; Hall and Greenman, 2014).

Research connecting immigrant labor and legal status primarily focuses on low-skilled workers *without* "full" legal status—that is, a status that is not fully formalized or legalized, such as an undocumented status, or a liminal or provisional status like Temporary Protected Status (Menjívar, 2006). Undocumented status can block migrants from employment and social mobility and can delay integration into the labor market; it can create feelings of anxiety and dislocation, and has been found to undermine immigrant health, with ripple effects across entire families, including U.S. children of undocumented parents (Bean and Stevens, 2003; Menjívar, 2006; Arbona et al., 2010; Menjivar and Abrego, 2012; Bloch, 2013; Hall and Greenman, 2014; Dreby, 2015; Gonzales, 2016; Asad and Clair, 2018). This body of research has illuminated the central role that legal status, or lackthereof, plays in shaping an immigrant's life. However, this literature has largely overlooked how legal status and legal status transitions impact the lives of legal migrants. In essence, the research on legal status has emphasized the effects of not having legal status, and has not yet fully delved into the complex world of the experiences of those *with* legal status[2]. The limited research in this area suggests that legal status matters a great deal. For example, legal migrants experience specific forms of anxiety and stress associated with their legal status categories, what Jasso (2011) calls "visa stress," and logistical concerns about providing legal status documentation can deter migrants from seeking healthcare (Hacker et al., 2011).

Further, the literature often conceptualizes legal status within a legal/undocumented binary (Massey et al., 2016; Sisk and Donato, 2016; Palter, 2017). Yet this simple contrast between legal and undocumented status does not recognize the range of legal statuses and the variation of experiences of different legal migrants (Asad, 2017). Studying legal immigrants as a homogenous category obscures important variation differences within legal admissions, which range from family visas, to work visas, to diversity visas. This variation in class of admission has considerable consequences: for example, legal migrants entering on a temporary visa earn less than legal migrants who enter on a permanent visa (Brownwell, 2010; Jasso, 2011; Mukhopadhyay and Oxborrow, 2012). In examining temporary legal migrants with high levels of human capital, this paper aims to expand the analytical scope of research on legal status and explore the key role of legal status transitions as a sorting mechanism across the life corse.

THE NEOLIBERAL ROLE OF THE STATE IN IMMIGRATION POLICY

One of the central questions in the literature on globalization is whether the nation-state continues to be relevant in a globalizing world. Do the totalizing forces of globalization have the power to override national arrangements? Does the swell of transnational and supranational economic, political and social forces undermine national sovereignty? The rise of skilled migration, and the increasingly entangled capacity of state and company, reveals the complex and paradoxical relationship between the state and global forces.

Conventional theories of the state and migration emphasize the key role of immigration policy in nation building (Zolberg, 2006; Khoo and Hugo, 2008; FitzGerald and Cook-Martín,

[1]This 2016 paper in *International Migration* sheds light onto many of the major dynamics involved in return migration for Indian migrants. Where the Sabharwal and Varma paper examines decision making at the intersection of economics and psychology, I focus on the broader social dynamics at play.

[2]The emphasis in previous work on unskilled and undocumented migrants makes it hard to separate the effects of a temporary legal status from the multitude of other challenges that vulnerable low-wage immigrant workers face. By focusing on a relatively privileged group of migrants with high levels of education working in white-collar professions, I aim to disentangle some of these effects and zero in on the role of a temporary legal status. This approach follows in the tradition of Gonzales's (2016) work, which shows how legal status can block incorporation for undocumented migrants with high levels of education. Further, many temporary migrants fall into racialized groups; Golash-Boza and Hondagneu-Sotelo (2013), Ngai (2004) and others have expertly illustrated the key role that race plays in the immigrant incorporation. While a systematic analysis of the racialized experience of skilled migration is beyond the scope of this paper, see (Banerjee, 2010)'s work for an in-depth exploration of how Indian migrants working in IT sectors experience race in the workplace. My goal here is not to create a false equivalence between H-1B migrants and other legal status groups facing many deeply concerning dimensions of legal violence, but rather to focus on how employers leverage temporary legal statuses as another mechanism of exploitation and control at all levels of education and occupation.

2014; Czaika and de Haas, 2016). In constructing policies of admission, states differentiate between "desirable" and "undesirable" immigrants, revealing implicit biases about who constitutes an in-group member along lines of race, national origin, class and criminal background (Bean, 2016; Flores and Schachter, 2018; Pryce, 2018). A longstanding debate in the scholarship on immigration policy questions the extent to which governments can control the flow of immigrants. Where Zolberg (2006) suggests that countries can build a "nation by design," essentially selecting the immigrants who make up the populace through immigration programs, Massey (2013) instead argues that immigration policies can produce unintended consequences and are in fact often a "fiasco."

To some extent, there are challenges to the nation state from above and below. An increase in the power and legitimacy of privatized and denationalized authorities at the grassroots and supranational level challenges state sovereignty and marks a partial destabilizing of the nation state. Global dynamics, like international flows of capital, commodities, services, people, and information, are producing a "rupture in the mosaic of [state] regimes" and are expanding authority beyond state jurisdiction (Sassen, 2007, p. 222). At the same time, the state is surrendering some of its own authority through deregulation and supranational trade and legal agreements. In this way, the state hosts and enables denationalized agendas and processes.

Thus, a paradox: it is precisely because of the "highly developed functionality of the nation-state" that it has the capacity to produce the non-state capabilities that signal denationalization (Taylor, 1994, p. 416). As a result, we see the "destabilizing of some aspects of state power" and reducing some of its authority through processes of deregulation, privatization, and the construction of supranational entities, but it is also responsible for producing this "series of new legalities," maintaining the state's central role (Sassen, 2007, p. 35). As Harvey notes, "while it would be erroneous to insist that traditional nation states have become irrelevant and powerless in relation to global capital, they certainly have become much more porous" (Harvey, 2006, p. 106).

Skilled migration policy in the United States is a key site to study the tension between state sovereignty and privatized non-state actors. Because skilled migration policy in the United States is predominantly employer-sponsored, the state and private companies work in tandem to regulate the entry and departure of skilled migrants. Visa programs like the H-1B and F-1 require institutional affiliation, which confers some bordering capacities to non-state actors like universities and companies. For example, because employment status and legal status are intertwined, companies have the capacity to terminate a migrant's legal status by terminating their employment. In another case, a student expelled from a university loses their student status and thus falls out of legal standing. As such, the bordering capacity traditionally reserved for the state has been partially transferred to the hands of private entities.

This paper thus illuminates some of the key dynamics of this debate. This interaction between global economic forces and state-level conditions offers a powerful analytic lens into how legal status and employment status can become intertwined, as in the case of the H-1B visa. By focusing on the relationship between immigration policy and private institutions like companies and universities, I aim to examine how shifting institutional arrangements are changing skilled immigration on a symbolic and functional level through changes in migration flows and the types of immigrants being recruited.

BACKGROUND AND CONTEXT THE H-1B VISA: THE CASE OF SKILLED INDIAN MIGRATION

The expansion of skills-based visa programs has contributed to the significant growth of skilled migration to the United States in the past three decades. The United States is the top receiver of skilled migrants, with three times more skilled migrants than Canada and four times as many as the United Kingdom (Connor and Ruiz, 2019). About a third of immigrants to the United States are college educated, and educational attainment is trending upward: almost half of migrants who arrived in the last 5 years held a college degree.

The H-1B visa is the largest skilled work program in the United States and has had the greatest impact on the composition and recruitment of skilled foreign workers (Alba and Foner, 2015; Chakravorty et al., 2016). The H-1B is an employment-based temporary visa lasting 6 years in length, and is tied to a specific employer that applies for and sponsors the visa. As such, the legal status of H-1B workers is directly tied to their employer.

Each year, 65,000 H-1B visas are issued to private employers for workers holding a Bachelor's degree, with an additional 20,000 visas allocated to applicants holding advanced degrees. When the number of applications exceeds this threshold of 65,000, all petitions submitted before the cap is reached are entered into a lottery system. In recent years, demand has significantly exceeded the number of visas available—in 2016, 236,000 petitions were filed, and just over 30 percent of applications were approved (USCIS, 2016). The H-1B visa authorizes work in a number of specialty occupations, with the biggest concentration of H-1B visa migrants working in tech fields like software design, computer programming, and information technology. The median income of H-1B migrants in 2015 was $75,000 (USCIS, 2016).

Indian citizens make up the vast majority of H-1B migrants. Seventy-two percent of H-1B recipients in 2015 were Indian citizens, with Chinese nationals coming in second at eight percent (USCIS, 2016). The H-1B is the primary driver of the significant increase in Indian migration since the 1990's, as the U.S. technology sector has expanded (Chakravorty et al., 2016). Each year, tens of thousands of Indian migrants come to the United States on H-1B work visas and F-1 student visas, leading to a surge of Indian migrants in STEM fields and the IT sector (Chakravorty et al., 2016).These migrants, mostly male, come from specific sending regions within India, most commonly southern areas like Bangalore, Andhra Pradesh, Tamil Nadu. An additional 30,000 migrants entered each year on F-1 student visas, some of whom eventually transferred to an H-1B visa (Lowell, 2005).

Pathways to the H-1B Visa: US Colleges vs. Employment Agencies

About a third of H-1B migrants move to the U.S. directly through work sponsorship on an H-1B visa (Hira, 2016). Others transition to the H-1B from other visas, such as student visas like the F-1 or J-1 visa (Chakravorty et al., 2016). It is not immediately clear using administrative data to determine whether an H-1B migrant intends to settle permanently. The H-1B visa is "dual intent"—the visa is temporary and "non-immigrant," but there is a pathway to permanent residency through the EB visa program[3,4]. Jasso's (2009) analysis of the New Immigrant Survey suggests that work visa holders are less likely to express settlement intentions in the United States compared to other immigrants, yet other studies show that H-1B visa holders adjust to Legal Permanent Residence status at higher rates than F-1 visa holders (Lowell, 2005; Batalova, 2006)[5]. Further, evidence suggests that H-1B visa holders are more likely to seek LPR status through employer-based green cards, while migrants who originally arrived on an F-1 student visa often obtain green cards through other means like family reunification or marriage, depending on which pathway is most advantageous and efficient (Jasso et al., 2000; Jasso, 2009). The average wait times for LPR status is about 4 years, though the queue can reach up to 10 years or longer for citizens hailing from countries with more applications than the annual nationality quota can absorb (Jasso et al., 2010; Kandel, 2018).

A robust migration industry of subcontracting and outsourcing companies mediates the recruitment process between workers and employers. Indian emigration laws require potential migrants to register for emigration clearance before leaving the country and match with a recruitment agent. On the receiving end, migrants cannot obtain visas like the H-1B in the United States without employer sponsorship, emphasizing the key role of employers as brokers in obtaining a skilled work visa. Subcontracting firms like Tata Consultancy Services and Infosys are playing an increasingly large role in matching skilled workers to employers, adding another institutional actor to the process of skilled employer recruitment in the United States (Hira, 2016). Of the top 10 H-1B employers in 2017, five were high-tech employment services headquartered in India (USCIS, 2018). There is some debate as to whether outsourcing companies like Infosys and Tata Consultancy are "gaming" the system by flooding it with visa applications (Hira, 2016). Subcontracting companies rarely sponsor H-1B workers for green cards—in 2013, for example, Infosys sponsored only seven green card applications, while it sponsored 6,269 H-1B applications (Hira, 2016).

All skilled migrants arriving from India are positively selected in terms of education and class background relative to the total Indian population. By definition, skilled migrants hold a college degree, which makes them highly selected in a country where only eight percent of the total population is college-educated, and this inequality is based in large part on class differences (AISHE, 2018). Additional selection effects exist between international students and direct recruits, however. International students often come from more elite class backgrounds, having attended the most elite private high schools in India. Because international students rarely qualify for U.S. financial aid, most come from families that are able to pay out of pocket for tuition at a U.S. university, which can often cost more than $50,000 annually. The selection effects in terms of skill and "quality" are less clear: admissions rates at the most selected Indian Institutes of Technology are often lower than the top-ranked U.S. universities. In some cases, two percent of applicants who have passed a series of challenging entrance exams are accepted to Indian schools, making Harvard and Yale's six percent acceptance rates look promising in comparison (Najar, 2011). Some have noted a trend of American universities becoming "safety schools" for those applicants just shy of the mark.

Legal status transitions produce additional selection effects among international students as they transition from an F-1 student visa and H-1B visa. The transition onto the H-1B from a student visa might positively select for migrants in this pool who always planned to settle in the United States. Further, those who undergo this legal status transition might also have more information, social support and resources to successfully navigate the immigration system than those who drop out.

I expect the settlement intentions of H-1B visa holders in this study to be largely shaped by their entry point to the U.S.: whether they first came as an international student, or were directly recruited by a company to work in the U.S. These experiences are vastly different, and give U.S. degree holders three advantages: first, they become an H-1B migrant having already lived in the U.S. for at least 2 years as a student, which has exposed them to American culture and social networks. Second, their time in the U.S. has also given them experience navigating the U.S. immigration system: having previously held an F-1 or J-1 student visa, they have a slight edge in understanding how to navigate the complexities of obtaining a visa. Third, they come from more elite class backgrounds. Those who enter the U.S. visa system directly from India may well have different experiences. They have the

[3]There are five categories of employer-sponsored green cards, which are ranked in order of preference according to a migrant's skill level and classification (USCIS, 2019). EB-1 visa holders include professors and multinational executives; EB-2 visas are for migrants with "exceptional abilities;" EB-3 holders include skilled workers and professionals for which qualified workers are not available in the United States. EB-4 visas, less common, are reserved for religious workers, translators and certain doctors, broadasters and military personnel; EB-5 visas are often called "investor" visas because they are reserved for migrants who invest a minimum of $500,000 into the U.S. economy and create jobs for U.S. workers. See Lowell (2001) or Jasso et al. (2010) for a more detailed description the EB visa categories, and North (2012) for a specific discussion of the EB-5 "investor" visa.

[4]Because of the sample design of this study, most interview respondents in this paper fall into the EB-3 category. To transition to an employer-sponsored work visa, H-1B visa holders need to obtain sponsorship from their employer. F-1 visa holders do not have a direct path to employer-sponsored LPR status, and must either first transition to an H-1B or other work visa, or obtain LPR status through family reunification channels (Jasso et al., 2010). As discussed in the findings section, respondents in this study who initially arrived on F-1 student visas often sought LPR status through means of family reunification.

[5]While these studies sensitize us to some of the patterns and dynamics at play in the transition from a temporary to permanent legal status, because of inadequate and incomplete administrative data and the specificity of U.S. immigration provisions and visa classifications, measures of observed settlement behavior through the adjustment of a temporary to a permanent status are often limited and inconclusive (Batalova, 2006). Other studies, such as analyses of the New Immigrant Survey, offer useful insights but are based on a survey of green card holders, rather than a representative sample of F-1 and H-1B visa holders.

advantage of not having to look for a job, since the recruiting agency has already navigated this process. But they face higher levels of adjustment once they have arrived, and they are likely to be particularly dependent on their employers.

DATA AND METHODS

This article is based on data collected from 48 semi-structured in-depth interviews: 33 with H-1B migrants from India, five with would-be H-1B migrants who were not able to obtain a visa, and 10 with immigration lawyers. All H-1B respondents in the sample work for private companies and held an H-1B visa in the past year. I supplement these data with interviews with immigration lawyers, who provided a more holistic view of the process and the common stumbling blocks that prevent some potential H-1B migrants from getting a visa. This study was carried out in accordance with the recommendations of the Institutional Review Board and the protocol was approved by the University of Pennsylvania IRB review board. Written informed consent was obtained by all interview participants.

Interview questions covered a range of topics related to the job search process, employment satisfaction, migrants' initial expectations and understandings of the U.S. immigration system, settlement intentions, and respondents' sense of belonging in the United States. This interview data offers an in-depth look at the ways skilled migrants make sense of and navigate the U.S. immigration system. The interview sample is not representative of the entire population of H-1B migrants in the United States, and it is not intended to generate systematic or generalizable observations about migration outcomes. Rather, the findings of this paper aim to illuminate new insights into the process of skilled migration, and to highlight meaningful dynamics that future researchers can investigate with representative samples. This paper sensitizes us to the factors at play at each transition point in the migration journey, which can help us better understand why some migrants stay and some migrants leave, and the potential implications this might have for selection effects.

Subjects were recruited through LinkedIn groups for H-1B migrants, as well as through alumni networks from public and private colleges and universities. From these diverse starting points, I supplemented my recruitment through snowball sampling. While this sample is limited in size and was not randomly selected, there were many distinct points of entry and thus initial respondents had a limited impact on the selection of subsequent interviewees. About three quarters of potential respondents contacted for this study agreed to participate; others said they were not interested in being interviewed or did not respond. Interviews, which were conducted between the spring and early fall of 2016, were conducted in person, and by Skype or telephone when the distance was too great to travel (for example, respondents living in India were contacted via Skype). Interviews lasted between 35 min and an hour and 42 min, with an average length of 53 min. Some respondents were contacted for follow-up interviews to clarify and further develop certain points. Interviews were transcribed and coded using NVivo. Names and identifying details have been modified to protect the identities of respondents.

Of the 33 H-1B migrants interviewed, 13 respondents in the sample were women and 20 were men. They ranged in age from 23 to 32 years old, with a median age of 28. Respondents varied in their time living in the United States, ranging from 3 to 8 years, with a median of 5 years living in the U.S. The median years on an H-1B visa was three, with a range of one to eight. The H-1B is a 3-year visa, with an option to renew it for an additional 3 years for a total of six, but once an applicant begins the green card process, their H-1B visa can be extended while the paperwork is being processed. The majority of respondents (N=28) are currently living in the U.S.; five held H-1B visas but returned to India before their visa expired to pursue employment opportunities back in India.

Twelve respondents were foreign educated, with degrees from Indian universities; 21 respondents earned a degree in the United States. Among these 21 respondents, 11 earned their undergraduate degree in the U.S.; 10 went to college in India and earned a Master's degree in the United States. I define any respondent who earned any degree in the United States (Bachelor's, Master's, or doctorate) as U.S.-educated, because of the weight U.S. credentials carry in the labor market[6]. As previously noted, place of education and class of admission are closely related categories, but not perfectly correlated. All of the respondents in this study who were directly recruited to the U.S. earned their Bachelor's degrees in India and had 2–5 years of work experience in India before transferring to the United States. In this sample, direct recruits tended to be older, because they already had a few years of work experience before moving to the United States.

FINDINGS: MIGRANT PATHWAYS AND UNCERTAIN FUTURES

This section is structured in three parts, to examine three key points in the process of skilled migration. First, I examine the factors leading to the initiation of migration, then I focus on the experience of being a skilled migrant, and finally explore variation in the settlement vs. emigration process.

Initiation of Migration

The initial motivations for migrating to the United States varied widely between international students and direct H-1B recruits. International students migrated to the United States with goals of developing specialized skills and gaining specific credentials, and saw a student visa as a pathway to permanent residency in the United States. In contrast, direct recruits were often assigned a position in the United States seemingly at random, and often accepted the post with little intention or desire to settle permanently.

[6]For respondents with mixed educational backgrounds, such as those who have a Bachelor's from an Indian University and an Master's from a U.S. university, these dynamics might play out slightly differently, but for the purposes of this paper, I explore the effects of all U.S. educational backgrounds together.

International students saw their time in the United States as an opportunity to develop skills and earn degrees from American universities. Sathvik, who is in his late 20's and earned his Master's degree in engineering at a public university on the East Coast, moved to the U.S. because of the specific educational opportunities it presented him. "I wanted to work in the field of computer architecture, and the universities in India don't have very good programs for getting a master's in that field," he said. "Getting that degree and gaining those skills" were his primary motivations for migrating. Ridhi, who is in her late 20's and works for a tech company in Austin, decided to get her Master's degree in the United States because she was attracted to the career opportunities in her specific field. "I came to the U.S. for my Master's because of my interests in machine learning and data science," she said. "There's not a lot of people doing interesting innovative work in that area in India, so it made more sense to get a background in that and gain work experience [here]." Both Sathvik and Ridhi eventually transitioned from an F-1 visa to an H-1B.

International students saw their studies in the United States as a gateway to permanent immigration. "Growing up, I always wanted to live in the United States. So when it came time to decide where to go to college, there was no question… this was my chance to move to America," said Nisha, who studied business at a university on the East Coast and now works for a technology start up company in New York. "I knew that I was moving away at 18, and I would probably never come back." Karan echoed similar expectations upon deciding to earn his Bachelor's degree at a university in California. "I remember buying my plane ticket for the beginning of college orientation. It was a one way ticket. And I remember thinking, this is it, this is my new home."

Direct recruits, in contrast, saw their migration as a temporary work post. Most had never indicated any interest or intention in moving to the United States before they were approached by their employer with a project overseas. "I didn't particularly want to move [to the U.S.], to be honest," said Roshan, who worked for a subcontracting company in Bangalore for 4 years before moving to the U.S. on an H-1B visa. "I wasn't so sure because I had no goals of moving to the U.S., relocating away from my family and my friends, nothing of that sort. But my boss called me in and told me they had a project for me in Seattle, so I said I would give it a shot."

Respondents who were directly recruited saw migration as an opportunity to develop new skills by moving to the United States on an H-1B. "The position they were offering me in the U.S. was actually a promotion from what I was doing before, so I figured I would be able to learn a lot by moving over here," said Myan, who worked for a software engineering company in India before transitioning to their U.S. team.

Navigating the H-1B System and the U.S. Labor Market

For respondents who initially migrated on an F-1 visa, the legal status transition from a student visa to an H-1B highlighted how their permanent settlement intentions conflicted with the randomized and temporary design of the H-1B program. They described the job search process as "stressful," "frustrating," and "limiting," due to the need to obtain an employer-sponsored visa, and the lack of guarantee that they would obtain a visa even if they did find an employer match. As Ridhi described her job search experience, she highlighted the constraints she faced, due to the employer-based nature of the visa. "I can't just go work for whatever company I want," said Ridhi. "I *have* to work for a company that will sponsor an H-1B."

Respondents often got far into the hiring process, only to be turned away once the conversation turned to work sponsorship. Jai, who got his Master's degree in engineering at a private university on the East Coast, spent the entirety of his 2-year Master's program searching for an employer that would sponsor him.

> [The job search] was a very frustrating and enlightening experience. I realized the opportunities for an international student were quite limited. Almost every interview I had, about 80 percent of the interviews I had, stopped once I told them I needed to get an H-1B sponsorship. They were interested in me as a candidate but the visa thing was a hurdle… There's always going to be some opportunities that are going to be closed off to me just because I'm a different nationality.

Mira, a 27-year-old manager at a design company who holds a U.S. degree, echoed Jai's frustrations.

> I got a lot of interviews, and got to the last round of the interview – they were ready to hire me before they realized that they couldn't because of the H-1B. They didn't sponsor foreigners. It was really frustrating – a waste of my time, going through all of those interviews for nothing.

The constraints of H-1B sponsorship shaped migrants' behavior in the job search. Perceptions of limited sponsorship stopped some respondents from applying to certain jobs. Shivani, a 28-year-old computer programmer who earned her Master's on the East Coast before moving to Seattle, limited her job application pool to jobs that she thought would sponsor her.

> Some jobs require permanent residency or citizenship. Even really niche jobs, really happy jobs. It's not always clear what the requirements are, but if I thought there were citizenship requirements, I felt like I can't even apply to those jobs, so I didn't. I thought about it every once in a while but not too much. They have their reasons but it would be nice if lower level positions were more open, and there was more I could have applied for.

Other respondents perceived certain sectors as more likely to sponsor H-1B's, and recalibrated their career aspirations to obtain a visa. Rupi, 29, works at a software company in Seattle and earned her Bachelor's degree on the East Coast, where she was the editor of her college newspaper. She wanted to pursue a career in journalism, but "newspapers don't sponsor people for H-1B's," she said. "So I…followed everyone else into tech." Jai also avoided certain sectors of the economy, perceiving them as closed off to foreign workers, even though he had specific skills in that area. He "always wanted to go into mechanical engineering,"

and earned his Master's degree in the field. But he was unable to find a job because "nobody would sponsor [him]. So [he] had to give up and get a job in tech instead."

These issues did not apply to those who came directly from India with an H-1B visa in hand. In fact, it was the specific skills match that brought them to the United States. "They picked me for the original project here because I was the best guy in the company for it," said Nishant, who studied computer science in Bangalore before moving to New York. "I'd been working on systems analytics since I started [at the company], and that's what I studied in college too. So it made sense that they wanted me to come over here to work on it."

For students seeking work authorization, the uncertainty and frustration of the job search did not end once a company hires an H-1B worker and agrees to sponsor their visa. The employer then needs to obtain the H-1B through the random lottery process, which currently has about a one-in-three selection rate. By definition, every respondent in this sample "won" the H-1B lottery[7]. But the randomness and unpredictability of the lottery system was a common source of anxiety. "You sense a lack of control of your own destiny," said Jai. "You're just waiting and waiting."

Respondents who transitioned from a student visa to a work visa described the lottery process as acutely stressful. Many worried about falling out of status and needing to leave the country if their application was not selected. "I was really unsure what was going to happen while I was waiting for the H-1B," said Aditi, who studied finance in the United States. "I wasn't sure if my life was going to go on here or if I'd have to move home. When my H-1B got approved I let out a huge sigh of relief. It's a huge weight off your shoulders. You just never know if something's going to go wrong."

Some respondents were not selected in the randomized lottery process and decided to move home, rather than pursue legal status through other channels. For Sameer, the complexities and uncertainty of the migration system pushed him away. "I gave up on living in America after my H-1B was denied," said Sameer, who went to college in California before moving back to Mumbai. "Too much of a headache, too much paperwork to stay. I did everything right, I went to a good school, I got the right job, and then I was just randomly rejected. It's better to be home, anyway."

Direct recruits went through the same lottery process, but did not express the same feelings of anxiety and stress. Applying from their country of origin, they only commit to moving to the United States once the H-1B has been secured—they are not faced with the threat of removal from their country of residence if the H-1B application is not selected. As Mohit, who holds a Bachelor's degree in computer engineering from an Indian university, noted, "I applied for my H-1B visa from [India]… I didn't get it, so I had to wait for a year, and then I applied again in 2010. And then I got it. That was it. It wasn't a huge deal."

Once respondents obtained their visas, their frustrations shifted from the uncertainty around winning the lottery to the rigidity and constraints of the visa. Despite the H-1B Portability Act of 2000, which allows H-1B employees to transfer their visa to a new employer sponsor, many respondents said they felt tied to their employer. Both student migrants and direct recruits voiced a sense of powerlessness to move between jobs because they saw their visas as tied directly to their employer, and felt they lacked negotiating power. Direct recruits in the sample also experienced constraints in their job mobility because of smaller professional networks in the United States, a devalorization of their degrees, and occasional threats from their employers.

When Ridhi, who first arrived as an international student, became frustrated with her manager's "unreasonable expectations" and "bad leadership style," she said she felt "trapped" and unable to quit, because she believed she would have to leave the country if she did so.

> I can't just get up and quit if work gets frustrating. I knew a couple of people that I worked with—they just up and quit. They just didn't show up the next morning. But I can't do that, because I would have to go back home and pretty much put my life on hold. Leaving the company would mean leaving the country.

Others echoed this frustration about their entwined legal status and employment status. "I can't be jobless in the U.S… If I'm not working, I can't be in the country," said Vikram, who earned his Bachelor's degree on the West Coast and works as a tech consultant.

Ridhi also worried about losing her job and the implications it would have for her legal status.

> You live in fear of a bad performance review. The way the H-1B works is that if you do get fired, then you have to leave that very day. That was not a position I wanted to be in. It's definitely a cause for worry. It's pretty stressful.

Other H-1B migrants who first arrived as international students felt that the visa constrained their ability to look for job opportunities with new employers. They felt nervous about losing their current job if their employer found out that they were exploring other options, which would result in falling out of status. Mira has been working at the same company since she graduated from college on the East Coast four years ago. She said she would like to explore opportunities elsewhere but is nervous about doing so because of the risks it poses to her employment.

> I don't feel like I can switch employers. It's tricky, there's too much risk. I don't want them to know I'm looking somewhere else, because then I could end up with no job at all… they could fire me.

Even those who found a new job often thought twice before leaving their employer, because they were anxious about the transfer of paperwork, and the potential challenges that could arise from transferring their visa. Varad, who went to college in

[7]I interviewed five additional respondents who were not approved for the H-1B. For analytical purposes, they are not included in this sample, but most emphasized high levels of anxiety while they waited for the H-1B lottery results, which they sometimes applied to multiple years in a row. Some enrolled in master's programs to maintain legal status; others moved home for a year with the intention of applying again; others got married to pursue legal status through other channels.

the United States and transferred his H-1B to a new employer last year, noted that this transition was nerve-wracking. "When I was changing jobs, I had this thing in the back of my mind of what's going to happen to me if something got wrong with my visa transfer or something? It was a pretty big risk." Because H-1B migrants feel tied to an employer, they see their ability to negotiate and leverage competing offers in the U.S. labor market as conscribed. Varad said this imbalance frustrates him[8].

> I don't have any negotiating power, because I'm at the will of the company. I can't leverage other offers to get a promotion, or to get them to increase my salary. If I were a permanent resident, I could shop around, test the waters. But I can't, I have no leverage with my employer. I need them more than they need me.

Indian-educated respondents voiced similar frustrations. Amit, who has a Bachelor's degree in software engineering from India, has worked as a subcontracting consultant for same oil company in Houston since he moved to the United States on an H-1B 4 years ago. He feels that his visa makes it "almost impossible" to switch employers. "It's a big stinking pile of mess.… You're basically trapped. I was disappointed… you start regretting… why would I move here in the first place?"

For some H-1B direct recruits, company practices created additional barriers to job mobility. When they did manage to find a new job, some faced active resistance and threats from employers. Employers threatened to withhold work authorization paperwork or asked workers to pay exit fees when workers informed them of their resignation. When Roshan gave his 2 weeks notice at his subcontracting company, "they weren't too happy about it… I had trouble getting my paperwork transferred… it took a while, it was pretty stressful." When Satya, who moved to the United States with an Indian-based subcontracting company, told his first employer that he was leaving, his employer asked him to pay an exit fee and delayed his paperwork transfer for 2 years[9].

> My contracting company asked me for $10,000… to give my papers back. [They] said you're not allowed to leave the company... I didn't pay them… it took two years to get my papers. It's an unwritten rule. Most of the contracting companies do that… they ask you for a lot of money or they hold the papers… three of my friends never got their papers.

Direct recruits were further constrained in seeking new jobs because of their smaller professional networks in the United States. While some had friends and family in the United States, many described their professional networks as rooted to their current workplace. This made it challenging for some like Mohit to find opportunities elsewhere. "It would be nice to work somewhere else, but I don't really know where to start… who to ask. Most of the people I know here are from work, so I can't really talk to them about it," he said. He eventually used LinkedIn to expand his professional network but has been unable to find a new job and is still working for his original employer.

In contrast, respondents who studied in the United States described much larger networks that provided support and information about jobs across the country, even if they felt constrained in their job mobility in other ways. "A ton of my friends from my Master's program stayed in the U.S.," said Abhinav, who studied engineering on the East Coast. "We don't see each other much, because they live all over the country, but we have group chats and I call them when I want to complain about work… A few of them work with me, for the same company… we helped each other get jobs."

International student respondents often oriented their reference group to native-born peers and expressed high levels of frustration with the constrained job mobility on the H-1B. Amala, for example, said that she gets frustrated when she talks to her native-born friends, who she met during her Bachelor's studies in the United States, about their career prospects. "There's just so much more for me to think about before I make a career move, [my American friends] don't even realize it," she said. "I could be in serious trouble if I lost my job… because of my visa. I don't think it's fair really. We all went to college together, my GPA is higher than theirs… but because I'm on an H-1B, none of that matters… it's really annoying." Mira echoed similar frustrations about her native-born friends' job search, which she perceived as much "easier" than her own. "It was so hard, so time consuming, so exhausting for me to find a job… because of my visa needs. My friends had no idea how good they had it. They didn't need to jump through these H-1B hoops."

Similarly, Rupi made sense of her job mobility experiences in reference to her native-born peers. She describes the disparities as frustrating and unfair. "Nobody likes looking for jobs, I know that," said Rupi. "I think it makes it an uneven playing field, people who don't have to worry about their visas. Americans are more confident, they have a better chance of… getting the [job]." Vikram echoed these sentiments. "American are always going to have something I can't have: peace of mind."

Though some direct recruits faced threats from their employer and stringent working conditions, they still expressed relatively high levels of satisfaction. Maintaining life in India as their point of reference, they compared their work experience in the United States to their work experience back home. Myan said that he was pleasantly surprised by the work-life balance at his current job as a computer programmer in Ohio. After graduating with a Bachelor's degree from a top university in India, he was working in Mangalore for a software engineering company, and was hesitant to move to the United States because his father had chronic health issues. But once he transferred to the United States through his company, he realized that things were "better here… you can have a really good work-life balance here. The weekends are completely your own. When I was working in India, I had to go work on the weekends and

[8]There might be some benefits to staying at a single company for an extended period of time — workers can be rewarded with mentorship and promotions. This model mirrors traditional career structures where workers advance up an internal career ladder (Kalleberg and Sorensen, 1979). However, the overarching career mobility structure in the tech industry is to "job hop," to advance through diagonal moves between different companies to gain experience and increase earnings (Fallick et al., 2006; Freedman, 2008).

[9]Work certification paperwork is essential in applying for a green card, so withholding work experience papers would render an H-1B migrant unable to permanently settle in the United States on an employer-sponsored green card.

work late into the night... It's not really comfortable for any human being." Though he is still on-call one Saturday a month, Myan says the work conditions are better now that he is in the United States.

Roshan, who also moved directly on an H-1B visa, echoed these feelings. "One thing I like about living here is just in terms of work-life balance," he said as he described his work at a consulting firm in New York. "It's a lot better in the U.S. In India, the work hours are a lot longer, commutes are longer, so work-life balance suffers a lot." Even Satya, who described his first employer as "authoritarian," said that he was happier with his lifestyle in the U.S than he was back home. "There were 11 of us sharing a two-bedroom apartment for almost a year [in India]. It was super crazy – no bathroom time, that kind of thing. Now I live in… an apartment with lots of space. That's what guided me …when things were tough. Whatever I can't do in India, here I can do it."

Respondents' reference groups also influenced their settlement intentions. For student visa migrants, the desire to settle permanently in the United States that initiated their migration was deepened by their tight social ties to U.S. citizens and people with permanent status in the United States. "When we were graduating, everyone was staying here, so I figured I would stay here too," said Vikram.

The degree of acculturation, the density of social networks in the United States, and intensity of permanent settlement intention were powerful forces contributing to feelings of anxiety and alienation among respondents. Despite having the deepest ties to life in the United States, respondents who wanted to settle permanently felt the least secure and most alienated by the temporary nature of the H-1B visa. They felt stressed about the uncertainty of the 6-year limit, and often expressed resentment about the constraints and insecurity of their legal status. These feelings were most acute among those who felt they had the most to lose—migrants who planned to settle permanently and felt rooted in the United States. Respondents with permanent settlement intentions, mostly international students-turned skilled migrants, expressed feelings of liminality that were in tension with their feelings of belonging and permanence in the United States. Those who planned to emigrate, mostly direct recruits, also expressed feelings of liminality, yet these feelings resonated with their temporary sense of migration and ultimate plans to return home. For respondents who planned to settle permanently in the United States, entwined employment and immigration statuses were a source of anxiety; for those who planned to leave, the entwined statuses were a source of frustration and a reason to emigrate. Dev, who earned his JD in the United States and is in the process of applying for a green card through his employer, noted the tension between his feelings of belonging and his feelings of impermanence.

> We're getting into that green card picture right now. It really did feel like a massive, massive relief. To an astonishing degree. I just realized, wow I've really been carrying a lot of background stress about this for a while. I feel like this place is totally my home… I love it… so it's almost weird that there's this fundamental…legal impediment to that really being an accurate description of things.

Mira also described feelings of belonging in the United States, and concern that a change in her visa status could disrupt her plans to stay.

> Why would I leave? My life is here. My work, my friends, my boyfriend… they're here. I've spent my entire adult life in this country, this is the only place I've ever lived on my own… I didn't grow up here, but all of the important things in my life have happened here… I feel American, but my passport is Indian... there's always that worry that something could change and I would have to leave.

Migrants who saw their migration as temporary, mostly direct recruits, also expressed a sense of liminality due to the intersecting employment and legal status, but the temporary nature of the visa resonated with their temporary plans. Alok, who holds an Indian degree and works in computer programming, describes Ridhi's "worst-case scenario" of losing his job and needing to leave the country in lighter terms. "I actually lost my job at one point, and had to go back home for a while to figure out my next move, because I couldn't be in the U.S. It wasn't legal. So I had to leave the U.S. and come back with a new stamp... that was about it. It was kind of annoying, but I was going to move home eventually, so it didn't really matter." He describes this experience as an annoyance, rather than a "major life disruption," as Ridhi did.

Respondents who did not intend to settle permanently engaged in short-term decision making, which reinforced their likelihood to move home. This sense of liminality rooted in their legal and employment status lead migrants to delay basic settlement behavior. "I waited two years to buy furniture for my apartment because I wasn't sure how long I would be here… if I would have any trouble with the H1," said Jai. Myan, a direct H-1B recruit, expressed a similar logic in explaining why he rents his apartment month to month. "I'm not going to be here forever… and you never know if something's going to happen with your visa… I didn't even sign a one-year lease, what if I have to leave in the middle of it?"

The Settlement/Emigration Decision: Opting Out of the Skilled Migration System

Many respondents ultimately opted out of the skilled migration system, either by returning home to India, or finding other pathways to permanent residence in the United States. Only a small portion of respondents indicated plans to pursue an employer-sponsored green card, mostly direct recruits without career prospects back home or strong social ties to the United States. Where many direct recruits opted out of the system entirely and moved home to pursue career opportunities there, many student visa migrants found alternative pathways to obtaining permanent residence through family reunification programs, either getting sponsored by a family member living in the United States or marrying a U.S. citizen to get a green card.

Some respondents decided to move back to their country of origin before their H-1B expired, frustrated by the employment restrictions imposed by the visa. Parth went to college in

India and moved back to his hometown of New Delhi after working in the United States for 4 years because he wanted to start his own company, which is not authorized on the H-1B visa.

> I want to travel and I want time to do my own thing, to work on my own projects. I couldn't really do that in the U.S. on my [H-1B]. If I could have stayed on in the US and done my own thing there and not had a job for a while I would have considered that. But that was not an option.

For both Parth and Alok, who also moved back to his hometown of Delhi, the employment possibilities in India outweighed the restrictions of staying in the United States on an H-1B visa. Alok was excited about the flexibility of career options available to him at home.

> I wanted to go back and recalibrate what things were on the ground were like in India, professionally, in terms of work culture and opportunities and stuff. I was trying to figure out types of opportunities, what I could be doing in India. I don't have the restrictions I had in the U.S., because I'm a citizen here. That was a nice change.

Parth similarly saw new opportunities at home.

> Work is definitely way more exciting over here. There's so much opportunity to do your own thing. That's the really rewarding part of it. That's why I moved back, I wanted to have my own business. That was definitely a goal.

For respondents who did want to stay in the United States, they often came up against the complexities of the green card process. Where student visa migrants found alternative pathways to green cards, direct recruits cited the complicated nature of the employer-sponsored green card as a key reason for emigration. Like the H-1B, the employer-sponsored green card is granted at the discretion of the employer, and some companies rarely sponsor workers. Myan, a direct recruit, said his subcontracting company rarely sponsored workers for a green card, and so he planned to move home when his H-1B expired. "I haven't heard of anyone at my company getting sponsored for a green card. It's just not something they do. Most people [at my company] don't even stay the full six years, we kind of come and go. They want to get fresh talent." The problems Satya described with his paperwork transfer also contribute to the small number of green cards conferred by outsourcing companies.

Some respondents did work for employers willing to sponsor their green card, but the duration of the green card process was a deterrent. Once the requisite 2-year processing period is over, a worker does not automatically obtain a green card. They then receive a priority date, which adds them to the queue of prospective immigrants in their country of origin—it could take up to 10 years for an Indian national to officially apply for the green card. Amit cited the long wait time and the uncertainty related to it, as the primary reason for not pursuing permanent residence in the United States.

> No, I'm not going to apply for a green card. That would sound good, but given the wait time, I'm really discouraged. The number of years that it takes for a green card to be processed is honestly outrageous. [With] all of the insecurities of my job and everything else…honestly, it's like a sword hanging on top of your head.

Frustrations with the migration process are not the only factor at play in the emigration decision—personal preferences for life in India and living closer to family also contributed to respondents' emigration decision. Some always planned to move home and saw working in the United States as an opportunity to gain skills while paying off student loans incurred while gaining United States degrees. But for this group of migrants in high demand on the global labor market, it is important to understand how the visas that enable them to work here might play a role in shaping their desire to leave.

While most migrants in this study had not finished the 6 years of their H-1B visa, many who did plan on settling permanently in the United States had begun the process of making alternative arrangements for permanent residency, mostly through family reunification programs. Some planned to get married to obtain a green card, while others sought sponsorship through a sibling or cousin.

Nisha, who expressed a strong desire to become a U.S. permanent resident, said that she and her long-time boyfriend, a U.S. citizen, recently got engaged. "I'm getting close to the end of my H-1B and I realized it was going to be a huge headache to get a green card through work. I didn't want to spend ten years working at the same company, waiting to see what would happen. I just wanted to start my life here already. So [my boyfriend] and I decided the best thing to do would be to get married. It probably would have happened eventually anyway, but this definitely sped up the timeline." Abhinav also planned to obtain a green card through a family member. "I really like living here, and I don't want to leave. This feels like my home now. But my visa's going to expire eventually, so I'm looking into alternative arrangements. I have a cousin who's American, and we're trying to figure out if he can sponsor me. If that doesn't work out, I'm not sure what I'll do," he said.

Student migrants who planned to settle permanently expressed a familiarity and comfort with undergoing legal status transitions, having already successfully moved from an F-1 visa to an H-1B. Vikram said learning about the green card was much less intimidating after navigating the H-1B system. He knew where to get information, and described the process as less complex, relative to the H-1B. He planned to get a green card through family reunification channels rather than employer sponsorship, which he said sounded as complicated as the H-1B process. "I started looking into ways to get a green card a few years ago, just to know what my options were. Honestly, it's way better than the H-1B mess, I mean, if you try to get it through your job, that sounds like a nightmare, but I'm just going to apply through my cousins and it should be done in a year or so. No big deal."

In contrast, most respondents who did plan to pursue the path of employer-sponsored green cards had little prior experience with transitioning between legal statuses. Most had obtained

their H-1B through an employer as direct recruits and had less experience navigating the U.S. immigration system. Respondents also described a general confusion and lack of information and resources in navigating the process of obtaining an employer-sponsored green card. For respondents pursuing LPR status, most expressed an interest in obtaining "a green card," but did not differentiate between the various categories of green cards. Most interviewees were clear on the difference between green cards obtained through family reunification channels and employer-based green cards, but respondents were often surprised by details of the application process, like the long wait times, and were not familiar with the differences between the three primary employer-based green cards, EB-1, EB-2, and EB-3, which confer different levels of priority to applicants based on skill level (USCIS, 2019).

Satya, despite having many complications with paperwork transfers from a previous employer, decided to apply for a green card through his current employer, and they have begun to file the paperwork. He described the beginning of the application process as a steep learning curve, in which he had to do a lot of outside research on his own. "My company's sponsoring me, but they aren't explaining much about how the process works. I'm learning this as I go… I've been reading a lot of the online forums about the green card process, because I don't know how it works or what to expect." When asked which green card he was applying for, he said he had to check and paused the interview for a few minutes while he searched in his email before confirming that he was applying for an EB-3 visa

Because he maintained India as his reference group, he is more patient about the complicated wait times. "I don't mind waiting a long time for the green card. I have it pretty good, I like my job, and I think it's all going to work out. Even when my last employer wouldn't transfer my documents, I figured it out in the end… it's worth it for staying here."

DISCUSSION

Taking a life-course perspective on skilled migration, this paper illuminates the micro-level processes and various pathways that lead to permanent settlement and emigration, and identifies legal status transitions as a key sorting mechanism in immigrant selection. By tracing the different channels that migrants follow to obtain a skilled work visa, with an eye toward eventual permanent residency, I unpack the micro-level selection effects at play in the process of skilled migration. I examine whether a skilled migrant pursues a green card, and whether they pursue it through channels of skilled migration or family reunification. Taking a long view of the migration journey across multiple legal status transitions, this paper reveals new selection mechanisms not discussed in prior research.

This paper unpacks the specific factors that lead to selection out of the skilled migrant program in the transition from a student visa to a temporary work visa to an employer-sponsored green card. Migrants who successfully underwent a prior legal status transition were more likely to pursue permanent residence, but also saw a wider array of avenues to obtain a green card. Expanding on Jasso et al.'s (2005) notion of "visa stress," I find that the mismatch in some migrants' permanent settlement intentions and temporary legal status can lead to feelings of alienation and frustration in the immigration system and the U.S. labor market, driving some to seek channels outside of skilled migration to obtain a green card. Other migrants with weaker social ties and less institutional attachment to the U.S. felt less of a disconnect between their expectations and settlement opportunities, and thus were more willing to pursue employer-based green cards. A third group, with exciting job prospects at home or abroad, dropped out of the system entirely and decided to emigrate.

By focusing on the pathways in and out of permanence, the findings of this paper offer rich insights into the tensions and unintended consequences of immigration law. One example is the disconnect between the settlement intentions expressed among F-1 visa and H-1B visa migrants, and the provisions of U.S. immigration law. Many respondents in this study who arrived on an F-1 student visa expressed an interest in settling permanently in the United States, despite the fact that F-1 visa regulations mandate that applicants indicate non-immigrant intent on their visa applications and demonstrate an "intention to depart the United States upon completion of the course of study" (Batalova, 2006; U.S. Department of State, 2019). In contrast, migrants in this study who arrived on an H-1B visa often expressed an ambivalence about permanent settlement, even though the "dual intent" H-1B visa allows migrants to eventually apply for permanent residence (Jasso, 2010; Sahoo et al., 2010). The findings of this study are consistent with Jasso's (2009) findings that visa holders are less likely to express settlement intentions than other immigrants, and with Jasso et al.'s (2010) finding that the primary pathway to permanence for migrants who arrived on F-1 visas is to obtain a green card through marriage to a U.S. citizen, though they challenge Lowell (2005) and Batalova's (2006) findings that about half of H-1B migrants eventually apply for LPR status.

The disconnect between stated settlement intentions, observed settlement behavior and the provisions of U.S. immigration law is a rich site for further study and has both social scientific and policy implications. It illuminates the influence and limitations of immigration policy in regulating migration flows and the driving forces leading to unintended consequences in immigration policies (Massey, 2013). Our understanding of these unintended consequences would be enriched by further study of the gap between immigrant intentions and behavior among F-1 and H-1B migrants, which could indicate whether migrants are using certain visa pathways with intentions that conflict with the provisions of the visa. Further, this disconnect reveals the drop-out points in the skilled migration process, leading to selection of certain characteristics among skilled migrants. Immigration researchers will see the importance of understanding how and why migrants drop out of legal systems to develop stronger models of macro-level selection effects and better understand the unintended consequences of immigration policies.

The findings of this paper also highlight the need for more robust and granular longitudinal data on legal status[10]. Because of inadequate and incomplete administrative data, current measures of observed settlement behavior through adjustment of a temporary to a permanent status are often limited and inconclusive (Batalova, 2006). More robust data on legal status would allow for systematic comparisons within and between legal status categories and for the construction of migration history data to examine legal status trajectories, pathways and drop-out patterns. These findings emphasize the importance of specificity in studying visa categories and in identifying variation in the migration histories and ascribed characteristics of migrants within a single visa group.

Policymakers interested in understanding the composition and outcomes of various classes of admission to the United States will benefit from the findings of this paper as well. Who is arriving, and under what visa? How long do they stay? How does visa policy design play out on the ground? As Massey (2013) notes, immigration policies often do not produce the desired results, and in many cases can produce unintended consequences. The feelings of liminality expressed by some respondents suggests that a "probationary" admission system based on temporary visas may ultimately delay or redirect final integration outcomes. Further, the reasons that some migrants in this study cited for emigrating suggest that current policies are losing out on opportunities to recruit and retain migrants who develop skills in the United States. In addition, the complexities of legal status transitions, and the specific opportunities and constraints enabled by various visa categories, should be more clearly and readily communicated to migrants.

Finally, this paper weighs in on a long-standing theoretical debate about the power and efficacy of the state in regulating immigration policy. The U.S. government is experiencing a partial undoing of its bordering capacity. This paper illustrates the ways that various migrant groups navigate migration systems regardless of policy design. At the same time, the U.S. government is engaging in neoliberal immigration policies which place increasing power in the hands of private corporations, who wield control over immigrants' legal statuses through their employment status. And this power is concentrated in the hands of fewer and fewer companies, as a shrinking pool of corporations dominate the H-1B migration system (USCIS, 2018).

[10]Recent debates about the inclusion of a "citizenship question" on the 2020 U.S. Census speak directly to this issue. This question has been weaponized as an anti-immigrant attempt at depressing Census participation in immigrant communities, which could result in less Congressional representation in those areas. While previous studies suggest that the inclusion of legal status questions does not necessarily lead to lower response rates (Bachmeier et al., 2014), the heightened political climate in which this question is being introduced raises serious concerns about the intent and application of this question on the 2020 Census. Until impacted communities are more at ease that data on legal status collected by the Census Bureau will not be shared with other U.S. agencies like Immigration and Customs Enforcement, surveys on legal status should be conducted by independent organizations and administered in settings that emphasize data security and community trust. Further, more targeted surveys on legal status will allow for more granularity in the detail of questions about legal status across the life course.

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of the Institutional Review Board and the protocol was approved by the University of Pennsylvania IRB review board.

AUTHOR CONTRIBUTIONS

EJ contributed conception, design, data collection and analysis for the study, and wrote the manuscript.

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Changes in Self-Rated Health Right After Immigration: A Panel Study of Economic, Social, Cultural, and Emotional Explanations of Self-Rated Health Among Immigrants in the Netherlands

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Immigrants are often found to rate their health better than the native population does. It is, however, suggested that this healthy immigrant effect declines with an enduring length of stay. With Dutch panel data, we investigate which patterns in self-rated health can be found among immigrants shortly after their migration. We test to what extent economic, social, cultural and emotional explanations affect the changes that immigrants report in self-rated health. Based on a four-wave panel, our results support the immigrants' health decline hypothesis, since the self-rated health decreases in the first years after immigration to the Netherlands. The major change occurs between immigrants rating their health no longer as "very good," but as "good." Shortly after immigration, self-rated health is associated with being employed and a higher income. Hazardous work and physically heavy work decrease self-rated health. Notwithstanding these effects, social, cultural, and emotional explanations turn out to be stronger. A lack of Dutch friends, perceptions of discrimination, perceived cultural distance, and feelings of homesickness strongly affect self-rated health. Furthermore, in understanding changes in self-rated health, the effects of making contact with Dutch people and changes in the perception of discrimination are definitive. However, contact with Dutch people did not decrease and discrimination did not increase over time, making them ineligible as an explanation for overall health decrease. Only the small effect that first-borns have may count as a reason for decreased self-rated health, since many of the recent immigrants we followed started families in the first years after immigration. Our findings leave room for the coined "acculturation to an unhealthier lifestyle thesis," and we see promise in a stronger focus on the role of unmet expectations in the first years after immigration.

Keywords: recent immigrants, immigrant health, healthy immigrant effect, discrimination, homesickness

INTRODUCTION

It is a paradox that has been found over and again; notwithstanding immigrants' lower socio-economic position on arrival, they turn out to be healthier than the receiving population (John et al., 2012; Urquia et al., 2012). This Healthy Immigrant Effect is due to selection effects, i.e., healthier immigrants are more likely to migrate (Jasso et al., 2004; Wallace and Kulu, 2014; Riosmena et al., 2017). Predominantly, people who have energy and ambition are likely to migrate and are, therefore, in better health compared to the general population (see Antecol and Bedard, 2006; Singh Setia et al., 2011; Kennedy et al., 2015).

If immigrants are indeed a selection of healthy people (Farré, 2016; Riosmena et al., 2017), the question arises as to why it is often found that immigrant populations in general (including those living for an enduring period in the resident country), and especially those from non-Western origins, often rate their health as worse than the native population (see the systemic review from Nielsen and Krasnik, 2010; e.g., Solé-Auró and Crimmins, 2008; Wengler, 2011; Moullan and Jusot, 2014; Jatrana et al., 2018). It might be that very different groups who arrived in different periods with various socio-economic positions are compared (as given as a possible explanation by Jasso et al., 2004). Yet it might also be that health conditions deteriorate because of the migration experience, since many studies support a negative association between "length of stay" and health perceptions (Jasso et al., 2004). Mainly US and Canadian longitudinal research support this immigrant health decline hypothesis, with convergence to lower levels of health with enduring length of stay or over generations (McDonald and Kennedy, 2004; Newbold, 2005; Antecol and Bedard, 2006; Acevedo-Garcia et al., 2010; Goldman et al., 2014), although recent panel-studies from Lu et al. (2017) and Jatrana et al. (2018) refute a decline in reported health among (established) immigrants to the US and Australia, respectively, and report stability. A systematic review of studies in Canada states that, "The healthy immigrant effect is stronger for recent .... immigrants and vanishes among more established immigrants. However, it is not possible to determine if these *duration effects* reflect true convergence or overshoot because the majority of the studies were based on cross-sectional analyses." (Vang et al., 2015, p.1; Vang et al., 2017). In Europe as well, there is discussion on the association between length of stay and self-rated health, with many studies supporting a negative association (Huijts and Kraaykamp, 2012; Rechel et al., 2013; Vacková and Brabcová, 2015), whereas others even find that immigrants who have a shorter length of stay report lower levels of health (Leão et al., 2009). Additionally, here it is claimed that the field would benefit from studies following immigrants over time (De Valk and Fokkema, 2018; Jatrana et al., 2018).

In this article we study self-rated health of immigrants in the first years after immigration, in line with the recommendations from Jasso et al. (2004) to trace immigrants' acculturation trajectories from right after immigration. The importance of studying the health status of immigrants cannot be stressed enough. Not only is health crucial for obtaining an economically stable position for the growing immigrant populations, but it also is essential for the wellbeing of the children of immigrants, as well as for societies as a whole, since the costs of the health sector make up the major shares of government spending. By employing a four-wave panel, the better insight needed into the dynamics of health after immigration can be obtained (Rechel et al., 2013). We study changes in self-rated health among recent immigrants to the Netherlands from four different origin countries (excluding a country where mainly refugees migrated from), extending the literature on health dynamics after immigration to another country than the often-studied situation in the US, Canada or Australia (Kennedy et al., 2015). Most studies have applied a design to merely support or refute the immigrant health decline hypothesis; sometimes by conditionally testing on cohorts or relevant socio-structural characteristics. These studies show quite some variance in immigrant health decline depending on e.g., ethnic group and gender (Singh Setia et al., 2011; Urquia et al., 2012; Barbieri, 2016). These studies focus less on explanations of immigrant health decline (Jatrana et al., 2018). Following suggestions of Jasso et al. (2004) to integrate explanations of immigrant health decline from different domains, and Riosmena et al. (2017) and Kwak (2016, 2018) to get a more nuanced understanding of what contributes to changes in self-rated health, we seek explanations in immigrants' changes in the economic, social, and cultural domain. These domains have been suggested before to understand health differences (Venema et al., 1995; De Maio and Kemp, 2010; Nielsen and Krasnik, 2010), but were not applied simultaneously for understanding dynamics in self-rated health. When immigrants settle in a new country, the initial advantaged health position may diminish by the sometimes stressful economic (e.g., hardship in finding a job), social (e.g., lack of social contacts), and cultural (e.g., discrimination) experiences they have in their new country. Also, the emotional sphere may play a role (e.g., homesickness). If we do find support for a decline in self-rated health in the first years after immigration, we examine which of these explanations are most decisive in explaining the downward trend. We aim at four immigrant groups with rather different reasons for immigration and with different socio-economic positions in their receiving country: Bulgarian, Polish, Spanish and Turkish immigrants.

Bulgarian, Polish, Spanish, and Turkish Immigrants in the Netherlands

As with most of the Western-European countries, the Netherlands recent history of immigration is characterized by labor migration, family migration, migration from former colonies, and asylum migration. Higher levels of immigration took off in the 1960s, when the booming economy resulted in labor shortage, and workers were recruited first from southern Europe (including Spain) and later from Turkey and Morocco. Whereas, the majority of southern European immigrants returned in the 1970s to their country of origin, the majority of Turkish and Moroccan immigrants stayed in Europe. The family reunification that followed made these immigrant groups the largest in the Netherlands. Taking the first and second generation together, Dutch citizens with a Turkish background comprise 2.3% of population; also Dutch citizens with a Moroccan background comprise 2.3% of the Dutch population

(Statistics Netherlands, 2018). In 2017, almost a quarter of the Dutch population had an immigrant background; 11% of the population was registered as (first generation) immigrant and 12% as second generation (Statistics Netherlands, 2018). Immigrants from former Dutch colonies (Suriname, Dutch Antilles, Indonesia) take up a relevant share as well as refugees from Afghanistan, Iran, Iraq and Somalia, and more recently from Syria and Eritrea. The sharpest increase in immigrants in the last two decades came from Eastern Europeans. Due to enlargement of the European Union, Eastern Europeans obtained the right to freely move within the EU. In less than 10 years, the Polish immigrant community has become the sixth largest in the Netherlands. Also, immigration from countries like Bulgaria and Romania increased strongly. When in 2008 the international economic crisis hit Southern Europe hard, immigration from Spain and other Mediterranean countries also rose. The data in this study are from a panel study that started in 2013 and targeted newly arrived immigrants. Four groups with sizeable immigration figures in 2012 and 2013 were chosen: Polish, Bulgarian, Spanish and Turkish immigrants. No refugee group was included, since the number of refugees entering the country was small at the time. Studies on the selected immigrant populations show that Poles came almost solely for work reasons and almost all succeeded in finding jobs, albeit at lower levels than their educational credentials merit (Gijsberts and Lubbers, 2013). Bulgarian immigrants turned out to be more diverse; they came either for economic or study reasons. Moreover, among the Bulgarian immigrants there was a sizable Turkish Bulgarian minority and large variety in educational level (Engbersen et al., 2011). Spanish immigrants were mostly higher educated, searched for better job opportunities in the Netherlands and often found employment in ICT or universities (Gijsberts et al., 2016). Turkish immigrants were the only ones without the right of free movement to the Netherlands. By far, the majority of the Turkish immigrants came as family migrants, since they married a Dutch partner; a small share came to the Netherlands as student (Gijsberts and Lubbers, 2013).

EXPECTATIONS

Scholarly attention on immigrants' health decline suggests that immigrants may seem healthier at immigration but underreport health problems. One reason for this would be that immigrants are not diagnosed yet, since they under-utilize medical care in their new destination country. Both McDonald and Kennedy (2004) and Antecol and Bedard (2006) criticize this explanation, since it implies there is a serious increase in unknown health problems at the time of immigration. The origin countries in this study have advanced health care systems and it may be reasonable to expect that existing health problems would have been diagnosed earlier. Antecol and Bedard (2006) see more merit in acculturation explanations; the extent to which immigrants adopt the life-styles of the host-society. They convincingly show that an increase in BMI with enduring length of stay—as a result of adapting to the American lifestyle—is associated with worse subjective, as well as objective, health. Following the idea that the situation after immigration and changes in that situation are relevant for health assessment, we expect changes over time in self-rated health to be related to changes in the economic, social and cultural situation after immigration. All these aspects may influence homesickness, which we disentangle as emotional factor, which additionally may be a reason for changes in self-rated health. With the inclusion of these explanations simultaneously (Nielsen and Krasnik, 2010), we test a more comprehensive dynamic model and complement the theoretical models that mainly focus on assimilationist acculturation strategies to understand changes in immigrants' health (Abraído-Lanza et al., 2006; De Maio and Kemp, 2010; Acevedo-Garcia et al., 2012).

Economic Domain

Most studies show a positive association between socio-economic status and (immigrants') health or health perceptions (Reijneveld, 1998; Brussaard et al., 2001; Wiking et al., 2004; McDonough et al., 2010; Wengler, 2011; Huijts and Kraaykamp, 2012; Alcántara et al., 2014). In some studies, the socio-economic gradient in immigrants' health perceptions is explained by the larger social network that comes with higher socio-economic status (Fokkema and Naderi, 2013). In other work, explanations are sought in the means it provides to sustain contacts in the country of origin and to receive approval by meeting expectations to send remittances (Dito et al., 2017). Mostly, a more direct effect from socio-economic status is expected. Employment and a sufficient income provide stability and reduce uncertainty, whereas unemployment does the opposite and is found to be associated with lower self-rated health (Huijts and Kraaykamp, 2012). Immigrants often face difficulties to enter the labor market and to find jobs fitting their educational skills (Amuedo-Dorantes and De la Rica, 2007; Kogan, 2011); facing these barriers over an extended period may reduce self-rated health. However, immigrants are thought to improve their socio-economic position with enduring stay (Chiswick et al., 2005; Akresh, 2008; Lubbers and Gijsberts, 2016). This socio-economic integration perspective on length of stay does not offer an explanation for the immigrant health decline; to the contrast, rising labor market participation and increasing income with longer residence in the country should lead to be better self-rated health, not lower health rating after immigration as is found so often (Antecol and Bedard, 2006). Economic integration, as measured by labor market participation, may however disguise the uncertainty or unfavorable work conditions that immigrants often face (Akresh, 2008). Immigrants who experience unemployment spells, who work in temporary contracts, who work irregular hours, and those doing physically hard work and hazardous work are likely to report less health with a longer stay (Gotsens et al., 2015). With the flexibilization of the labor market, immigrants may have encountered such insecurities more often with enduring stay, possibly affecting their health in a negative way (Rellstab et al., 2016).

Social Domain

In the social domain, immigrant integration literature assumes that with a longer time of stay in the receiving country,

immigrants expand their social network (Martinovic et al., 2008). Reduction of loneliness, by way of obtaining social contacts, will positively affect self-rated health (Hawkley et al., 2003; Cacioppo et al., 2010; Fokkema and Naderi, 2013; Tegegne, 2018). Social support and/or social capital is theorized and found to be highly relevant for well-being (Arpino and de Valk, 2018), lowering loneliness (De Jong Gierveld et al., 2015), and increasing self-rated health (Finch and Vega, 2003; Riosmena et al., 2017). But again, the trend to better social integration with longer length of stay (Sand and Gruber, 2018) is unlikely to explain a decline in health. Similarly, it is often assessed that in the first years after immigration family reunion takes places, with partners (and children) joining the immigrant, or with new union formations (Massey, 1990). It is unlikely that this will reduce the immigrants' health perception. Immigrants, being often relatively young and starting families, will be more likely to give rise to newborns. From research on the role of children on happiness and life satisfaction it is suggested that a first child reduces these subjective assessments (Stanca, 2012; Pollmann-Schult, 2014), although studies on this association are not conclusive (Myrskylä and Margolis, 2014), and it is not tested on recent immigrants. If newborns reduce happiness, and happiness is associated to self-rated health, it may explain decreasing self-rated health.

Cultural Domain

Discrimination or acculturation stress is found to play a role in immigrants' health, with a lower health among immigrants who perceive discrimination of their origin group (Utsey et al., 2000; Finch and Vega, 2003; Mossakowski, 2003; Verkuyten, 2008; Safi, 2009; Abdulrahim et al., 2012; Huijts and Kraaykamp, 2012). Immigrants may be positively selected with favorable attitudes about their destination country before and just after immigration, they may develop a more realistic perception of the country of destination over time. Moreover, in the receiving country, they may perceive negativity toward immigrants in general and toward their country of origin in particular (McGinnity and Gijsberts, 2016). In Canada, De Maio and Kemp (2010) found that perceptions of discrimination are among the key explanations to understand deteriorating health assessment: immigrants who experienced discrimination were more likely to deteriorate in health; however, the study did not show whether a change in discrimination is associated with a change in health over time. Discrimination is thought to reduce people's feelings of confidence and acceptance, with consequences on happiness, self-rated health, and loneliness (Visser and El Fakiri, 2016). Immigrants may also become aware, or perceive stronger differences, between their country of origin culture and the receiving country's culture. A perceived larger cultural difference between origin and destination may also induce perceptions of non-belonging, uneasiness in the new environment, and loneliness (Klok et al., 2017), and may result in lower levels of happiness and consequently in lower self-rated health. Van Tilburg and Fokkema (2018) suggest that negative interpretations of social position are of key importance to understanding immigrants' well-being. We expect that over time, perceptions of discrimination and of cultural distance between the country of origin and destination increase, and that changes toward stronger perceptions of discrimination and more cultural distance are associated with lower self-rated health.

Emotional Domain

Another explanation that connects to the social domain, but also can be motivated by the other domains we disentangle, is that of homesickness (Tartakovsky, 2007). Homesickness is found to be associated with lower levels of self-rated health (Van Tilburg et al., 1999) and is seen as "mini-grief," that negatively affects well-being (Stroebe et al., 2002). Immigrants, generally, have left family behind, and although technological advancements have made contact with beloved ones easier than ever, we expect that missing friends and family increases with enduring stay, increasing levels of homesickness. Homesickness may increase or diminish with the success of establishing other social contacts in the country of residence (Tartakovsky, 2007) and may also be alleviated by favorable experiences in the economic domain. Feelings of non-belonging, instigated by the receiving population's attitudes, and coming to the fore in perceived group discrimination, is also found to instill homesickness (Watt and Badger, 2009). We expect that homesickness increases with longer stay and that an increase in homesickness is associated with lower self-rated rated health.

DATA AND MEASUREMENTS

We rely on a four-wave panel collected among newly registered immigrants to the Netherlands in 2012 and 2013, from Bulgaria, Poland, Spain and Turkey (Lubbers et al., 2018b). Immigrants over 18 who registered up to one and a half year before the start of the data collection were sampled (from the immigrants from Poland this was a random sample, from the other groups the whole population was approached). Immigrants were approached in their country of origin language and were sent a copy of the questionnaire as well as login-codes to offer the opportunity to fill out the survey online. In wave 1, 4,804 immigrants participated. This was a response of 32%, of which the majority filled out the questionnaire by paper and pencil (65%). In the subsequent waves, Statistics Netherlands provided information about movers if they agreed to be re-approached again (97%). Before the second wave in the Spring of 2015, a share of 16% had deregistered from the country's municipality-based registers and were no longer part of the survey population. The panel survey knew a relatively large share of attrition due to the character of the population: recent immigrants form a dynamic population. In particular so the EU populations, who are free to move within the EU. From the approached immigrants in wave 2 (3,847) 59% responded. Similarly, another 11% of the wave 2 population had moved at the start of wave 3, in the Fall of 2016. From the 1,998 approachable immigrants, 68% participated a third time. From the 1,334 respondents who participated in wave 3, another 9% could not be reached in wave 4, because of emigration. A response of 79% led to a final 996 respondents in wave 4. We did not find evidence for selective attrition based on immigrants' self-rated health, which we will describe in the trend of self-rated health. Respondents whose gender or age deviated

from wave 1 reports were dropped from the respective wave in which the deviation was found; this was around 5% for each wave.

Self-Rated Health

In this study we employ the widely used self-rated health (SRH) measurement. Respondents were directly asked to rate their health, with a single question "How would you rate your current health? You can think of both your physical and mental health." Immigrants could answer "very poor," "poor," "average," "good," and "very good." Since this is a general assessment it may encompass many different aspects of health, both physical and psychological. Agyemang et al. (2006) stressed that this single item may be differently interpreted among ethnic or immigrant groups, given the finding that it was associated to chronic illness and health care use conditional on ethnic group. Still, the SRH measurement is widely assessed and seen as a key indicator of immigrant health (Acevedo-Garcia et al., 2010). Immigrants with missing values on self-rated health were not included in the analyses, which equaled to 1.2% in wave 1 and <0.2% in the subsequent waves.

Economic-Domain Variables

Immigrants were asked about their main activity and whether this concerned being employed or being unemployed. Respondents could also indicate that they were in school as their main activity, pensioned, on care leave, on sick leave, or something else. We coded both "being employed" vs. the rest and the variable "being unemployed" vs. the rest. Another question asked whether immigrants had been unemployed. We will test whether it makes a difference in self-rated health whether immigrants are currently unemployed or whether past unemployment affects self-rated health.

Immigrants' income was assessed by presenting 11 income categories of the net-household income, from which the respondent was asked to pick the one describing the household income best. We disentangled people with a low household income (of below 1500Euro net per month) from the medium and higher income groups. Around 10% of the respondents did not provide an answer; this group was taken as a "missing on income" category.

Among the employed respondents, we use information about their employment relation and employment conditions. We coded whether people with a job had a permanent contract or not. Strained working conditions were assessed by asking about working irregular hours, doing hazardous work or doing physical heavy work. Respondents with a job could indicate whether this applied to them not at all to very often on a 5-point-scale.

Social-Domain Variables

Contacts in the free time were measured with the questions "How often do you spend time with [country of origin] people in your free time?" and "How often do you spend time with Dutch people in your free time?," which could be answered with one of the following categories: "every day," "several times a week," "a few times a month," "several times a year," "less often," and "never." We coded the contact variables such, that a high score means more frequent contact. For self-rated health it may be more relevant to know whether people experience loneliness, but no direct questions on loneliness are included in the data. Moreover, immigrants may spend time with people from other origins, which was not assessed either. One of the questions is on the number of people important to the respondent and who the respondent feels close to, living in the Netherlands, not including parents, partners, or children. We coded whether people have someone, or no one, important and close living in the Netherlands, other than parents, partner, or children.

We also assessed whether the respondent had a partner and whether the partner lived in the household or outside the household (if so, most of them abroad). As for children of the respondent, we assessed whether the respondent had a child in the household and whether the respondent had children under 18 in the country of origin.

Cultural-Domain Variables

Immigrants were asked to what extent they perceive group discrimination, with the question: "Some say that people from [country of origin] are being discriminated against in the Netherlands. How often do you think [country of origin] people are discriminated against in the Netherlands?." Response categories run from 1 "very often" to 5 "never," which were recoded so that the highest score refers to strongest perceptions of group discrimination. Perceptions of cultural differences were measured by asking for agreement or disagreement on a five-point scale with the statement that the values of Dutch people and [country of origin people] are irreconcilable. The missing values on the two items together amounted 15% of the immigrants. In analyses including the cultural domain variables, respondents with these missing values were excluded. However, in the models without the cultural domain variables these respondents are included.

Emotional-Domain Variable: Homesickness

Immigrants were asked directly whether they often feel homesick, to which they could answer with "no, never," "yes, sometimes," and "yes, very often." Missing values on homesickness were deleted throughout all models.

Control Characteristics

We controlled for gender, age, and the highest level of education obtained in the country of origin. Also, the motives for immigration indicated as "for study" and "for political reasons" and length of stay in months is controlled for. Missing values on the non-nominal control variables were replaced by means.

METHODS

First, we provided the descriptives of the sample and the changes we find in self-rated health. Then we provided evidence to what extent differences between recent immigrants in self-rated health can be attributed to the economic, social, cultural and emotional characteristics. We tested these models within STATA panel modeling, defining the between-effect models (Torres-Reyna, 2007; Statacorp, 2013). The first model included the control characteristics only; the subsequent models included

the predictors from the economic domain, social domain, and cultural domain, respectively. The second model including the economic domain indicators was also tested once for the immigrant population who has worked since immigration, in order to account for job-related characteristics. In the fifth models, we also included homesickness (for the model with all immigrants and a model with the immigrants who have worked since immigration). Finally, we employed dynamic models (fixed effect panel models within STATA), testing for differences within immigrants; we tested to what extent changes in the economic, social, cultural, and emotional domain are related to changes in self-rated health over the four waves.

Analyses

Descriptive statistics among the balanced panel (**Table 1**) show economic integration in the first years: the share of employed increases from 59% to 73%. Unemployment reflects this trend by decreasing. Also, the share of immigrants with a low income became steadily smaller over time (from 33.3% in wave 1 to 16.7% in wave 4). Among the people who (had) work, an increasing share has a permanent contract, whereas there is mostly stability in job characteristics.

Contact with country of origin people and Dutch people decreases somewhat in the fourth wave. Perhaps this is due to an increased share of households with a child, which rose from 22% in wave 1 to 40% in wave 4. Also, more respondents live with their partner; an increase from 62% in wave 1 to 73% in wave 4. The average level of perceptions of discrimination and of cultural distance hardly change over time. The level of homesickness was also stable over time (**Table 1**).

Figure 1 shows that over the four waves, the self-rated health deteriorates. However, the majority by far rate their health to be good to very good, and this proportion remains on a high level over the four waves of our study. There is, however, a clear tendency that immigrants less often opt for the "very good" health assessment and instead shift to "good health" or "average health." The share of immigrants rating their health as "poor" is rather small but this increases over time as well. The changes in the left panel of the figure represent the changes among all immigrants who participated in the four waves. Selective return migration and selective panel attrition may, however, have affected this outcome. If the negative health trend is explained by such selection effects, healthier people are particularly likely to return to the country of origin or to drop out, which does not seem very likely. Indeed, when we show the trend only for the immigrants who participated in all four waves (the balanced panel), the pattern is almost identical. We conclude from **Figure 1** that immigrants' self-rated health is, in general, positive, however decreasing over time. **Figure 2** presents the trend for each of the four immigrant groups. For all of the

TABLE 1 | Descriptive statistics among the balanced panel ($n = 883$).

		Wave 1	Wave 2	Wave 3	Wave 4
Good health rating	1–5	4.30	4.18	4.10	3.98
Employed	0/1	59.0	67.4	72.5	73.3
Unemployed at time of interview	0/1	21.5	14.9	11.0	9.0
Been unemployed last year	0/1		34.4	31.8	16.9
Income					
-Medium or high income (ref)	0/1	54.9	49.8	71.3	75.5
-Low income	0/1	33.3	27.2	20.8	16.7
-No information on income	0/1	11.8	10.1	7.8	7.8
Contact with CO people	1–6	4.19	4.23	4.19	4.05
Contact with Dutch	1–6	4.01	3.98	4.10	3.95
Close friend in NL	0/1	91.4	93.0	91.7	94.4
Partner status					
-No partner (ref)		19.5	16.3	15.6	14.4
-Partner in the household		62.2	69.0	71.9	72.8
-Partner outside the household		18.3	14.7	12.5	12.8
Children in the household	0/1	22.4	28.7	33.4	40.4
Children under 18 in CO	0/1	4.5	3.4	3.3	2.8
Homesickness	1–3	2.05	2.06	2.05	2.05
AMONG RESPONDENTS WITHOUT MISSING VALUES ON CULTURAL VARIABLES ($N = 779$)					
Perceived group discrimination	1–5	2.85	2.86	2.89	2.85
Perceived cultural distance	1–5	2.75	2.73	2.69	2.73
AMONG IMMIGRANTS WHO HAVE (HAD) WORK IN THE NETHERLANDS ($N = 640$)					
Permanent contract	0/1	35.6	45.2	57.3	67.8
Working irregular hours	1–5	1.87	1.94	1.96	2.00
Hazardous work	1–5	1.32	1.31	1.36	1.35
Physical heavy work	1–5	1.68	1.68	1.69	1.65

New Immigrant Survey–the Netherlands–4 waves.

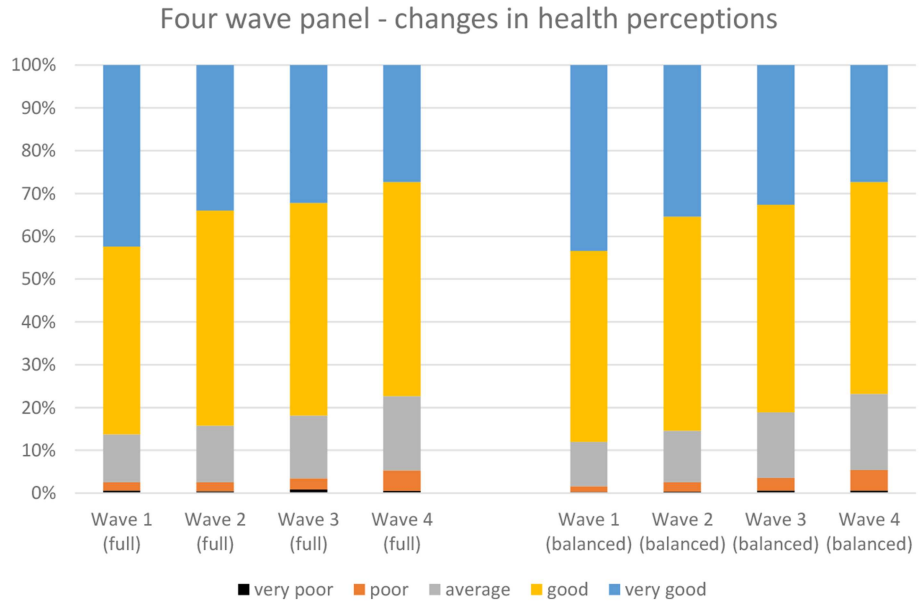

FIGURE 1 | Changes in immigrants' health assessment over the four waves of the panel. **Left:** all immigrants participating in the separate waves. **Right:** balanced panel. New Immigrant Survey–the Netherlands–4 waves.

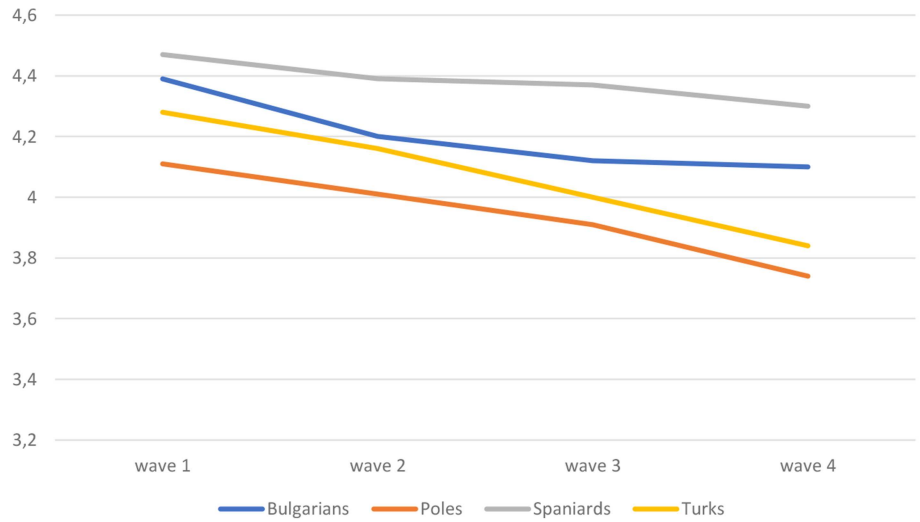

FIGURE 2 | Changes in average self-rated health by immigrant group (balanced panel). New Immigrant Survey–the Netherlands–4 waves.

immigrant groups, the decline in self-rated health is found, although the slope is less steep for the Spanish immigrants. In the remainder of the article we will assess whether differences in self-rated health and the changes therein can be related to and explained by economic, social, cultural, and emotional interpretations of health status. We calculate unstandardized effect sizes, to provide information on what the difference in self-rated health is on the minimum vs. the maximum value of the explanatory variables.

The first model of **Table 2** shows that male immigrants rate their health to be better than female immigrants. The older the immigrants are, the lower their health rating. A higher level of education also increases the self-rated health. Immigrants from Spain and Bulgaria rate their health to be better than immigrants from Poland and Turkey; also controlled for educational level and study as motives of migration. Immigrants who came for study rate their health to be better, whereas immigrants who moved for political reasons report worse health. We also find that when immigrants reside longer in the country, their self-rated health decreases, which ties in with the happy immigrant literature: a more positive perspective just after immigration, but a worsening perspective with a longer stay. The effect is not strong though;

TABLE 2 | Recent immigrants' health: between effects, from the economic, social and cultural domain.

	Model 1	Model 2a -all	Model 2b -population that has (had) work since immigration	Model 3 -all	Model 4 -all
ECONOMIC					
Employed		0.09**	0.13**		
(Unemployed at time of interview)		*0.03*			
Been unemployed last year		−0.04	−0.04		
Income					
- Medium or high income (ref)					
- Low income		−0.09**	−0.02		
- No information on income		−0.01	0.02		
Permanent contract			0.01		
Irregular work			0.00		
Hazardous work			−0.08**		
Physical heavy work			−0.14***		
SOCIAL					
Contact with CO people				0.01	
Contact with Dutch				0.03***	
Relevant and close person in NL				0.13**	
Partner status					
- No partner (ref)					
- Partner in the household				0.03	
- Partner outside the household				−0.03	
Children in the household				−0.05	
Children under 18 in CO				0.08	
CULTURAL					
Perceived group discrimination					−0.10***
Perceived cultural distance					−0.04***
CONTROLS					
Gender (men)	0.09***	0.06**	0.13***	0.09***	0.09***
Age	−0.01***	−0.01***	−0.01***	−0.01***	−0.01***
Level of education	0.05***	0.04***	0.03***	0.04***	0.04***
Country of Origin					
- Poland (ref)					
- Bulgaria	0.06**	0.09***	0.03	0.05	0.10**
- Turkey	−0.02	0.02	−0.15**	−0.03	−0.04
- Spain	0.15***	0.14***	0.03	0.13***	0.08*
Reason of immigration: Study	0.09**	0.12***	−0.02	0.07*	0.05
Reasons of immigration: Political	−0.20***	−0.20***	−0.14**	−0.20***	−0.18***
Months since immigration	−0.002***	−0.002***	−0.002**	−0.002***	−0.001***
Number of respondents	4,734	4,734	3,519	4,734	4,169
Number of observations	8,987	8,987	6,211	8,987	7,589

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. New Immigrant Survey–the Netherlands−4 waves.

after a stay of 5 years, the health assessment is estimated to be 0.12 lower (on a five-point scale).

In the economic domain, being employed is related to better self-rated health, but its effect is limited; not larger than 0.09 among all immigrants, and 0.13 when the sample is restricted to immigrants who did work since immigration (**Table 2**, models 2a and 2b). Surprisingly, unemployment does not reduce the self-rated health significantly (neither current unemployment nor having been unemployed in the last year). Immigrants with a low income rate their health to be poorer as compared to immigrants with a medium to high level income; however, here the effect is limited in size. On the five-point-scale, the lower income group rates the health 0.09 lower.

Among the immigrants who (had) work, a permanent job position is not associated to self-rated health. More hazardous work reduces good health rating ($b = -0.08$) and this holds

even stronger for doing physically heavy work ($b = -0.14$). Immigrants performing physically heavy work rate their health 0.56 lower than immigrants not doing so. The effect of income is interpreted by the job-characteristics; it is thus not so much the lower income that reduces self-rated health, but the more hazardous work and physically heavy work that characterizes low income jobs.

In the social domain, model 3 in **Table 2** shows that immigrants having more contact with Dutch people report better health, and so do immigrants reporting to have at least one relevant and close person to them living in the Netherlands. The frequency of contact with country of origin people, or having a partner or children in the household or living in the country of origin itself are not associated to self-rated health.

Model 4 in **Table 2** provides evidence that recent immigrants who perceive that their immigrant group is more often discriminated against in the Netherlands rate themselves to be less healthy; immigrants who perceive discrimination very often score 0.40 lower than immigrants perceiving no discrimination at all. This lower health rating also holds for immigrants who perceive a stronger incompatibility between the Dutch culture and the country of origin culture; but the effect is smaller (b=-0.04).

In models 5a and 5b, presented in **Table 3**, we show evidence for the role of homesickness. The effect of homesickness turns out to be relevant in understanding recent immigrants' self-rated health. The more often immigrants report homesickness, the lower their self-rated health. The difference between immigrants never experiencing homesickness and those experiencing it often is 0.24. In this last model, the effect of perception of cultural distance is no longer significant, implying that the relation between cultural distance and self-rated health can be interpreted by homesickness. This partly holds for perceptions of discrimination as well, although the effect of perceived discrimination remains significant once homesickness is included. The other effects in the model are hardly affected by the inclusion of homesickness.

Model 5b from **Table 3** has also been tested for each of the four immigrant groups separately. **Appendix 1** presents the findings. For each of the immigrant groups, physical heavy work is associated with lower health. Social contact with Dutch is positive among all groups but reaches significance among these four smaller samples only among the Turkish immigrants. Discrimination perceptions are consistently related to lower health ratings across the immigrant groups. Homesickness only reaches significance among Polish and Spanish immigrant groups.

TABLE 3 | Recent immigrants' health: between effects, including homesickness.

	Model 5a -all	Model 5b -population that has (had) work since immigration
ECONOMIC		
Employed	0.10**	0.09*
Been unemployed last year	−0.02	−0.04
Income		
- Medium or high income (ref)		
- Low income	−0.05	−0.01
- No information on income	0.02	0.01
Permanent contract		−0.01
Irregular work		0.00
Hazardous work		−0.07**
Physical heavy work		−0.15***
SOCIAL		
Contact with CO people	0.02*	0.02*
Contact with Dutch	0.02**	0.03**
Relevant and close person in NL	0.12**	0.11*
Partner status		
- No partner (ref)		
- Partner in the household	0.05	0.05
- Partner outside the household	−0.01	0.02
Children in the household	−0.08**	−0.06
Children under 18 in CO	0.07	0.02
CULTURAL		
Perceived group discrimination	−0.09***	−0.08***
Perceived cultural distance	−0.03**	−0.03*
EMOTIONAL		
Homesickness	−0.12***	−0.09***
CONTROLS		
Gender (men)	0.05*	0.12***
Age	−0.01***	−0.01***
Level of education	0.03***	0.02**
Country of Origin		
- Poland (ref)		
- Bulgaria	0.12***	0.07
- Turkey	−0.01	−0.12**
- Spain	0.08*	−0.02
Reason of immigration: Study	0.06	−0.03
Reasons of immigration: Political	−0.19***	−0.15**
Months since immigration	−0.002***	−0.001*
Number of respondents	4, 169	3, 143
Number of observations	7, 589	5, 357

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. New Immigrant Survey–the Netherlands−4 waves.

Dynamic Models

Table 4 presents the findings from the dynamic fixed-effect models. It shows to what extent changes within recent immigrants come together with changes in self-rated health in model 1a, the model for all immigrants, and in model 1b, the findings for the immigrants who have worked since immigration. Findings are, overall, similar in the two models. In a model without predictors, Rho (intraclass correlation coefficient) equals 0.62, which is the proportion of variance in rated health due to differences between immigrants; the within person variance is 0.38.

Strikingly, neither a change in paid work nor in income affects changes in self-rated health. From the economic domain, we do find small effects of changes in hazardous work and physical heavy work. Immigrants with a job who report over time that their job has become more hazardous or more physically heavy decrease in their self-rated health.

TABLE 4 | Recent immigrants' health: fixed effects (within individuals).

	Model 1a -all	Model 1b -population that has (had) work since immigration
ECONOMIC		
Employed	−0.01	−0.03
Been unemployed last year	−0.02	−0.04
INCOME		
- Medium or high income (ref)		
- Low income	0.06	0.05
- No information on income	0.06	−0.04
Permanent contract		−0.04
Working irregular hours		0.02
Hazardous work		−0.06*
Physical heavy work		−0.05*
SOCIAL		
Contact with CO people	0.00	−0.01
Contact with Dutch	0.02**	0.03*
Relevant and close person in NL	−0.02	0.06
Partner status		
- No partner (ref)		
- Partner in the household	−0.03	−0.05
- Partner outside the household	−0.06	−0.07
Children in the household	−0.11**	−0.07
Children under 18 in CO	0.06	0.05
CULTURAL		
Perceived discrimination	−0.04**	−0.08***
Perceived cultural distance	−0.04**	−0.02
EMOTIONAL		
Homesickness	−0.03	−0.05
Number of respondents	4, 169	3, 143
Number of observations	7, 589	5, 357

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$. *New Immigrant Survey–the Netherlands-4 waves.*

An increase in contacts with Dutch residents is associated with an increase in self-rated health. The birth of a child in the household slightly decreases self-rated health ($b = -0.11$), but not significantly so within the restricted sample of the working population (**Table 4**, model 1b). Finally, we find that immigrants who perceive an increase in group discrimination and an increase in perceived cultural distance during these first years after immigration rate their health poorer over time. Among the population that had paid work since immigration, it is mainly the change in perceived discrimination that contributes to a lower self-rated health, with a maximum decrease of 0.32 when immigrants change from the perception that there is no discrimination at all, to the perception that their country of origin group is discriminated against often. Whereas homesickness explained why there are differences in self-rated health between immigrants, *changing* homesickness is not associated with changes in self-rated health.

Appendix 2 presents the fixed-effect models for each of the immigrant groups. Samples for the immigrant groups are relatively small (in particular so for the Bulgarian and Turkish immigrants), implying that effects reach significance less easily. Hazardous work and physically heavy work affect self-rated health only among Spaniards and Turks, respectively. Changes in contacts with Dutch are positive among all groups, but significant only among Turkish immigrants. Increasing perception of discrimination is significantly related to lower rating of health for all groups but the Bulgarians. Among this latter group an increase in perceived cultural distance as well as homesickness is related to a decrease in health rating.

CONCLUSIONS AND DISCUSSION

Immigrants deliberately moving immigrate in search for a better income, to join a partner, to start a study, or just opt for a better life in another country, and mostly perceive their health as good, or very good. A small 2% of the recent immigrants assessed their health status as (very) poor. In contrast, 43% of the respondents of our panel stated their health to be very good. Also, after the 5 years in which the immigrants participated in the survey for the first time, the self-rated health among the vast majority is good. The proportion of immigrants assessing their health as (very) poor increases, but still, only 5% do so. The major change is shown by the decrease in the share of immigrants reporting "very good" health. It steadily declined from 43% in the first approach to 27% in the fourth wave.

What is associated with a lower health reporting? We have shown that immigrants in hazardous and physically heavy work conditions rate their health to be lower, explaining why immigrants with lower income have a lower self-rated health. Immigrants being in a paid job show a very limitedly better self-rated health, whereas unemployment does not decrease health assessment. Also, a more secure labor market position, expressed by a permanent contract, does not make a difference in self-rated health. In the social domain, immigrants with more contacts show better health. Most convincing, though, are cultural and emotional explanations: those who perceive discrimination, cultural distance, and home-sickness report lower health.

Now, which changes were associated with lower health assessment during the four waves? Strikingly, changes in the objective economic conditions did not change immigrant's self-rated health. Immigrants who obtained a job, and changed status from unemployed to employed, did not report a change in their health. Also, a change to a higher income or obtaining a permanent job was not associated with lower self-rated health. We do find evidence that evaluation of the work becoming more hazardous or more physically heavy is related to lower self-rated health.

In the social domain, an increase in contacts with the Dutch is associated with better health. Over time, the frequency of contacts did not increase on average and, hence, cannot explain the downward trend in health rating. We found that a first-born in the household is associated with a decrease in self-rated health. Since this is one of the major changes in the period in which the immigrant population is studied here, it may account for the less positive health rating over the years we followed the recent immigrants. Recent immigrants with

first-borns can rely less on family for informal support and care-arrangements, which may make it particularly hard for immigrants to combine family life and work. Immigrants in the Netherlands have been found to be rather critical of the (costly) child-care (Lubbers et al., 2018a); once immigrants have children they may experience the high costs of child care as an additional burden on their household, possibly increasing tensions.

Homesickness hardly changed over the course in which immigrants were studied and we did not find evidence that increased homesickness within respondents was associated with lower reported health. We do find that an increase in perceptions of cultural distance, between the Dutch culture and country of origin culture, is associated with lower health, but in particular that an increase in perceived group discrimination is associated with lower health. Still, over the four waves, there are no marked increases in both perceptions of cultural distance or perceived discrimination that can explain the less positive health assessment over time.

McDonald and Kennedy (2004) rightly claimed that more research is needed into the interpretation of good and bad health or, in this case, perhaps more relevant research of good and very good health. Immigrants may have perceived themselves to be in very good health on arrival but may consider themselves, as compared to the lifestyles of the healthier part of the receiving population, not as healthy as initially thought. It is an interesting question to whom immigrants compare themselves, when evaluating their health. Another way to increase insight in declining health assessment would be to study the combination of changes in the economic, social, and cultural domains with the adoption (or acculturation) of more unhealthy lifestyles (Antecol and Bedard, 2006); i.e., more stress, larger intake of calories, higher alcohol consumption and, perhaps relevant in the Dutch context, other drug usage. Although there is much attention in the international literature on self-rated health, which has shown that self-rated health is a relevant predictor for health outcomes, it is unfortunate that we were not able to test whether the explanatory model we tested here also holds true for other health outcomes.

Another promising direction is to focus on immigrants' unmet expectations, such as has been found to contribute to frustrations in health care among Somali in the US (Pavlish et al., 2010) and Sudanese in Canada (Simich et al., 2006). We found that homesickness did not increase over time. Instead, a more specific assessment of decreasing satisfaction with life in the host country could be the key to understanding decreasing health rating among immigrants in the first years after immigration. What stands out though, is that subjective evaluations of immigrants' situations are key to understanding how they rate their health. The strongest role we found is that for perceived discrimination. Immigrants becoming aware of ethnic group discrimination decline in self-rated health.

ETHICS STATEMENT

The data collection for this project started in 2013. An ethics approval was not required as per applicable institutional and national guidelines and regulations at the time. The design of the data collection was approved by the Dutch Science Foundation. Sampling of respondents is conducted by Statistics Netherlands. Statistics Netherlands also approved the letters sent to respondents to request their participation.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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SUPPLEMENTARY MATERIAL

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Selectivity and Internal Migration: A Study of Refugees' Dispersal Policy in Sweden

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Following the intensified waves of refugees entering Europe, dispersal policies for newly arrived refugees have been proposed to speed up their integration and to share the financial burden across and within the EU countries. The effectiveness of dispersal policies depends, among other factors, on the extent to which refugees tend to stay in the initial location they are assigned to live in, and on their patterns of self-selectivity during subsequent moves of internal migration. Economic theories of migration suggest that economic immigrants are self-selected to destinations based on their abilities. Highly skilled and motivated people tend to migrate to labor markets with broader opportunity structures, while less capable individuals choose markets that are more sheltered. We use a quasi-experimental design to examine the extent to which those theories are first, applicable to refugees as well, and second, explain their self-sorting into local labor markets at destination. We focus on a refugee cohort that came to Sweden during the period when the so-called "*Whole-Sweden*" policy was in effect. This policy was designed to reduce the concentration of refugees in the larger cities by randomly deploying asylum seekers across Sweden. After being assigned to an initial location, refugees could move freely within Sweden. We use individual register data from Statistics Sweden to study all refugees who arrived in Sweden during 1990–1993, and we follow each one of them during an 8-year period. We use discrete-time survival analysis (complementary log-log models) in order to assess the effects of abilities on the destination choices of refugees, and individual fixed-effect models to assess the effects of internal migration on their income. Destinations were defined on the basis of the economic opportunities they offer. The results suggest that refugees' education levels are related to major differences in their destination choices. Highly skilled refugees were more likely to migrate to labor markets with a wide structure of opportunities relative to less skilled refugees. In addition, all relocation choices had positive effects on refugees' income growth.

Keywords: refugees, dispersal policy, self-selection, economic assimilation, Sweden, internal migration

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INTRODUCTION

Economic theories of migration suggest that economic immigrants are self-selected to destinations based on their abilities. Highly skilled and motivated people tend to migrate to labor markets with broader opportunity structures, while less capable individuals choose markets that are more sheltered. The purpose of this study is to assess the extent to which theories explaining the

behaviors of international economic migrants and their economic assimilation at their destination countries are first, applicable to refugees as well and second, relevant in the context of their self-sorting into local labor markets at destination.

Specifically, we ask two questions that are relevant to the ongoing debate about the effectiveness of dispersal policies of refugees, mainly in Europe. First, are refugees self-sorted into different labor markets within their host country based on their skills and abilities? Second, whether those self-sorting patterns are economically rewarding to the refugees.

For that, we focus on a refugee cohort that came to Sweden during the period when the so-called "*Whole-Sweden*" policy was in effect. This policy was designed to reduce the concentration of refugees in the larger cities by randomly deploying asylum seekers across Sweden. After being assigned to an initial location, refugees could move freely within Sweden. We follow each one of them in order to assess first, the effects of their abilities on their destination choices and second, the effects of their internal migration patterns on their income.

Migrants' Dispersal Policies

Following the increase in the number of refugees coming to Europe a few years ago, several mechanisms for distributing asylum seekers across and within European countries have been debated. Advocates of such policies argue that allocation policies can help in sharing the burden of absorption of refugees across the EU and in facilitating their integration. Similarly, some countries favor this approach when implementing their own integration policies as a mean of reducing the financial and social burdens of immigration that fall upon refugees' preferred destinations—usually the countries' major cities. However, two key questions remain unanswered, namely, (1) to what extent refugees allocated to different areas of the host country stay in their initial locations, and (2) whether such policies contribute to the integration of immigrants.

There are several examples of countries that have implemented dispersal policies for asylum seekers in the past. Research on the effectiveness and consequences of such policies has yielded contradictory results. A study conducted in Scotland suggested that most individuals remained in their assigned sites, and questioned the impact of constrained mobility on refugees' opportunities for social and economic integration (Stewart, 2012). In Denmark, negative selectivity of refugees' relocations after being randomly settled across the country was found. Immigrants with low skill levels were more likely to move to ethnic enclaves in major cities. However, these low-skilled movers showed a significant increase in their earnings following their change of residence (Damm, 2009). These findings suggest that ethnic networks are important for matching individuals with jobs. Similarly, results from the Netherlands indicate that there are important economic benefits for immigrants who reside in neighborhoods where there is a high concentration of members of their own ethnic group, when other neighborhoods' characteristics are controlled for (Beckers and Borghans, 2011). Several studies have examined the effectiveness of the Swedish settlement policy and found that it had negative impacts on the economic integration of immigrants. One explanation put forward by Edin et al. (2004) is that the policy shifted the emphasis from labor market integration of refugees to their income support by the state. It was also found that refugees tend to move to larger cities where members of their ethnic group are present and where there are more employment opportunities. However, no increase was found in the intensity of secondary migration of refugees that were part of the program relative to those that were not affected by it (Andersson, 1998; Åslund, 2000, 2005). Given the inconsistent results of previous research, we suspect that the effectiveness of the policy depends on the motives, and consequently on the selectivity patterns of individuals in staying or moving out of their assigned locations.

Theoretical Framework

The economic theory of international economic migration suggests that patterns of immigrants' self-selection influence immigrants' economic performance at their destinations. Obviously, receiving countries' characteristics serve as signals for prospective immigrants that choose among destinations, and at the same time—affect their assimilation after arriving there. Most research on the impact of the interaction between (1) immigrants' self-selection patterns from their countries of origin; (2) host country characteristics; and consequently (3) immigrants' sorting into those destinations—on the economic assimilation of immigrants, has been centered on migration waves across countries. We try to adopt these theories in our attempt to explain refugees' sorting into local markets in one country (Sweden), and their earnings assimilation in their chosen local markets there.

Self-Selection, Sorting, and Assimilation

Scholars of international economic migration have pointed at two main interrelated determinants of immigrants' economic assimilation namely, immigrants' patterns of self-selection from their countries of origin (Chiswick, 1978; Borjas, 1987), and the host country's reception context (Borjas, 1990; Portes and Rumbaut, 2006). Understanding the joint contribution of these two factors on the economic assimilation of immigrants has important implications for policy-making (Borjas, 1990).

Immigrants' patterns of self-selection are one of the main determinants of their economic assimilation. The concept of "self-selection" was originated by Roy (1951) in the context of occupational choice, but has since been applied to many types of rational choice-making. Chiswick (1978) introduced it in the study of decisions made by potential immigrants at source countries whether, and where to migrate. He, and other scholars, argued that immigrants are not a random sample drawn from the source country population, but rather represent a positively self-selected group from the population at risk. Migration entails risks and costs that immigrants decide to take in order to improve their economic conditions at the destination country (Chiswick, 1979; Borjas, 1987; Chiswick and Miller, 2005).

Immigrants choose to migrate to destinations where the demand and consequently the relative compensation for their skills is the highest. The characteristics of potential destinations can, therefore, be evaluated by various measures of inequality that reflect differences in the relative remuneration by labor markets

to varying levels of qualifications. That is, individuals with high levels of observed and unobserved qualifications tend to migrate to places where there is a high level of inequality, because there they receive higher returns to their skills relative to low-inequality destinations. In contrast, individuals with low skill levels tend to migrate to markets where there are low levels of inequality, since the "penalty" that accrues to their low skills is relatively smaller, and their relative position along the income distribution is closer to the mean.

Furthermore, when immigrants have several destinations to choose from, then additional sets of within-immigrants sorting patterns play a role in determining the distribution across destinations of those who decide to migrate. For example, Grogger and Hanson (2011) found that the gaps in education between immigrants and non-migrants from their own source country get wider (favoring the immigrants), as the skill-related difference in earnings between the destination and source countries gets larger. Descriptive statistics indeed confirm that immigrants are generally positively self-selected from the population at risk namely, they are more educated than their non-migrant counterparts at their countries of origin (Docquier and Marfouk, 2006).

Some studies that have examined self-selection patterns involved in internal migration assumed that individuals are randomly distributed in different regions (Borjas et al., 1992; Gabriel and Schmitz, 1995; Nakosteen et al., 2008; Abramitzky, 2009). For example, Borjas et al. (1992) examined the self-selection of individuals within the United States during the 1970s, assuming that there is no correlation between individual characteristics at the age of 14 and the average level of compensation where they reside. Clearly, such an assumption is questionable, because it assumes that there was no self-selection in the parents' generation to regions with high rewards to their skills, nor any intergenerational transfer of skills between parents and their children[1]. Yet, some results suggest that immigrants are self-selected and that inter-state differences in returns to skills are a major determinant of both the size and skill composition of internal migration flows in the U.S. That is, immigrants are self-selected based on the differences in the returns to their skills in their state of origin and the other states they migrate to e.g., Gabriel and Schmitz (1995).

Context of Reception and Assimilation

The second main determinant of immigrants' economic assimilation is the destination's characteristics, including migration and welfare policies, and market structure. Clearly, the destination's reception contexts affect the type of immigrants that prefer to arrive to certain locations and consequently, their patterns of sorting into those places.

In the context of within-countries migration, the more relevant explanation is that referring to the nature of local rather than national labor markets. It suggests that the economy is divided into primary (where the demand is for highly skilled workers, with highly paid jobs and career opportunities) and secondary (with low-skilled, low-paying jobs) labor markets. The primary labor market is characterized by a broader structure of opportunities relative to the secondary labor market. Individuals with higher qualifications therefore tend to self-sort themselves to primary labor markets, while the entry of individuals with low levels of qualifications to these markets is restricted. Consequently, low-skilled workers are expected to have better employment opportunities in secondary labor markets (Piore, 1970, 1979). The labor market's structure of opportunities is operationalized in the present study by three variables: the size of the labor market, mean earnings in the market, and the percentage of those who have an academic degree.

Economic theories therefore suggest that individuals tend to migrate to where they expect to receive the highest returns to their skills and abilities. Since there are differences in the returns to skills across regions and localities within countries, it can be hypothesized that internal migration should not be different from international migration. Highly skilled individuals are expected to migrate to regions where there are high returns to their skills, while the less-skilled ones tend to stay in or migrate to regions where their loss due to their lack of skills is smaller (Borjas, 1987, 1990). Individuals that suffer from the highest levels of mismatch between their characteristics and the structure of returns in their region of residence are the most likely to internally move. Therefore, the differences in pay-to-skills across regions affect the skills distribution of internal migration flows (Borjas et al., 1992). Additionally, some studies have attempted to also identify self-selection patterns of immigrants based on unobserved characteristics that are assumed to also affect economic assimilation (e.g., Borjas, 1990; Saarela and Rooth, 2006; Cohen and Haberfeld, 2007; Haberfeld, 2013). Examples of unobserved attributes include risk aversion, motivation and other individual characteristics that have major implications for immigrants' labor market outcomes.

Economic Assimilation of Immigrants

As described above, immigrants' self-selection and sorting patterns comprise of both observed (mainly measured by their education level) and unobserved characteristics (such as motivation and risk-taking). A positive self-selection pattern on both observed and unobserved attributes enhances migrants' ability to economically assimilate in the host country (e.g., Borjas, 1990; Cohen and Haberfeld, 2007; Haberfeld, 2013).

Students of international migration have suggested that immigrants (regardless of their specific levels of human capital) experience considerable social and economic hardships in the labor market of the host society upon arrival (e.g., DeVoretz, 2006). Immigrants at that stage are not familiar with the new labor market; they have limited access to information and to social ties; they do not have full command of the language; their occupational skills are not always fully transferable to the new economic system, and at times they even face discrimination. As a result, immigrants (even high-skilled) are at a disadvantage upon

[1]The above assumption was indeed refuted empirically. A significant correlation between individuals' skill levels and average skill levels in the region of residence at the age of 14 was found.

their arrival when compared to native-born workers of similar attributes (Chiswick and Miller, 2009).

With the passage of time in the host society, however, many immigrants experience upward occupational and economic mobility, and consequently, improve their relative market position. Indeed, after a certain period of time in the host society immigrants have been found, many times, to close the earnings gaps with comparable native-born populations, especially among those with high levels of human capital (Chiswick, 1978, 1979; Borjas, 1990; LaLonde and Topel, 1997).

Although human-capital is highly influential in shaping immigrants' economic fortunes, the context of reception prevalent in a specific market mediates the effect of training and skills (and specific occupations) on the incorporation of highly skilled immigrants into that market. Research on international migration in several countries also suggests that economic assimilation of highly skilled immigrants may not be taken for granted and depends on countries' migration policies, citizenship laws, economic opportunities in the labor market, the occupational labor market in which the immigrant worker operates, and welfare institutions—among others (Cohen and Haberfeld, 2007; Chiswick and Miller, 2009).

Obviously, internal and international migrations are very different on key issues. For example, the issue of immigrants' citizenship of the host country is much more important for assimilation at the international than the internal migration processes. Yet, we can derive important insights from the international migration theory and research literature for better understanding movements from one locality to another within the same country. Issues such as market structure, occupational markets and their barriers faced by newcomers, or welfare policies are relevant in local as much as in national markets.

Theoretical Shortcomings

While our main conceptual model is driven from an economic perspective, the literature offers non-economic explanations as well for location choices by individuals. Aradhya et al. (2017) argue that immigrants' location decisions should be understood as part of a broad utility model in which residential choices of immigrants are the result of a wide range of their residential preferences, both economic and non-economic. Most importantly, studies have suggested that a major motive for immigrants' choice of destination concerns being closer to relatives, friends, and co-ethnic group members (e.g., Massey et al., 1993; McPherson et al., 2001; Epstein, 2002; Bauer et al., 2007; Aradhya et al., 2017).

When individuals live in proximity to their relatives, friends, and co-ethnic group members, they will move to other places only for total gains that exceed the direct costs of moving along with the emotional costs of leaving their social environment (Dahl and Sorenson, 2010). Similarly, Chiswick and Miller (2005) hypothesized that migrants are willing to accept lower wages if the job offered to them is located in an ethnic enclave, because of the non-economic benefits labeled as "ethnic goods." Dahl and Sorenson (2010) developed a new methodology for determining how individuals weigh both financial and social factors in order to predict geographic mobility. They show that when immigrants take internal migration decisions, their preferences for living near relatives and friends are more important than opportunities for higher pay elsewhere. Consequently, if individuals are initially randomly placed, then some of them might decide to relocate themselves in order to be closer to relatives or other members of their ethnic group, despite a possible economic loss associated with such a relocation decision.

Available housing alternatives are another key factor in immigrants' (and probably even more so in refugees') choices of destination. In most cases, housing is the costliest item in immigrants' expenses. Consequently, it is reasonable to assume that when considering geographical relocation, immigrants (including refugees) assign a high weight to the cost of housing at both their present location and at relocation alternatives. It is quite possible that relocation decisions made by refugees following their initial residential placement are affected by housing considerations and not necessarily by earnings, social, or environmental motives.

Finally, some scholars have lately noted that environmental motives increasingly compete with the abovementioned economic and social reasons for interregional migration (Lundholm, 2007; Bonasia and Napolitano, 2012; Vilhelmson and Thulin, 2016). Environmental motives could include the specific qualities of a potential destination, such as the natural setting of the place or its social and cultural environment[2]. Clearly, the studies that emphasize environmental motives are more relevant to non-refugees (when many destinations can be easily chosen).

That being said, the ability to empirically distinguish between first, economic and non-economic, and second, between various non-economic motives for migration is many times limited. Furthermore, there are non-economic motives for migration that might affect migration's economic outcomes in non-trivial ways. For example, preferences for living close to relatives, friends and co-ethnic group members clearly, enhance immigrants' networks that reduce the cost of migration and facilitate the migrants' economic integration in their new locations. Not only that, self-sorting patterns could be related to different types of immigrants' networks. It is quite possible that high- and low-skill immigrants join different networks across and within geographical locations. Furthermore, different networks might help immigrants in attaining different economic outcomes (for example, employment opportunities vs. high earnings). Similarly, lowering housing costs can be viewed as an economic motive, but it is not related necessarily to immigrants' motive to raise their earnings levels.

Here, we follow the economic framework of immigrants' self-selection (Chiswick, 1978; Borjas, 1987, 1990), deriving from it our expectations as well as our empirical approach for analyzing refugees' internal moves within Sweden. Notwithstanding, we link this framework to the immigrants' networks explanation due to the close linkage between the two.

[2]Sometimes, a migration decision echoes a wish to simply change living environment (Vilhelmson and Thulin, 2016).

THE SETTING

Until the beginning of the 1980s, immigration to Sweden was composed mainly of labor migrants from Nordic, West, and South European countries. Therefore, immigration was mainly seen as an economic issue related to the operation of the labor market and hence was handled by the Labor Market Board (AMS). The Board handled issues of immigrants' recruitment, their integration in Sweden, and the assignment of residence location to quota refugees. However, since the mid-1970s, immigration to Sweden has contained increasing numbers of refugees from a broad range of countries and cultures (Bengtsson et al., 2005). As a result, in 1985 the Immigration Board (SIV) replaced AMS in managing international migration and a new dispersal policy was introduced.

This new policy became known as the "Sweden-wide strategy" or "The Whole-of-Sweden Strategy" (Andersson, 1998; Bevelander, 2010). The reform was introduced in response to complaints from cities that had experienced a rise in the number of incoming immigrants and perceived this as a burden on their local resources. SIV was given the authority to assign newly arrived refugees to their initial municipality of residence. By implementing this policy, the government hoped to speed up the integration process of refugees and to reduce the burden on the public budget of the big cities (Åslund et al., 2011). Therefore, arriving asylum seekers could not freely choose their place of residence. Rather, agreements were signed between SIV and the municipalities on the number and types of refugees (ethnic/linguistic origin, families/singles) that would be assigned to each municipality (Andersson, 2007). The municipalities received from the government budgets to cover the cost of housing and board for asylum seekers and refugees during their first three years in the assigned localities, and a fixed sum of money for other costs (RegSkr, 1986/1987:134, p. 27).

Originally, municipalities were selected based on their ability to incorporate immigrants. However, over time the number of receiving municipalities increased from 60 to 277 out of Sweden's 284 municipalities in 1989 (Åslund et al., 2011), including also some municipalities that experienced a net out-migration flow because of a depressed local economy (Bevelander, 2010). As the number of refugees rose over the years, public housing availability determined immigrants' placement rather than effective local integration policies (Åslund et al., 2011).

It should be noted that while refugees were given little choice in their initial placement, they were free to move if they were able to find housing in other municipalities. Although the only direct cost for refugees as a result of moving was losing their place in language courses (i.e., delaying their enrolment; Åslund et al., 2011), the refugees' ability to find housing by themselves was extremely limited due to the tight housing market in Sweden during that period. The policy was abandoned in July 1994 as a result of the long waiting time in refugees' reception camps for apartments in the participating municipalities. Since 1994, asylum seekers have been able to look for their own housing and are entitled to housing allowances, or alternatively a free place in an asylum location (RegSkr, 1994/1995:131, p. 29).

EXPECTATIONS

As stated, our conceptual model is driven by an economic perspective; therefore our expectations are basically in line with prevalent economic theory. We hypothesize that refugees that are assigned to their initial location, similarly to economic immigrants, conduct an evaluation of their economic position (i.e., employment possibilities and earnings) in their initial placement and their expected position in the labor markets they consider relocating themselves to. Consequently, we hypothesize that refugees with higher education levels move to (or stay in) labor markets with broader opportunities structures (as captured empirically by the size of the labor market, mean earnings in the market, and the percentage of those who have an academic degree), and that lower-educated refugees select labor markets with narrower opportunities structures. *In both cases*, refugees are expected to gain economically from their relocations.

However, a main caveat might change these basic economic predictions in different ways. The Swedish case is in many respects unique and different from situations studied in previous migration research. First, during the period in which the refugees arrived, Sweden suffered a major economic crisis that could limit internal migration among refugees. Following that crisis, the country has been experiencing structural transformation since the early 1990s (Åslund and Rooth, 2007). Second, Sweden is still (as compared to most other countries) a leading welfare state. Therefore, the incentives and possibilities faced by refugees in Sweden who seek to relocate could be more extensive than simply employment opportunities and higher earnings—as hypothesized in other countries.

DATA

We use Swedish Register data from GILDA[3], which cover the entire Swedish population from 1990 to 2014. The register contains longitudinal information on place of birth, immigration year, income from salary, age, education, and place of residency. We study immigrants that arrived in Sweden between 1990 and 1993 at the age of 25 to 55 upon arrival, and follow each of them for 8 years since their year of arrival: for example, we follow those who arrived in 1992 for each year until 1999. Unfortunately, the data do not contain information about immigrants' visa type (at least not for these years). Therefore, we focus on immigrants from nine leading source countries: Yugoslavia[4], Bosnia-Herzegovina, Croatia, Slovenia, Macedonia, Somalia, Lebanon, Iraq, and Iran. Immigrants from these source countries can be viewed as refugees since most of them came to Sweden as asylum seekers

[3]Administrated by the unit of Human Geography at the University of Gothenburg. It comprises official register data provided by Statistics Sweden from the database Longitudinell Integrationsdatabas för Sjukförsäkrings- och Arbetsmarknadsstudier (LISA). It contains data on every individual, 16 years or older, registered in Sweden as of the 31st of December each year.

[4]Yugoslavia was founded after the 2nd World War, and was made up of six Balkan constituent federal units: Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Serbia, and Slovenia. The Yugoslav War led to the breakup of this federation by mid-1992, and only Serbia and Montenegro remained united (until 2006) under the name "Yugoslavia."

and were therefore part of the settlement program[5]. In total, full information on all variables for those 8 years (the year of their arrival plus the seven subsequent years) for 31,508 individual refugees is available and was included in the analysis.

METHODS

There are two main analyses. First, we examine whether the tendency of refugees to relocate to (or stay in) different labor markets is related to their levels of education. In the second stage, we examine the impact of those relocations on income growth after migration. We treat a movement from one labor market to another as our unit of analysis. Since municipalities cannot serve as an accurate measure of labor market opportunities, we use Statistic Sweden's definition[6] of local labor markets, which includes 112 local labor markets in Sweden. In order to do so, we harmonized the labor markets to the 1990 definition[7].

Movement Models—Selectivity in Internal Migration

In the first stage, moving between two labor markets that differ in their structures of opportunities is the dependent variable (did not move or moved to a similar-opportunities market; moved to a wider-opportunities market; moved to a narrower-opportunities market). Following findings by Bevelander and Lundh (2007) and Hedberg and Tammaru (2010) on the factors affecting the economic success of refugees in Sweden, the labor market's structure of opportunities is calculated as an index of three variables: size of the labor market (number of people living there), mean earnings in the market, and the percentage of those who have a BA (or a higher degree). We re-calculated the index for each one of the 11 years examined in this study (1990–2000). Each of the variables included in the index was then standardized to a 1–100 scale. The final index is the mean of these three standardized variables (with a mean of 84.3, and s.d. of 16.1). The inter-item reliability coefficient of the opportunities structure index ranges from 0.63 to 0.88 during 1990–2000.

In this stage of the analyses, we use discrete-time survival analysis [complementary log-log (c-log-log) models] to examine the internal migration patterns of refugees during their first 8 years in Sweden. We assess whether, in line with our expectations derived from the migrants' self-selection logic, highly skilled refugees were more likely to migrate to markets with broader structures of opportunities and low-skilled immigrants to more sheltered labor markets, as opposed to remaining in their initially assigned markets. The omitted category in this model is staying in the assigned labor market (or internal migration to a different labor market that has the same level of opportunities structure). We examine the risks of two events. The first is internal migration to a market with a broader structure of opportunities (defined as a difference of more than 10 units between the two markets on the scale of 1–100 of the index, which equals to more than 0.6 s.d. of the index). The second event is internal migration to a more sheltered labor market (again, more than a 10-unit difference between the two markets on the index).

Income Models—the Economic Consequences of Internal Migration

In the second stage of the analyses, we checked the consequences of the internal move (or lack of) to the main labor-market outcome—earnings. We estimate the impact of the above migration decisions on refugees' income growth, using individual fixed-effect models. These models follow a method offered by Bratsberg and Raaum (2011) to assess the effect of citizenship acquisition on earning (see also Helgertz et al., 2014). The model is represented by the following equation:

$$ln\left(y_{it}\right) = a_0 M_{it} + a_1 M_{it}\left(X_{it} - X_{iM}\right) + a_2 D_i X_{it} + \boldsymbol{\gamma}\mathbf{X}_{it} + \delta\mathbf{Z}_{it} + \varepsilon_i + u_{it}$$

The dependent variable—ln(y_{it})—is measured as the natural logarithm of an individual's (i) labor earnings in a given year (t)[8] (adjusted by using the Consumer Price Index—KPI).

We focus on four main parameters:

(1) $\mathbf{X}_{it}$ represents the individual's time at destination (i.e., Years Since Migration—YSM), measured as a sequence of yearly dummy variables, and $\boldsymbol{\gamma}$ is the estimated coefficients vector of refugees' annual *assimilation rates in Sweden*. Based on the standard immigrants' assimilation model (e.g., Chiswick, 1978), immigrants are expected to experience earnings growth above and beyond that of natives of similar attributes, particularly during their first years at the host country, regardless whether they move within that country or not.

(2) In order to test if those refugees who chose to move within Sweden are *positively self-selected,* a separate effect from YSM is estimated for those who, at some point during the time of observations, move. This is the effect (a_2) of the interaction between YSM and a dummy variable (Di) that indicates whether the individual moves at some point. It indicates whether those who move enjoyed a higher assimilation rate already *prior to their move* compared to those who chose not to move.

(3) The $\boldsymbol{M}_{it}$ are two time-varying dummy variables—one for a move to a market with a wider structure of opportunities, and the other for a move to a narrower structure—with the value "1" for individuals who moved within Sweden after their initial placement and the value "0" otherwise. It is designed to test our expectation that movers improve their economic standing—as predicted by the economic

[5]Individuals were omitted from our sample if they died or emigrated from Sweden during the 7-year period following their arrival.

[6]https://www.scb.se/hitta-statistik/statistik-efter-amne/arbetsmarknad/sysselsattning-forvarvsarbete-och-arbetstider/registerbaserad-arbetsmarknadsstatistik-rams/produktrelaterat/Fordjupad-information/lokala-arbetsmarknader-la/forteckning-over-lokala-arbetsmarknader/

[7]Because there were changes in the definitions of municipalities in Sweden over the years, we first harmonized the municipality coding to fit the 1990 definition and then modified the classification of the labor markets as defined by SCB in 1990. SCB's definition of labor markets is based on the factual patterns of work-related commuting within and between municipalities.

[8]A significant share of refugees does not have positive earnings in each one of the years studied. Therefore, we assign the value of '1' to these cases in order to be able to include them in the models (where their earnings are equal to ln(1) = 0).

framework of migration (whether international or internal). The first movement (of both types) is the only one to be considered[9]. These two variables capture whether the effect of moving within Sweden is a *one-time shift in earnings* (i.e., an earnings premium). Therefore a_0 represents a shift effect of moving, which is assumed to be constant in all years following the internal migration.

(4) We also allow for a *differential earnings slope after internal migration*, estimated by the parameter a_1, using a variable measuring the effect of years since internal migration. This parameter is derived from a continuous variable, constructed as $X_{it} - X_{iM}$, representing the difference between the individual's time in Sweden (YSM = (X_{it})) and the number of years since internal migration (X_{iM}). A positive a_1 indicates an earnings growth subsequent to the move that is steeper above and beyond the two shift coefficients (that of YSM (X_{it}) $-\boldsymbol{\gamma}$, *and that of* $M_{it} - a_0$), whereas a negative a_1 coefficient implies that the yearly earnings growth prior to the move is greater than after it.

$\mathbf{Z}_{it}$ is a vector of time-varying control variables including education, marital status, and lag-labor market characteristics. Finally, ε_i represents time-constant unobserved characteristics at the individual level, as estimated by using fixed-effect OLS regression, and u_{it} is the time-varying unobservable variance.

Clearly, our model cannot separate all variables that lead to earnings growth of stayers and movers—other than the above estimated four parameters and those parameters associated with the control variables ($\mathbf{Z}_{it}$) described here. For example, it is quite possible that earnings growth of some movers that chose to change their localities due to social rather than economic motives resulted from newly established networks in the localities they move to, and not necessarily because of better earnings offers there. However, this estimation problem is not crucial if we assume that our fixed-effect model controls for time-invariant unmeasured attributes such as preferences for living in localities with certain non-economic characteristics.

VARIABLES

The estimated models include the following variables:

Education–A sequence of four dummy variables for the highest-level education completed (elementary[10], secondary, post-secondary non-academic, and academic) in which the omitted category is completing secondary education. This is the one focal variable in the first stage of the analyses, as we are interested in evaluating whether refugees with higher abilities and skills (as captured by their education) are more prone to moving within Sweden.

Year–The population includes immigrants arriving during 1990–1993, followed for eight subsequent years starting at their year of arrival. In the first stage of the analysis, we include a control for the year of the observation (year = 1990, 2000)[11].

Age–Immigrant's age on December 31 of each year. As we restricted the age at migration to 25–55, the age of refugees ranges from 25 to 62. In the first stage of the analysis, we also include indicators for *gender* (female = 1), *marital status* (married = 1), *lag employment status* (employed = 1), and *country of origin* (the omitted country is Yugoslavia). In the second stage, we divided the sample by country of birth and gender in order to be able to control for time-invariant variables in the fixed-effect models, and control for marital status with a dummy.

Finally, we incorporate labor market-level variables in the individual-level models, in order to control for market-level variables that might affect people's decision whether to relocate[12].

Lag labor market unemployment level–This variable represents the mean unemployment days for which unemployment benefits have been paid in the labor market 1 year prior to the move (at t-1) (calculated as the total days of unemployment in the labor market divided by the number of individuals in the labor market). This variable serves as a proxy for the employment levels in the labor market in which immigrants live before deciding whether or not to move.

Lag immigrant-groups representation in the labor market–This variable indicates the concentration level of each one of the ethnic groups studied in the labor market 1 year prior to the immigrant's move out of it (at year t-1). It is (the natural logarithm of) the ratio of the percentage of each ethnic group in the specific labor market divided by the percentage of the same ethnic group in the entire Swedish population. The variable ranges from −5 to +5, where a positive number indicates an overrepresentation of the ethnic group in the local labor market (i.e., the proportion of the specific ethnic group is higher than their general share of the population), and a negative number an underrepresentation in that labor market.

In the first stage, we also control for *LAG opportunity index level.* This controls for the opportunity level in the first place in which individuals reside.

RESULTS

Descriptive Statistics

Table 1A presents the descriptive statistics of the individuals included in the refugee population, and **Table 1B** presents the same descriptive statistics by type of internal migration in Sweden (averages at the individual level for all years).

Starting with **Table 1A**, it can be seen that the mean age of immigrant refugees is 37.6 years, and more than half of them are men and married. Most refugees have completed secondary education and over 25 percent have higher education. About half of this cohort of refugees is composed of refugees from war zones in the Balkans (mainly due to the Yugoslav War, also termed the Third Balkan War). About 33 percent of them are from Bosnia-Herzegovina, and almost 15 percent of them from other

[9]If an individual moves a second time, then the subsequent move is censored.

[10]Elementary education is defined as up to 9 years.

[11]In the fixed effects models we did not include a variable of years as it highly correlates with our variables that assess the selection to and the premium from internal migration. This is mainly due to the relatively small numbers of years of migration and the time span in which we are tracking these immigrants.

[12]This procedure might, of course, lower the magnitude of the standard errors associated with the estimated coefficients and, consequently, lead to Type-I statistical errors. However, this is not a real problem in studies such as ours in which the entire population is used.

Table 1A | Descriptive statistics of all refugees 1 year after they immigrated to Sweden between 1990 and 1993, at the ages of 25–55, their labor market characteristics, and their migration decision.

Variable	Mean *(SD—between)*
Age	37.64
	7.19
Female	0.44
Married	0.63
YSM	3.44
	0.62
Education level	
Elementary	25.94
Secondary	45.11
Post-secondary non-academic	15.95
BA+	25.67
Birthplace	
Yugoslavia	14.61
Croatia	1.02
Slovenia	0.10
Bosnia-Herzegovina	32.83
Macedonia	0.55
Somalia	5.86
Lebanon	8.13
Iraq	18.12
Iran	18.78
Migration year	
1990	15.63
1991	16.31
1992	15.82
1993	52.25
Labor market variables	
Lag Mean LM unemployment days	22.30
	3.14
Lag immigrants representation	0.17
	0.53
LM structures of opportunities	84.33
	16.09
Internal migration structure of opportunities	
Stay	64.97
Moved to wider structure of opportunity	27.39
Moved to narrower structure of opportunity	7.64
Employed	0.31
Ln earnings (*Individuals with positive earnings only)	10.75
	1.22
N of individuals-All	*31,506*
*N of observation- All (individual * year)*	*237,708*
N of individuals- with positive earnings	*23,585*
*N of observation-with positive earnings (individual * year)*	*85,585*

Table 1B | Descriptive statistics of the refugees and their labor markets 1 year after migration to Sweden by internal migration type, refugees that migrated to Sweden between 1990 and 1993, at the ages of 25–55.

Variable	Stayed	Moved to a wider structure	Moved to a narrower structure
Age	37.91	37.32	36.27
	7.29	*6.96*	*6.87*
Female	0.45	0.42	0.40
Married	0.62	0.63	0.64
Education level			
Elementary	26.04	26.1	24.51
Secondary	44.14	46.31	49.11
Post-secondary non-academic	16.32	15.56	14.25
BA+	26.61	24.34	22.52
Birthplace			
Yugoslavia	16.12	10.62	16.04
Croatia	1.11	0.86	0.83
Slovenia	0.13	0.05	0.08
Bosnia-Herzegovina	29.8	37.41	42.09
Macedonia	0.64	0.35	0.46
Somalia	4.58	8.68	6.65
Lebanon	8.51	7.33	7.73
Iraq	19.44	16.34	13.38
Iran	19.67	18.36	12.75
Immigration year			
1990	15.38	17.05	12.59
1991	15.67	18.04	15.54
1992	17.86	12.07	11.88
1993	51.09	52.83	59.99
Labor market variables at the first year after migration (YSM = 0)			
Mean LM unemployment days	21.46	23.22	23.21
	6.46	*7.45*	*6.74*
(Ln) immigrants representation	0.15	0.19	0.00
	0.60	*0.53*	*0.67*
LM structures of opportunities	87.25	57.43	85.94
	15.80	*21.54*	*13.02*
Labor market outcome at first year (YSM = 0)			
Employed	0.07	0.03	0.03
(Ln) income from work and self-employment	9.76	9.06	9.41
	1.46	*1.58*	*1.55*
Labor market outcome after 7 years (YSM = 7)			
Employed	0.56	0.53	0.66
(Ln) income from work and self-employment	11.34	11.27	11.51
	1.29	*1.32*	*1.26*
N of individuals-All	*20,468*	*8,631*	*2,407*
*N of observation- All (individual * year)*	*158,174*	*63,924*	*15,610*
N of individuals- with positive earnings	*15,687*	*6,196*	*1,702*
*N of observation-with positive earnings (individual * year)*	*59,537*	*20,314*	*5,734*

regions of the former Yugoslavia. The second half of this cohort arrived almost entirely from the Middle East. Among them, the two largest groups, amounting to 18 percent each, are from Iraq and Iran, while a smaller group originated in Lebanon (about 8 percent). Finally, <6 percent come from Somalia. Most of the

refugees belonging to the 1990–1993 cohort arrived in 1993 as a result of the escalation of the Third Balkan War.

There are three main labor market variables we are interested in: the index of labor market opportunities structure, average days of unemployment, and own ethnic group representation. Most importantly, the mean index of labor market opportunities is 84.33 with a standard deviation of 16.9. The average paid days of unemployment across labor markets is 22, and the average level of immigrants' representation in the labor market in all years is 0.17, which indicates a small overrepresentation of immigrants in the markets in which they were settled.

Finally, turning the focus to internal migration patterns, ∼27 percent of the refugees moved to labor markets with a wider structure of opportunities, and 7.6 percent moved to narrower-structure markets. The remaining two-thirds of this refugee cohort chose to stay in their assigned locations (or to move to another, but with similar opportunities level).

Table 1B presents the same descriptive statistics presented in **Table 1A**, but separately for the type of internal migration based on labor market structure of opportunities. In general, we can see that refugees moving to other destinations tend to be men and somewhat younger than stayers. It also seems that those who stay in their assigned locations have higher levels of education (academic and post-secondary non-academic). The ethnic distribution of those who move differs from that of the general population (as can be seen from **Table 1A**). For example, larger proportions of refugees from the former Yugoslavia constitute the stayers in the labor markets where they were placed, as well as refugees from Iran and Iraq.

The middle part of **Table 1B** presents the characteristics of the labor markets in which the refugees were settled in their first year in Sweden. Comparing the labor market characteristics of immigrants that stay to those that move away from the labor markets in which they were placed right after migrating to Sweden allows us to examine whether those refugees who chose to relocate were placed in labor markets with distinct characteristics. As can be seen, the opportunities index of the assigned labor markets is lower in the markets in which the movers were settled, and even more so in the assigned markets of those who moved to labor markets with more opportunities[13]. In addition, the ethnic representation levels of the labor markets of individuals that eventually moved to narrower structures of opportunities are lower than those of the two others[14]. Finally, the immigrants that eventually decided to move were initially assigned to labor markets with higher levels of unemployment.

The bottom part of **Table 1B** presents the labor market outcomes of individuals in their first year in Sweden and the same outcomes seven years later—after their final decision whether and where to migrate. At the individual level, it is clear that refugees who eventually decided to move from their initial assigned location have lower rates of employment and lower income from work in their first year in Sweden. Overall, as expected, the employment rates of refugees shortly after immigration are very low (<10 percent), but the employment rates of those who decide to move are even lower. An examination of the refugees' labor market outcomes 7 years after migration provides an interesting picture. While at the beginning of the period refugees moving to labor markets with narrower structures of opportunities show low levels of employment, after 7 years this group has the highest levels of employment (66 percent of them are employed), as compared to 56 percent of refugees that stayed in their initial locations and 53 percent of refugees that moved to markets with wider structures of opportunities.

Selectivity in Internal Migration

Table 2 presents the results of a discrete-time survival analysis [complementary log-log (c-log-log) models] examining the internal-migration patterns of refugees to a different labor market, based on different structures of opportunities, within the 8 years starting at their arrival in Sweden. The first model describes a movement of refugees from their initial assigned location to a location with a wider structure of opportunities. Similarly, the second model presents a movement to a labor market with a narrower structure of opportunities. Our main variable of interest is immigrants' education level. As can be seen from the first model, refugees with higher education levels (academic degree) are, as expected, more likely to move to labor markets with a wider structure of opportunities relative to individuals with secondary education, while their cohort fellows with lower education (elementary) do so less—when individual and labor market characteristics are controlled for. The second model shows that refugees with higher education (academic and post-secondary non-academic) are less likely to move to labor markets with a narrower opportunities structure relative to those with secondary education, while elementary-education refugees do so more[15].

Most of the control variables have the expected effects on the tendency to migrate internally within Sweden. Refugee men that are younger and were not employed in the previous year are more likely to migrate within Sweden. In addition, refugees that are not married tend more to migrate to both types of labor markets. Finally, there are significant ethnic differences in the internal migration patterns.

Some of the impacts of the labor market characteristics in the previous year on the probability of refugees' internal migration in Sweden are worth mentioning. First, as expected, high levels of unemployment in the labor market to which an individual was initially assigned encourage internal migration. Second, the structure of opportunities in the labor market in the year prior to migration has an opposite effect on each type of internal migration. An initial market with a

[13]Note that some of these differences are a result of ceiling and floor effects. In order for individuals to be classified as movers to markets with wider opportunities structures, they need to start at a market with a narrower structure of opportunities, and vice versa.

[14]It should be noted that these figures are based on differences in means only. However, the shapes of the concentration distributions of the three groups are different, and we discuss the possible impacts of the internal migration decisions on those shapes in the final section of the results.

[15]In general, we include the entire population of the 1990–1993 refugee cohort in all our estimated models. Thus, we are not referring to statistical significance issues in describing our results. However, the results tables indicate significance levels for those who are interested in treating the parameters presented as if they are estimated statistics.

Table 2 | Complementary log-log models of moving to labor markets with different structures of opportunities within 7 years in Sweden.

Variables	Moved to a wider	Moved to a narrower
YSM	0.881***	0.867***
	(0.015)	(0.025)
Age	0.992***	0.972***
	(0.002)	(0.003)
Female	0.958*	0.762***
	(0.024)	(0.032)
Year	0.873***	0.897***
	(0.014)	(0.023)
Elementary	0.910***	1.039
	(0.030)	(0.057)
Post-secondary non-academic	1.023	0.839***
	(0.040)	(0.055)
BA+	1.166***	0.912
	(0.041)	(0.053)
Marred	0.889***	0.883***
	(0.023)	(0.038)
Croatia	1.294**	0.765
	(0.168)	(0.177)
Slovenia	0.912	0.805
	(0.433)	(0.586)
Bosnia-Herzegovina	1.525***	1.515***
	(0.067)	(0.100)
Macedonia	0.899	0.702
	(0.182)	(0.217)
Somalia	2.212***	1.000
	(0.128)	(0.094)
Lebanon	0.987	0.748***
	(0.060)	(0.070)
Iraq	1.339***	0.577***
	(0.064)	(0.044)
Iran	1.328***	0.547***
	(0.065)	(0.043)
LAG employment	0.634***	0.728***
	(0.021)	(0.039)
LAG mean LM unemployment days	1.013***	1.028***
	(0.002)	(0.005)
LAG opportunity index level	0.954***	1.016***
	(0.000)	(0.001)
Lag Ln Immigrants Representation	0.850***	0.730***
	(0.014)	(0.023)
Constant	4.268***	0.025***
	(0.399)	(0.005)
*Observations (individual * year)*	*164,439*	*164,439*
Individuals	*31,450*	*31,450*
N_s	8,629	2,407
LI	−25,375	−11,820

*Robust s.e in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1.*
Refugees that migrated to Sweden between 1990 and 1993, at the ages of 25–55.

wider structure of opportunities is associated with lower levels of internal migration to markets with similar (wider) structures of opportunities, and the opposite is true when starting in low structures of opportunities. These findings are probably, at least in part, the results of ceiling and floor effects.

Finally, and as expected, labor market ethnic concentration has the same effect on the two indices. Higher levels of ethnic concentration in the labor markets in which refugees were initially placed are found to be associated with lower chances of moving to other labor markets, regardless of the markets' structure of opportunities.

The results presented to this point confirm our hypotheses, namely that (1) refugees with higher education levels are more likely to migrate to wider-opportunities labor markets in which they benefit from their relatively high skills; and (2) refugees with lower education levels are more likely to migrate to narrower-opportunities markets in which they benefit more from their relatively low skills. The remaining question is whether those refugees who do migrate are indeed compensated for their move. This question is examined next.

The Economic Consequences of Internal Migration

As noted above, economic theory holds that individuals who choose to move are expected to increase their employment probabilities and earnings. In order to try to assess the net effects of the internal migration decision, we track the refugees' income, before and after that migration takes place and then compare their income trajectories over time. This is done by using OLS fixed-effect models.

Table 3, shows estimates derived from individual fixed-effect earnings regression models—separately for refugee men and women. These models assess whether internal migration within Sweden is associated with positive effects on refugees' earnings and whether these positive effects can be interpreted in causal terms. The table displays the four parameters of interest: the first three represent the premiums gained (or lost) by refugees following their internal migration, while the fourth represents the self-selection effect on earnings (results of the full models are available upon request). First, it is possible that each type of internal migration has a constant effect on earnings subsequent to internal migration. Two parameters capture this effect, represented by "*move to more*" and "*move to less*" opportunities-structure markets. In addition, the parameter "*years after*" the internal move captures any additional annual income growth occurring after internal migration, where a positive coefficient indicates an annual premium after the internal move. Finally, a positive coefficient of "*years before*" the internal move indicates earnings growth enjoyed by individuals who eventually migrate occurring prior to the internal migration itself, implying that the individuals who decide to move are positively selected.

As can be seen from **Table 3**, all immigrant men and women have a higher total earnings growth after internal migration as compared to their own pre-move earnings and the earnings of non-movers (stayers). This positive and significant total effect is substantial.

For example, a look at immigrant men from Yugoslavia shows that, first, they are positively selected into internal migration within Sweden: those who eventually migrate have a steeper earnings growth by about 30 percent ($b = 0.263$) even before moving, as compared to those immigrant men from Yugoslavia

Table 3 | OLS individual fixed-effect estimates of the effects of internal migration on (ln) income from work and self-employment of refugees[(1)].

	Yugoslavia	Croatia and Slovenia	Bosnia-Herzegovina	Macedonia	Somalia	Lebanon	Iraq	Iran
Variables				**Men**				
Moved to more (constant premium)	−1.120***	−0.234	−0.443***	−0.847	−0.070	−0.449*	−0.875***	−0.332*
	(0.225)	(0.791)	(0.121)	(1.128)	(0.228)	(0.251)	(0.155)	(0.169)
Move to less (constant premium)	−0.196	−0.788	0.834***	3.208*	−0.443	0.530	0.684**	0.054
	(0.288)	(1.187)	(0.177)	(1.687)	(0.386)	(0.378)	(0.266)	(0.304)
Years after (slope premium)	0.588***	0.922***	1.197***	0.616***	0.545***	0.548***	0.721***	0.792***
	(0.020)	(0.074)	(0.021)	(0.086)	(0.033)	(0.026)	(0.016)	(0.018)
Years before (selection)	0.263***	0.213	−0.045**	−0.098	0.003	0.034	0.022	0.019
	(0.041)	(0.148)	(0.022)	(0.213)	(0.048)	(0.048)	(0.030)	(0.034)
*Observations (individual * year)*	18,449	1,330	39,894	833	8,650	11,725	28,640	23,562
Individuals	2,457	176	5,353	108	1,178	1,580	3,739	3,120
R-squared	0.191	0.343	0.423	0.219	0.088	0.079	0.154	0.168
rho	0.496	0.538	0.571	0.518	0.371	0.431	0.397	0.438
sigma_e	4.081	3.942	3.849	3.862	3.974	4.067	3.958	4.045
sigma_u	4.045	4.257	4.436	4.003	3.049	3.537	3.213	3.568
				Women				
Moved to more (constant premium)	−0.466**	−1.397*	−0.465***	−0.711	0.139	−0.689***	−0.241	−0.676***
	(0.224)	(0.840)	(0.121)	(1.375)	(0.236)	(0.249)	(0.209)	(0.175)
Move to less (constant premium)	0.298	−0.826	0.739***	0.501	0.368	−0.551	0.364	−0.036
	(0.320)	(1.384)	(0.184)	(1.789)	(0.428)	(0.403)	(0.349)	(0.319)
Years after (slope premium)	0.657***	0.922***	1.116***	0.500***	0.399***	0.376***	0.599***	0.692***
	(0.020)	(0.078)	(0.021)	(0.117)	(0.027)	(0.023)	(0.018)	(0.016)
Years before (selection)	0.128***	0.383***	−0.043*	0.506**	−0.058	−0.036	−0.032	0.083**
	(0.041)	(0.145)	(0.022)	(0.246)	(0.047)	(0.046)	(0.039)	(0.034)
*Observations (individual * year)*	16,170	1,343	37,457	494	5,101	7,347	15,317	21,396
Individuals	2,146	178	4,989	64	668	981	1,971	2,798
R-squared	0.220	0.308	0.401	0.215	0.095	0.073	0.147	0.166
rho	0.520	0.563	0.540	0.560	0.466	0.420	0.393	0.400
sigma_e	3.800	4.000	3.709	3.955	2.823	2.947	3.419	3.670
sigma_u	3.958	4.536	4.020	4.466	2.635	2.506	2.751	2.998

[(1)]*Other variables that are included in the model are YSM, education, age, married, and labor market-level variables (see "Variables" section). Standard errors in parentheses; ***p < 0.01, **p < 0.05, *p < 0.1.*

who stay. Second, while the migration itself distorts the earnings growth they had been experiencing prior to their move, their earnings after migrating are substantially higher. Those who moved to a market with a wider opportunities structure experience a reduction of about 206 percent ($b = -1.12$) in their earnings following that move (a shift effect). However, since their earnings growth is constantly increasing by about 80 percent per year after migration ($b = 0.588$), their earnings growth is expected to again be positive in <3 years after their move. Those who move to a narrower opportunities market do even better. They suffer a much smaller shift penalty, but enjoy the same annual rate of increase in their earnings as their counterparts who chose the markets with wider opportunities structures.

Clearly, the effects of internal migration on refugees' earnings growth are substantial. All movers, whether to wider- or narrower-opportunities markets, much accelerated (on average) the rate of their earnings growth. Several factors may explain these high premiums to internal migration. First, as indicated by the positive self-selection coefficients, the movers possess higher-than-average (mainly unobserved) earnings determinants. They belong to a relatively small group (about one-third of all refugees) that is, probably, extremely selective. Second, we estimate their rising earnings slope ("slope premium") based on the first 7 years after their move. Usually, the steepest rise in such premiums occurs during the initial period right after the move. Therefore, our estimated slope premiums are probably overestimated when the entire working lifetime of the refugees is considered. Finally, many of the movers did not work prior to their move (see **Table 2**). Consequently, the rise in the movers' earnings is expected to be higher (on average) than that among stayers.

Based on **Table 3**, we can conclude that most of those refugees, both men and women, that move to markets with wider structures of opportunities experience a negative shift in their earnings immediately after their migration. A few groups moving in a similar direction experience a positive shift in their earnings. When we look at the refugees that move to markets with fewer opportunities, the effects are reversed. Most of the male and

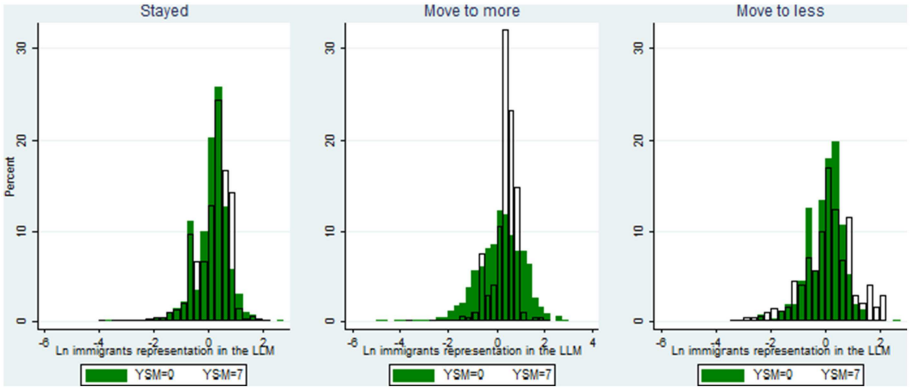

FIGURE 1 | Levels of ethnic concentration at the first and at the seventh year after migration to Sweden—by type of internal migration.

one female origin groups enjoy a positive shift in their earnings following such a move.

But more importantly, all groups enjoy a very steep rise in the rate of their earnings growth in subsequent years that offsets the shift penalties (or adds to the positive impacts) and substantially improves their earnings after the move as compared to their earnings before (and relative to stayers) within a few years[16].

SUMMARY AND CONCLUSIONS

The purpose of the present study has been to examine a very important issue involved in refugees'-integration policies. We studied the extent to which the economic theory of self-selection of immigrants to destinations based on their abilities applies not only to economic immigrants across countries, but to internal migration of refugees as well. The paper evaluates first whether highly skilled refugees, similarly to international economic migrants, tend to migrate within their destination country to labor markets with broader opportunity structures, while less capable individuals choose markets that are more sheltered. Second, the paper evaluates the extent to which such migration decisions improve the economic standing of refugees.

To do so, we use what can be described as a natural experiment, focusing on a refugee cohort that came to Sweden during a period when the "*Whole-Sweden*" policy was in effect. This policy was designed to reduce the concentration of refugees, mainly in the large cities, by randomly deploying asylum seekers to almost all municipalities within Sweden. After being assigned to an initial location, these refugees were given a choice whether to stay in their assigned location or move to another place within Sweden. This allows us to examine refugees' self-selection patterns within Sweden and the effects of those patterns on refugees' subsequent economic assimilation.

The results support our research hypotheses. In line with our expectations, we find that refugees' education levels are related to major differences in their destination choices. Highly skilled refugees are more likely to migrate to labor markets with wide structures of opportunities relative to less-skilled ones. In addition, we find that internal migration among refugee men and women in Sweden, whether to a wider or narrower market, is associated with a steeper rise in their annual earnings, thus making the move a rational decision that is very beneficial economically. This suggests that even among refugees, internal migration decisions are based also on economic maximization considerations.

However, as described in the theoretical section of this paper, there are also other motives for internal migration, among which the most important is the refugees' desire to live in an environment with a high representation of their own ethnic group. Clearly, such motives cannot be defined exclusively as "non-economic" because such a living environment allows refugees to create and strengthen their social networks and, consequently, to raise their employment and earnings opportunities. Indeed, some support for the mixed social-economic "networks motive" can be derived from the data. **Figure 1** presents the levels of concentration at the first year and 7 years after immigration to Sweden by type of internal migration. An ethnic concentration value of 0.0 indicates a level of ethnic concentration in local labor markets that is similar to the national ethnic concentration level, while positive (negative) values indicate ethnic concentration in local labor markets that are higher (lower) than that at the national level. As can be seen, refugees that do not end up moving from their initial locations were placed, from the beginning, in labor markets with members of their own ethnic group (values above zero imply that the percentage of the ethnic group in the local labor market exceeds their share of the entire population). That is, most of them were initially placed in localities in which their own ethnic group was overrepresented (as can be seen by a more skewed distribution in which the peak exceeds the value of zero). Seven years after their initial placement, the levels of their labor market concentration are somewhat even higher—as shown by the high peak around the value

[16]In addition to the division of the refugees studied into countries of origin, we grouped the refugees into two groups of regions of origin: the first includes refugees from Europe, the second—refugees arriving to Sweden from Africa and the Middle East. The results of the estimated earnings model under this categorization are appreciably the same as presented in **Table 3**, and available upon request.

1.0 in year 7. This higher level of ethnic concentration could be a result of internal movements of refugees of their own ethnic groups to the labor markets in which the refugees were initially placed.

Contrary to this group, immigrants that end up moving to labor markets with wider structures of opportunities lived upon their arrival in localities with more symmetrical concentration distributions, with a high share of them living in labor markets with an underrepresentation of members of their own ethnic group. However, after 7 years in Sweden, most of them are found in labor markets with higher levels of representation of their own groups. This trend resulted in a distribution with an even higher peak around the value 1.0 (a value representing concentration) than that of immigrants that initially were placed in high-concentration cities and stayed there.

Finally, immigrants who end up moving to labor markets with narrower structures of opportunities also belong to a quite symmetrical initial distribution in terms of their ethnic concentration, with a high share of them located in labor markets with overrepresentation of their co-ethnic refugees as compared to immigrants that moved to labor markets with wider structures of opportunities. After 7 years, some of them move to labor markets with even higher levels of ethnic concentration, while some, however, move to less ethnically concentrated labor markets—a trend that is unique to this group.

The selectivity in the patterns of internal migration of refugees has implications for dispersal policies. The main purpose of the Swedish dispersal policy was to ease the burden of the refugee flows on the large cities by lowering the levels of ethnic concentration of refugees in those cities. However, we show that the concentration equilibrium created by such a policy is unstable. Refugees who end up moving to different labor markets were initially placed in localities where their own ethnic group had lower levels of representation, relative to the markets in which those that stay were initially placed. This suggests that stayers, as well as movers, might prefer localities with a high share of their own ethnic group. Such preferences might result, not only from possible economic gains associated with it, but also due to the ethnic goods of living near their co-ethnic members (e.g., social well-being, ethnic identity).

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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Politics and Prejudice: How Political Discussion With Peers Is Related to Attitudes About Immigrants During Adolescence

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Research on prejudice has shown that with whom we surround ourselves matters for intergroup attitudes, but these studies have paid little attention to the content of those interactions. Studies on political socialization and deliberation have focused on the content of interaction by examining the transmission of norms as well as the direct consequences of political discussion on attitudes and behavior. However, this literature has not focused on prejudice as a potential consequence. In this study, we combine these approaches to examine if political discussions with peers during adolescence matter for prejudice. We rely on five waves of a Swedish panel of adolescents, ages 13–22. Results show an association between political discussion and prejudice over time, and that this relationship increases as adolescents grow older. Results also demonstrate that the effect of political discussions depends on the level of prejudice in one's peer network. Discussion with low prejudice friends is associated with lower levels of prejudice over time, while political discussion with high prejudice peers is not significantly related to attitudes.

Keywords: prejudice, longitudinal, anti-immigrant, adolescent, discussion, political

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INTRODUCTION

Often described as the "impressionable years" (Krosnick and Alwin, 1989), adolescence is the time when many social and political attitudes develop (Alwin and Krosnick, 1991; Rekker et al., 2015), including ethnic and racial prejudice (Coenders et al., 2008). Importantly, these attitudes are not formed and maintained in isolation. With whom we surround ourselves influences how attitudes develop, something that is especially true during the formative adolescence years (Berndt, 1979). In adolescence, attitudes become increasingly susceptible to social influences, as evidenced by a recent meta-study of age trends in ethnic and racial prejudice (Raabe and Beelmann, 2011). Findings suggest that while biological processes are important drivers of attitudinal development in young children, social factors are central to prejudicial attitudes among adolescents. In addition, twin studies (Hatemi et al., 2009; Orey and Park, 2012) show that although genetic influence play a role in adolescence, environmental factors are more important for the development of attitudes. Indeed, Orey and Park (2012) conclude that unique environments explain 82% of the variation in ethnocentrism leaving only 18% to inheritance. These studies lend credence to the notion that social influence is paramount for the development of prejudice.

A large body of research demonstrates that significant others such as parents and peers play an important part in this process (e.g., Sinclair et al., 2005; Hogg and Smith, 2007). Social influence

occurs as adolescents observe and interact with key figures in their immediate surrounding, some of which may be more "significant" than others. Indeed, studies show that adolescents' attitudes are particularly susceptible to peer influence (Berndt, 1979; Thijs et al., 2016), a relationship consistently observed in research on prejudicial attitudes (e.g., Poteat et al., 2007). Not only do friends tend to display similar levels of prejudice (Kiesner et al., 2003), socializing with prejudiced peers also increases negative out-group attitudes over the course of adolescence (Hjerm et al., 2018).

While we know from previous empirical research that individual attitudes are susceptible to social influence, especially during adolescence, there are still important gaps in our understanding of how such influences occur. In particular, we know little about *how* the ways we interact with other people influence prejudice, despite major theories' focus on the social context. According to social learning theory, attitudes are learned from observing other peoples' actions and the consequences of these actions (e.g., Bandura, 1977). Arguably, interpersonal interactions and communication are implicit in the account, however studies have not tested this empirically. The same can be said of studies based on intergroup contact theory (e.g., Pettigrew, 1998). According to this theory, contact with members of an out-group facilitates positive attitudes toward the out-group in question. The quality of intergroup contact is an important feature of the theory, but this is typically operationalized as the circumstances under which people have contact (e.g., friendship, acquaintanceship, or professional relationship) and not necessarily what the social interaction actually entails. Put differently, previous empirical research on social influence and prejudice has primarily focused on the impact of with *whom* we surround ourselves, either in terms of their ethnic and racial background (Pettigrew and Tropp, 2011; Hooghe et al., 2013) or in terms of their intergroup attitudes (Poteat et al., 2007; Mitchell, 2019). Instead, this article focuses explicitly on one form of social interaction: discussion. Specifically, we are interested in how political discussion among peers influences the development of prejudice during adolescence.

Despite the fact that neither focuses explicitly on prejudice, both the literatures on political socialization (McLeod, 2000; McDevitt, 2006) and on deliberative democracy (Fearon, 1998) recognize political discussion as important for attitudes and behavior. Therefore, we make use of these literatures to identify two reasons why political discussions could affect prejudice among adolescents. First, the act of discussion itself may engender the development of moral and civic values, making prejudice less likely; and, second, adolescents may be influenced by the content of discussion, which is partly determined by the attitudes of their significant others. The current study tests both of these hypotheses. Additionally, we also assess at which age, during the impressionable years, those discussions matter most.

To determine if political discussions influence the development of prejudicial attitudes during adolescence, we rely on a panel of Swedish adolescents aged 13–22. Collected annually for five waves, this longitudinal dataset contains questions about social interaction and communication and also includes the attitudes of respondents' parents and peers. With these data, we investigate: (1) the relationship between political discussions and anti-immigrant attitudes; (2) how the size of the association between political discussions and anti-immigrant attitudes changes with age; and (3) the interaction between political discussion and peers' attitudes in the development of anti-immigrant attitudes over time.

POLITICAL DISCUSSION AND PREJUDICE

Early theorizing on social influences suggests that interpersonal discussions can play an important part in the development of social and political attitudes (Deutsch and Gerard, 1955). Previous work on political discussions suggests two main ways that this type of interpersonal interaction can affect prejudice in adolescence. First, discussion may function as deliberation and second, discussion may function as a transmitter of attitudes from peers to the adolescent. While the latter implies an interaction between attitudes and discussions, the former suggests the possibility that the very act of discussing politics may have implications for the development of individual attitudes.

According to the literature on deliberative democracy (Bessette, 1980), democracy at its essence is deliberation, as opposed to voting or constitutional rights. By this account, any form of communication that induces reflection and that is not coercive is deliberation (Dryzek, 2000). To deliberate, or to "weigh the merits of competing arguments in discussions together" (Fishkin, 2011, p. 33), stimulates the participants' moral and intellectual qualities. Its interactive nature provides opportunities to consider issues from other peoples' vantage point, facilitating the development of emphatic concern and perspective-taking abilities (Fearon, 1998; Price et al., 2002). In this sense, discussions hold the potential to expand individuals' knowledge about the world and to contribute to the development of important civic and human values, which may also have consequences for the development of prejudice or its opposite.

Indeed, empirical research demonstrates that as people become better equipped to imagine how they would think and feel from another person's perspective, they also become less likely to hold prejudicial attitudes (Galinsky and Moskowitz, 2000; Nesdale et al., 2005; Butrus and Witenberg, 2013; Miklikowska, 2018). In line with this, studies have found a positive relationship between participation in political discussions and tolerant attitudes amongst adults. Studying political discussions at the workplace, Mutz and Mondak (2006) demonstrate a positive relationship between the frequency of political discussions and political tolerance. Being frequently exposed to different types of arguments both increased the workers' knowledge about and fostered appreciation for the rights of groups with which they personally disagreed. Similarly, Pattie and Johnston (2008) found that adults who often participate in political discussions are more likely to tolerate political views and lifestyles that are different from their own. Broockman and Kalla (2016) show that conversations that encourage perspective taking with regard to an outgroup can have a lasting effect on prejudice. Based on this research, we first test the hypothesis that:

H1: *The frequency of engaging in political discussions with friends is inversely related to anti-immigrant attitudes during adolescence.*

WHEN DOES POLITICAL DISCUSSION MATTER?

Although parents matter for adolescents' levels of prejudice, parents' social influence decreases over the course of the formative years (e.g., McLeod and Shah, 2009). This is partly because adolescents tend to spend less time with their parents as they grow older (Larson et al., 1996) and partly because they confide less in their parents (Keijsers et al., 2009). Quintelier (2015) shows that peers are more important than parents and school in terms of political participation in late adolescence. Similarly, Gotlieb et al. (2015) demonstrate that, in late adolescence, the direct influence of socializing agents and background characteristics on political behavior diminishes compared to the effect of communication with peers.

Not only does the impact of socialization change with increasing age, but so do adolescents' capacity for more nuanced discussions and ability to absorb such discussions. In the 1960s, Adelson and O'Neil (1966) interviewed adolescents in various age groups and concluded that older adolescents are more susceptible to more complex political discussions where political judgments are based on philosophical ideas. Moreover, older children are in general more affected by communication than younger children in terms of political socialization (Eveland et al., 1998), which likely is due to increasing cognitive maturation (e.g., Luna et al., 2004). Thus, political discussion with peers becomes increasingly important for two reasons. First, the relative importance of peers as agents of influence increases over time, and second, the capacity of adolescents to engage in and absorb nuanced discussion increases with age. We contend that political discussions should have similar consequences for prejudice. Thus, we hypothesize:

H2*: The relationship between political discussions with friends and anti-immigrant attitudes increases with age.*

POLITICAL DISCUSSION AND PEER PREJUDICE

While our first two hypotheses posit how and when political discussions can reduce negative outgroup attitudes, we also have strong reasons to expect this effect to be dependent on norms or attitudes of the discussants. The social aspect of attitude formation implies that individuals tend to adjust their views and perceptions to attitudes held by people in their immediate surroundings (Bandura, 1977; Crandall et al., 2002). Discussions, in this context, become important primarily as a forum for the transmission of attitudes. This is a central theme in political socialization research, which consistently have demonstrated that communication and discussion are critical for the transmission of norms and values (e.g., McLeod, 2000, McDevitt, 2006). Political socialization is the process by which individuals become civic-oriented participants in liberal democracy, and studies show that communication is an important part of this process, including communication via mass-media (Sears and Valentino, 1997), within families (Niemi and Jennings, 1991), between peers (Quintelier, 2015) and within schools (Castillo et al., 2015).

As for political discussion specifically, studies on parent-child similarity find that the intergenerational transmission of attitudes strongly depend on the degree of political discussion in the family (Meeusen, 2014; Hooghe and Boonen, 2015). In families that frequently discuss social and political issues, children generally resemble their parents more than in families where political discussions are rare (Jennings et al., 2009). This relationship also applies to the transmission of prejudicial attitudes (Meeusen and Dhont, 2015). Experimental studies suggest that schoolchildren can become less prejudiced after being faced with alternative perspectives via discussion with others (Aboud and Doyle, 1996; Aboud and Fenwick, 1999). Further, the literature on group polarization demonstrates that discussion with others may push ingoing attitudes toward extreme positions (Myers and Lamm, 1976; Isenberg, 1986; Binder et al., 2009). Group discussion tends to exaggerate the discussants' preferences, so that the average post-discussion position of the group is more extreme, in that it deviates more from neutrality than the average pre-discussion position (Moscovici and Zavalloni, 1969). The shift occurs in the direction of the initial attitudes, which in the context of anti-immigrant attitudes suggests that groups that initially feel some hesitation toward immigrants, via discussion, will develop even more negative attitudes (and vice versa) (Myers and Bishop, 1970).

Despite this scholarship, there is no unified theoretical framework to explain transmission of attitudes via political discussion. Yet, other scholarship provides guidance in understanding how groups exert influence via discussion. In an early account, Deutsch and Gerard (1955), identify two modes of influences which have been formative to the literature on social influences (Turner, 1991). Normative social influence, first, occurs as people align with other's preferences to gain social rewards and avoid social sanctions (Deutsch and Gerard, 1955; Kaplan and Miller, 1987). The desires to be accepted and liked by the group and simultaneously avoid sanctioning, drive the tendency to conform to other group members' expectations. Informational influence, on the other hand, occurs as group members compare their views and adjust their preferences based on a desire to be correct (Asch, 1956; Price et al., 2006). Information provided by other members is read as evidence about reality (Deutsch and Gerard, 1955) and attitudes shift in response to arguments put forward by group members (Burnstein and Vinokur, 1977).

While both informational and normative accounts attribute attitudinal shifts primarily to external constraints (sanctions/rewards + argument quality), a third approach emphasizes the role of internalized group norms associated with valued social identities. According to work that draws on social identity theory (Tajfel and Turner, 1979) and group norm theory (Sherif and Sherif, 1953), individuals align their attitudes and behavior with that of their friends to connect socially with the group (Crandall et al., 2002; Hogg and Smith, 2007). This occurs via referent informational influence (Turner, 1981;

Abrams and Hogg, 1990) a process where people confirm their in-group membership by internalizing the perceived group norm associated with specific social identities. The process unfolds in three steps: (1) people categorize themselves as belonging to distinctive social group (-s); (2) they form an understanding of the in-group norm; and (3) enact their understood role as group members by conforming to this norm (Abrams and Hogg, 1990). Discussions primarily contribute to the second step, as the content of valued social identities and group norms takes shape in intragroup and intergroup interactions. Thus, although referent informational influence primarily is an internal process, people must have an understanding of the norm. Hogg and Smith (2007, p. 98) explain: "Although people have a general idea of what is normative, they look to others for confirmation of what is situationally normative—they use the behavior and expressed attitudes of others to determine situationally relevant ingroup normative attitudes (p. 98)." In sum, these different accounts direct attention to the content of discussions. They suggest that what is being said, due to the attitudes of the in-group/fellow discussants, will influence how (i.e., in what direction) the attitudes develop, while the degree of discussions will impact to what extent it occurs.

Thus, we test a third and final hypothesis:

***H3**: The relationship between political discussions with friends and anti-immigrant sentiment depends on friends' level of prejudice.*

DATA AND METHOD

We use data from the Youth and Society dataset (Amnå et al., 2010), a Swedish longitudinal panel that consists of five cohorts. Given our focus on the formative years, we rely on a sub-sample of the data covering only the two youngest cohorts, aged 13 ($M = 13.41$, $SD = 0.54$) and 16 ($M = 16.56$, $SD = 0.62$) at time 1 (T1). The initial sampling was based on schools (13 junior high schools and high schools), selected to be socially and ethnically representative. Cohort 1 respondents were surveyed on a yearly basis for all 5 years, 3 years while in compulsory junior high school and 2 years while in non-compulsory high school. Respondents in cohort 2 were surveyed four times over the 5-year period, 3 years while in high school and 1 year after they had left school. Cohort 2 respondents did not participate at time 4 (T4). Data collection occurred between 2010 and 2014 in a mid-sized Swedish city, where the unemployment rate, average income level, and the relative size of the immigrant population are comparable to national averages.

Response rates at T1 were 94% in cohort 1 ($n = 904$) and 85% in cohort 2 ($n = 892$). Attrition rates are not trivial (23% over five waves for cohort 1 and 52% over four waves for cohort 2), but comparable to other longitudinal studies on adolescents (Stearns et al., 2009; Dejaeghere et al., 2012). The largest drop in participation for cohort 2 occurs between T3 and T5 (38%), which coincides with its graduation from high school. Importantly, attrition is not significantly related to any variables of interest. Mean scores in prejudice at T1 for respondents who participated at T5 are no different from mean scores at T1 for those that did not participate at T5 ($M = 2.20$, SE $= 0.023$; $M = 2.26$, SE $= 0.028$). Moreover, we run all models in the analysis only on respondents present at T5 ($n = 850$). These analyses, available upon request, confirm the findings from the full sample.

Dependent Variable

We operationalize prejudice by measuring adolescents' attitudes toward immigrants. While prejudice is a broader construct that can mean negative attitudes toward a variety of out-groups (based on gender, race, age, sexual orientation, disability, religion, or nativity), we focus specifically on anti-immigrant attitudes. In the European context, immigration is highly salient as it is the main engine of increasing diversity on the continent. Further, "immigrants" are the most common out-group in European studies of prejudice, a literature to which we aim to contribute. We measure anti-immigrant attitudes using an index based on three items in the *Youth and Society* dataset. These are: "Immigrants often come here just to take advantage of welfare in Sweden"; "Immigrants often take jobs from people who are born in Sweden"; and "It happens too often that immigrants have customs and traditions that not fit into Swedish society." Similar items are available in European Social Survey (ESS 2002-2016) and have been used to measure anti-immigrant attitudes in past research (e.g., Schneider, 2008; Hjerm, 2009). At each wave, respondents reported to what extent each of the three statements corresponds to their own position by marking their answer on four-point scales, ranging from 1 indicating "Doesn't apply at all" to 4 indicating "Applies very well." We use row means to generate a dependent variable that varies between 1 and 4, with higher scores indicating higher levels of anti-immigrant attitudes. Over the five waves, the Cronbach's alpha varies between 0.75 and 0.81, indicating internal reliability. Also, previous research that uses these data tested for metric invariance, noting that the items capture the same underlying phenomena across waves (Hjerm et al., 2018). See **Table A1** for descriptive statistics.

Independent Variable

We use two items to capture political discussion. Both begin with the question: "How often does it happen that you and your friends talk about the following things?" and capture the extent to which respondent discuss (1) "what you have heard on the news about what is going on in Sweden and around the world" and (2) politics or societal issues. Four responses were available for both questions, ranging from 1 indicating "Very often" to 4 indicating "Never." We reversed the scale and combined the two items using the mean item score. Thus, the measure of political discussions varies between 1 and 4, with higher scores indicating more political discussions.

Moderators and Main Controls

To test hypothesis 2 and 3, we require information about the respondents' age and level of prejudice among their peers. The respondents' age is provided in the dataset, but to facilitate interpretation of the results we center the age variable on its grand mean. This step ensures that "zero" corresponds to an actual observed value (now the sample's average age). Friends' attitudes are facilitated by peer nominations. At each wave, adolescents were asked to identify up to eight best friends. 94% of the

adolescents nominated at least one friend at T1 and 74% at T5. In most cases, adolescents nominated friends who were already part of the sample. If nominated friends were not part of the original study, they were snowballed into the sample and asked the same questions as the original target group. Response rates in the snowball sample were 57% ($n = 249$) at T1 and 68% ($n = 967$) at T5. Friends' prejudice is captured by the same measure as the dependent variable. Based on the friends' prejudice scores, we calculate the average level of "anti-immigrant attitudes" among nominated friends for each respondent, at each wave, producing a time-variant independent variable. As our main independent variable asks about discussions with friends in general and our measure of friends' prejudice is based on nominated friends, there may be some discrepancies in whom respondents think of when answering the questions. Still, we have no theoretical or practical reason to assume that the adolescents have different friends in mind.

Besides age and friends' prejudice, we also control for own interest in politics. We use two questions in the dataset to generate an index: "How interested are you in politics?" and "How interested are you in what is going on in society?" The scale for both item ranges between 1 indicating "very interested" and 5 indicating "totally uninterested." Before averaging the item scores we reverse the scale so that higher numbers denote more interest. We also run our models with a set of additional controls, including gender, time-variant indicators of social isolation, other discussions with peers, political discussions with parents as well as indicators of parents' prejudice and educational level. We present these in more detail in **Table A1**.

Analytical Approach

To test our hypotheses about political discussion on anti-immigrant attitudes, we analyze data with mixed, multilevel repeated measurement models. These are hierarchical models, with time nested in individuals. This approach considers different starting values and different trajectories over time, thereby controlling for previous time points and, more importantly, starting points. The generic model looks like this:

$$Y_{ti} = \beta + \beta X_i + X_{ti}\,(\beta + u_{i1}) + u_{io} + e_{ti}$$

Y_{ti} is the tth response for ith subject. The β's are the beta-coefficients, including an intercept. X_i is a time invariant variable and X_{ti} is a time variant variable. The u's are the random effects for each i, u_0 being the random intercept and u_1 a random slope. e_{ti} is the residual variance at level 1.

We specify a first order autoregressive covariance structure for the within-individual part of the model. This means that we expect that two adjacent time points are more highly correlated than two non-adjacent time points, but that the correlation between T1 and T2 is the same as between T4 and T5. This error structure generates the best model fit[1].

[1]While AIC slightly favors a second order autoregressive structure (9495.919 vs. 9492.361), we rely on BIC (9554.526 vs. 9557.481) which is more conservative in how it penalizes complex models. As a robustness check, we ran all models with a second order error structure and the results are the same. These results are available from the authors upon request.

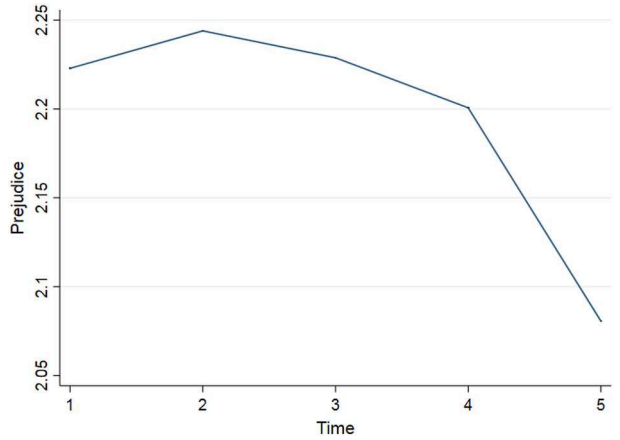

FIGURE 1 | Average levels of prejudice T1-T5.

It is important to know whether within-individual change or between-individual differences are responsible for the relationships between our dependent variable and key independent variables. To do this, we create two new orthogonal variables from each independent variable.

To capture between-individual effects for independent variables, we use all rounds to create an average for each person. Then, we subtract this variable from the sample grand mean. The resulting variable is the difference between the respondent's average value over all rounds and all respondents' average value. To capture within-individual effects for independent variables, we subtract a respondent's raw score for each time point from the respondent's mean score across all time points. Included together in the analysis, these two variables enable us to separate between-individual effects from within-individual effects. Without this transformation, coefficients would merely represent the average effect of within-individual and between-individual differences. Therefore, we do this for all time-variant covariates except age.

RESULTS

As illustrated in **Figure 1**, the average trend in anti-immigrant attitudes is curvilinear in shape. Attitudes toward immigrants are most negative at T2 and T3 and most positive at T5. **Figure 2** shows that our main independent variable, political discussion with peers, increases almost linearly over time as respondents get older[2].

Table 1 reports results from repeated measurement models. Model 0 displays the effect of time as dummies. The random part of the model reveals between-person differences both in initial levels of anti-immigrant attitudes and in the rate of change. There is significant variation around the effect of time, which suggests adolescents differ in how their attitudes develop over

[2]Cohort two did not participate at T4. For reasons of clarity we imputed the average of T3 and T5 at T4 for cohort 2 in **Figures 1**, **2**. No such imputation is included in any of the analyses.

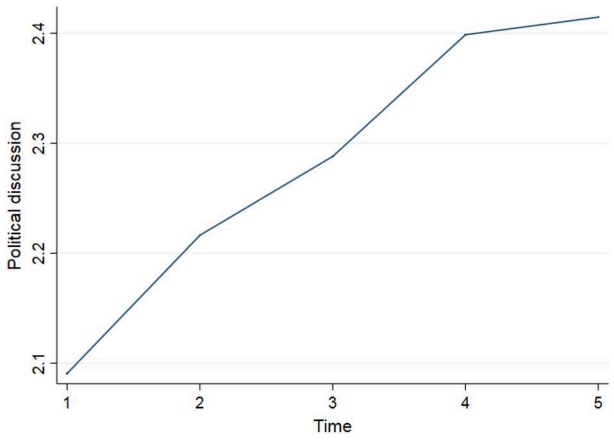

FIGURE 2 | Average levels of political discussion T1-T5.

the five waves. Rho tells us that the correlation between any two adjacent time-points is 0.27, i.e., when including random slope and intercept.

Model 1 tests our first hypothesis that the frequency of engaging in political discussions with friends is inversely related to anti-immigrant attitudes. Based on literature linking political discussions to the development of civic and moral virtues, including individuals' perspective-taking ability (Fearon, 1998), we expect adolescents who frequently discuss politics with their friends to be less likely to hold anti-immigrant attitudes. Relatedly, we expect a relationship between within-person changes in the frequency of political discussion and within-person changes in anti-immigrant attitudes. Results largely support H1. There is a significant negative between-person effect of political discussions on prejudice ($b = -0.26$ SE $= 0.03$). A one-unit increase in political discussions corresponds to quarter of a unit decrease in anti-immigrant attitudes, indicating that those who frequently engage in political discussion with friends are less prejudiced than adolescents who do not. Within-person changes in discussion also make adolescents slightly less prone to hold anti-immigrant attitudes ($b = -0.05$ SE$= 0.02$)[3]. However, this coefficient is small, suggesting that discussion primarily explains between-adolescent differences in prejudice.

In model 2, we add controls, which does not change our findings. Variation in friends' prejudice, own political interest, and age partly account for the between-person effect of discussion; nevertheless, the hypothesized relationship remains robust. Friends' prejudice relates to the level and the development of anti-immigrant attitudes in expected ways. Adolescents who socialize with friends who are high in prejudice are also more likely to express such attitudes ($b = 0.63$ SE $= 0.04$) and fluctuations in friends' attitudes predict within-person changes in anti-immigrant attitudes ($b = 0.20$ SE $= 0.03$). Both of these results are consistent with previous research (Hjerm et al., 2018; Miklikowska et al., 2019). Thus, friends are important agents of social influence in regards to both the level of prejudice and how these attitudes develop over time. One's own political interest is negatively related both to between-person differences ($b = -0.07$ SE $= 0.01$) and to within-person changes in anti-immigrant attitudes ($b = -0.02$ SE $= 0.01$). The positive effect of age implies that when we account for the other controls, including the general development over time, adolescents become slightly more prejudiced as they grow older.

In summary, results from models 1 and 2 largely support H1. In robustness checks, we control for additional covariates (see appendix **Table A2** for full model). These models show that the within-person effect of political discussions cannot be separated either from the effect of (1) within-person fluctuations in peer discussions on other topics or from (2) within-person fluctuations in political discussions with parents. Although these controls emerge as unrelated to anti-immigrant attitudes, when modeled together with own political interest, they still cancel out the significant effect of within-person changes in political discussions. It is debatable whether it is reasonable to expect an effect of political discussion beyond fluctuations in these closely interrelated features. Still, future research should attempt to disentangle their independent effects and/or determine how they may work in concert to influence prejudice in adolescence. Importantly, the between-person effect of political discussions is stable in all models, including when controlling for different measures of social isolation (popularity in terms of friendship nominations, number of reciprocated friendship nominations[4], and feeling of loneliness in the class), discussions with friends on other topics (movies, weekend activities, school, the environment, social media and games), political discussions with parents, parents' education as well as parents' attitudes toward immigrants.

To test hypothesis 2, we include an interaction term between age and political discussions in model 3. Results demonstrate that as adolescents grow older, the negative effect of political discussions become stronger. Thus, consistent with the theoretical expectations based on growing significance of peers and increasingly complex discussions, we find that the older the adolescents get, the more effectively do political discussions with friends reduce anti-immigrant attitudes[5]. **Figure 3** illustrates this relationship, revealing that for the youngest in the sample (individuals in cohort 1 at T1) there is no statistically significant difference in prejudice between those who engage in political discussion and those who do not. Indeed, political discussions

[3]Additional analyses suggest that fluctuations in prejudice also drive participation in political discussion. While testing this relationship more thoroughly requires different theoretical controls (consistent with explanations of and previous research on political discussions among youth), reversing the dependent and independent variable in model 1 reveals a negative between-effect ($b = -0.22$ SE $= 0.02$) as well as a negative within-effect ($b = -0.05$ SE $= 0.02$) of anti-immigrant attitudes on political discussions. This suggests that in addition to the negative effect of political discussions on prejudice, anti-immigrant sentiment may also make political discussion less likely.

[4]We have run additional analyses to test whether reciprocal nominations moderate the effect of political discussions, but there is no significant interaction effect.

[5]We have run the analysis separately in cohort 1 and cohort 2 to account for the possibility that cohort differences drive the relationship. These analyses reveal significant interaction effects in both cohort 1 ($b = -0.04$ SE $= 0.02$) and cohort 2 ($b = -0.05$ SE $= 0.02$) which provides further support for the interpretation that political discussions become more effective as adolescents age. We have also run the analysis without time to account for the risk of multi-collinearity.

TABLE 1 | Political discussions and prejudice, linear mixed models with repeated measurements.

	Model 0	Model 1	Model 2	Model 3	Model 4
Fixed					
Intercept	2.30 (0.02)***	2.29 (0.02)***	2.22 (0.06)***	0.86 (0.10)***	2.25 (0.04)***
T1 (ref)					
T2	0.02 (0.02)	0.03 (0.02)	0.10 (0.06)	0.06 (0.06)	0.10 (0.06)
T3	0.02 (0.02)	0.03 (0.02)	0.08 (0.02)	0.03 (0.06)	0.08 (0.06)
T4	0.03 (0.03)	0.04 (0.03)	0.10 (0.03)	0.05 (0.07)	0.10 (0.06)
T5	−0.14 (0.03)***	−0.12 (0.03)***	−0.09 (0.07)	−0.14 (0.07)*	−0.10 (0.07)
Political discussion (w)		−0.05 (0.02)**	−0.05 (0.02)**	−0.05 (0.02)**	−0.05 (0.02)**
Political discussion (b)		−0.26 (0.03)***	−0.14 (0.04)***	−0.15 (0.04)***	−0.13 (0.04)***
Controls					
Friends' prejudice (w)			0.20 (0.03)***	0.20 (0.03)***	0.20 (0.03)***
Friends' prejudice (b)			0.63 (0.04)***	0.63 (0.04)***	0.62 (0.04)***
Political interest (w)			−0.02 (0.01)*	−0.01 (0.01)	−0.02 (0.01)*
Political interest (b)			−0.07 (0.02)**	−0.06 (0.02)**	−0.07 (0.02)**
Age			0.03 (0.01)**	0.03 (0.01)**	0.03 (0.01)***
Interactions					
Age* Political discussion (b)				−0.04 (0.01)***	
Friends' prejudice (b) *Political discussion (b)					0.25 (0.06)***
Random					
Time	0.11 (0.01)	0.09 (0.01)	0.05 (0.02)	0.05 (0.02)	0.05 (0.02)
Intercept	0.47 (0.02)	0.44 (0.02)	0.34 (0.03)	0.34 (0.03)	0.33 (0.03)
Residual (Ar1)					
Rho	0.27 (0.04)	0.30 (0.04)	0.38 (0.04)	0.39 (0.04)	0.38 (0.04)
Sd (e)	0.53 (0.01)	0.54 (0.02)	0.57 (0.02)	0.57 (0.02)	0.57 (0.02)
n	1,481	1,480	1,442	1,442	1,442
obs	4,974	4,966	4,378	4,378	4,378
BIC	9554.526	9460.308	8030.581	8027.893	8024.332
AIC	9495.919	9388.694	7928.431	7919.359	7915.798

*Standard errors in brackets. *p < 0.05; **p < 0.01; ***p < 0.001. (w), within-person effects; (b), between-person effects.*

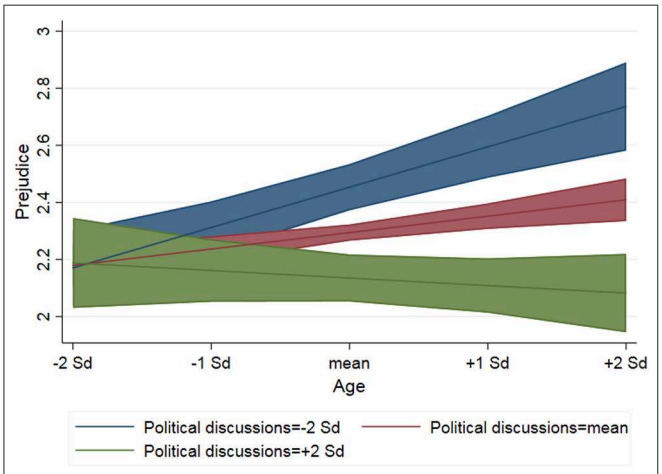

FIGURE 3 | Predicted values from linear mixed repeated measurement model (model 3) with 95% confidence intervals.

become more consequential for anti-immigrant attitudes as adolescents grow older.

Model 4 examines the role of political discussions as social influence among in-group members. Results provide support for hypothesis 3, which expects the effect of political discussions on prejudice to depend on friends' attitudes. While previous models have demonstrated that a high degree of political discussions is associated with less anti-immigrant attitudes, the interaction in model 4 shows that this becomes less true in high prejudice peer groups ($b = 0.25$, SE $= 0.06$). In fact, as shown in **Figure 4**, the negative effect of political discussions is most visible among adolescents whose friends have <1 standard deviation above the average degree of anti-immigrant attitudes. In line with observations in experimental studies (Aboud and Doyle, 1996; Aboud and Fenwick, 1999), prejudicial attitudes appear to be influenced primarily by discussions with low-prejudice friends. That political discussions are unrelated to anti-immigrant attitudes if friends are very high in prejudice cannot be explained by greater attitudinal homogeneity among high prejudice peers, as the dispersion of attitudes is not significantly lower in these groups.

CONCLUSION

Previous research tells us *which* significant others matter for the development of attitudes during adolescence (e.g., Paluck, 2011) and that peer prejudice is associated with individual prejudice over time (e.g., Poteat, 2007; Hjerm et al., 2018). With this

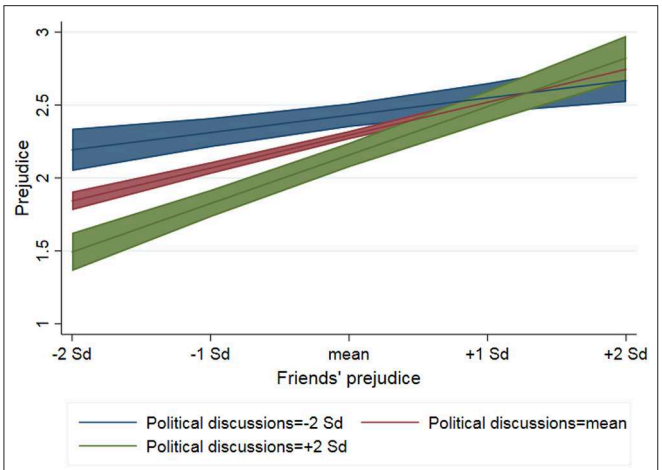

FIGURE 4 | Predicted values from linear mixed repeated measurement model (model 4) with 95% confidence intervals.

research, we aim to examine how a particular kind of social interaction is related to the development of prejudice over time. More specifically, we examine the consequences of engaging in political discussion with friends, the timing of these discussions, as well as the interaction between political discussion and the level of prejudice among adolescents' peers.

We find that engaging in political discussion is significantly associated with lower levels of between-individual prejudice. However, within-subject fluctuation in the amount of discussion is only weakly related to levels of prejudice over time, although the relationship between political discussion and prejudice does increase with age. Results also demonstrate that the effect of political discussion with peers on prejudice depends on the level of prejudice among peers. We find that political discussions only matter for adolescent prejudice when peers hold relatively positive attitudes toward immigrants. Although we are unable to explain this relationship further, this result is consistent with other studies on prejudice.

There are limitations to our study. First, we only study Swedish adolescents from one city. While there is no theoretical reason to assume the relationships we find would be substantively different elsewhere, this remains an empirical question that our data do not permit us to explore. Moreover, these data do not identify the exact content of the political discussions, so we do not know the impact of discussing specific topics on attitudes. Relatedly, data collection occurred before the so-called "migration crisis" in 2015 and the related upsurge of immigration-specific content in media coverage and in political debates. While it is not unreasonable to assume that this priming would affect the content of political discussions, which would in turn influence how they relate to prejudicial attitudes, we lack the data to test this specifically. On the other hand, the timing of the study is also a strength in that this relationship is evident during less turbulent, and in this sense more representative, times. Finally, although the analyses rely on longitudinal data and we have controlled for a variety of key variables, including one's own political interest and other types of discussions with friends, because we do not have an experimental design, we cannot rule out omitted variable bias.

This brings us to the important question of causality and how we should understand our results. Three common criteria are associated with determining causality and causal order: (1) temporal precedence, in that x occurs prior to y; (2) covariation, in that x and y covary; and (3) the absence of other alternatives. We do meet the first and second criteria; however, we have not met the third. Despite the inclusion of a number of theoretical controls, we cannot be absolutely certain that we have controlled for all possible time-varying covariates. In fairness, this third criterion is arguably impossible to meet without an experimental research design. Nevertheless, we want to be responsible in our interpretation. Because we cannot rule out that some unmeasured factor matters for our results, do not claim causality outright. However, choosing to be conservative here does not mean that we cannot claim that we have shown associations with a temporal order. In this important regard, we improve upon previous cross-sectional studies that cannot.

As mentioned previously, future research should examine further why the impact of political discussion on prejudice does not appear important in high prejudice social networks. Another promising avenue for investigation is whether attitudes also guide adolescents' willingness to participate in political discussions. In a country such as Sweden, holding and expressing prejudicial attitudes is generally not socially acceptable. In line with the spiral of silence theory (Noelle-Neumann, 1974; Glynn et al., 1997), it is possible that strong norms against expressing negative attitudes toward out-groups may lead prejudiced adolescents to refrain from discussing politics with friends. Indeed, our results reveal a stronger between- rather than within-person effect of political discussion on prejudice, demonstrating that most of the variation is explained by differences between adolescents rather than within adolescents over time. We also find preliminary support for the inverse relationship: more prejudice means less political discussion. This suggests that, to the extent that these relationships are causal, they likely go in both directions. Thus, further research should seek to closer establish what is likely to be a complex interplay between the development of prejudice and engaging in political discussion over the course of adolescence. Future research should also examine why political discussions matter more as adolescents age. Although we review a number of plausible explanations based on previous research, our data do not permit us to adjudicate among these accounts. Another important task is to further examine the consequences of political discussion with significant others who are friends, including other classmates, teachers, and other adult role models. Finally, future studies should examine other types of social interactions beyond political discussion, as well as other forms of communication more generally.

Despite these shortcomings, this research makes several important contributions. First, we move beyond classic research in the field of prejudice that investigates *with whom* people interact by asking instead if *how* people interact matters for attitudes. Second, we show how political discussions is associated

with prejudice over time by analyzing how it varies by age and by the level of prejudice in one's peer network. Third, in addition to the literature on prejudice, we contribute to a number of other areas of scholarship: political socialization, deliberative democracy, and research on attitude formation during the impressionable years.

ETHICS STATEMENT

No ethics review is necessary for this article. The analysis of these data does not require that the authors handle nor contain sensitive personal data (e.g., race, political opinions, health, sexual preferences, and biometric data according to Swedish regulations) that can be connected to individuals. These data were collected by the Youth and Society Project at Örebro University, which was ethically reviewed and approved by the Regional Ethics Board in Uppsala.

AUTHOR CONTRIBUTIONS

The original idea is the result of group effort. All authors contributed to the development of the research question, hypotheses, and analytical strategy. All authors discussed and approved all analyses and content. AB ran the majority of the analyses and contributed to the writing of the text. MH contributed to writing the text. ME contributed to the writing the text.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fsoc.2019.00070/full#supplementary-material

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International Migration and Development: A Dyadic Analysis of the Americas, 1970–2010

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This paper assesses the migration-development nexus from a new, relational perspective, providing a closer test of existing theories of cross-national dynamics, including migration and development. Using bilateral data, we assess the relationship between migration (im)balances and wage differentials between pairs of countries in the Americas, from 1970 to 2010. The analysis reveals a positive feedback between international migration and cross-national inequalities. Migration responds strongly to wage gaps, which motivate more uni-directional, or imbalanced migration flows in country-pairs. This relationship is particularly strong in contiguous countries. Similarly, wage gaps respond to migration imbalances, which increase per capita income differences in country-pairs, although the effect of migration on wage differentials is smaller than the effect of wage differentials on migration. Together, the results suggest that the migration-development nexus is characterized by a strong internal momentum.

Keywords: migration, development, globalization, inequality, Americas

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INTRODUCTION

Migration is increasingly touted by key players in the policy realm as a means of addressing inequalities through "development." As cross-national inequalities persist, questions are (re-) emerging about the relationship between migration, development, and inequality. How does immigration affect development outcomes in sending and receiving countries? Further, how do relative changes in cross-national inequalities affect the magnitude and timing of migration between countries? More broadly, how does international migration compare in magnitude to other, known global drivers of inequalities, including trade, foreign direct investment, and international political relations?

We assess these questions by taking a different approach, theoretically and methodologically. We integrate insights from neoclassical economics into a political-economic analytical framework that views both cross-national inequalities and international migration as expressions of an uneven distribution of power across countries situated within a single, worldwide economic division of labor (Portes, 1978; Sassen, 1988). We employ dyadic analysis (Krackhardt, 1988), which utilizes a dataset constructed with country-pairs rather than individual countries, using existing comprehensive cross-national, longitudinal data. Our approach offers a closer test of political-economic theory, which is oriented around *relational* explanations of cross-national dynamics, including migration and development. To begin, we construct a theoretical framework from neoclassical economic theory and political-economic theory, two approaches that have often been cast, for good reason, as counter-explanations of the migration-development nexus. As will be

shown, however, these two perspectives are not entirely antithetical to one another on the issue of wage differentials, or gaps, which is the most important factor posited to shape migration patterns in the world division of labor.

CONCEPTUAL FRAMEWORK

Neoclassical economic theory takes as its point of departure the assumption that migrants are rational, utility-maximizing individuals who make the decision to move on the basis of cost-benefit considerations, the primary consideration being the expected wage gains from moving into the labor market in a destination country where labor is remunerated at a relatively higher level (Lewis, 1954; Lee, 1966). At the macro-level, international wage differentials are the key explanation of international migration (Thomas, 1973). International wage differentials are an outcome of differences in the relative supply of and demand for labor: wages will be lower in countries in which the supply of labor exceeds the demand for labor, and higher in countries in which the supply of labor is insufficient to meet demand. At the micro-level, migrants are posited to act rationally in exploiting differentials in international wage levels. Migrants are "pushed" by relatively lower wages in the origin country and "pulled" to relatively higher wages in the destination country. International migration should therefore reduce wage differentials between countries, moving countries closer to an equilibrium level that reflects only the costs of moving, and ultimately minimizing much of the economic incentive to move.

Although this perspective remains the conventional framework, it is increasingly criticized for its inability to account for empirical regularities. Most importantly, wage differentials have been shown to be only a weak explanation of international migration. Despite widening differences in cross-country wage levels, the propensity to send migrants varies dramatically across countries and the stock of international migrants has remained relatively stable at three per cent of world population since the 1960s. Moreover, wages across countries have not come close to converging, despite the fact that there are more international migrants today in absolute numbers (232 million) than at any time in modern history (United Nations, 2013).

The limitations of the conventional perspective opened intellectual space for alternative perspectives, including political-economic approaches. In contrast to the neoclassical economics concept of rational, utility-maximizing migrants, political economy approaches focus on the structures that condition and constrain individual action. Migration is part of a system: individuals may indeed migrate on the basis of cost-benefit considerations, but both the costs and benefits of movement are structured by an historical context of unequal exchange in a hierarchical international division of labor. By definition, international migration involves the transgression of national boundaries. But for those working from a political economy perspective, migration is not only movement across national boundaries; it is more importantly movement *within* an integrated political-economic system (Portes, 1978; Sassen-Koob, 1978, 1981; Portes and Walton, 1981; Delgado Wise, 2006; Delgado Wise and Covarrubias, 2007, 2008; Delgado Wise and Cypher, 2007).

Placing international migration in this broader, world-historical context addresses a key limitation in the conventional, push-pull framework: that cross-country wage differentials are not strong explanations of international migrations. By expanding the scope of inquiry from national to world-scale processes, the political economy perspective opens up for examination the relationship between trans-national political-economic processes and international migration (Petras, 1980; Morawska, 1990; Hamilton and Chinchilla, 1991, 1996; Fernandez-Kelly and Massey, 2007). This is an important analytical advance because these global processes ultimately create the context for individual-level decision-making: "It is within the context of extensive social and economic penetration of peripheral societies by the institutions of advanced capitalism that individual cost-benefit calculations make sense" (Portes, 2007, p. 77). In this sense: "Migrants can be viewed as stepping or falling into a migratory flow, rather than initiating or constituting such a flow through their individual decisions and actions" (Sassen-Koob, 1978, p. 515).

By focusing almost exclusively on wage differentials, the conventional perspective also de-politicizes the world political-economic context in which migrants make decisions. In doing so, it misses key, structural relations that motivate and sustain international migration. Here, the concept of unequal exchange is paramount. Over time, unequal exchange between core and non-core zones produces uneven development across zones in the world-economy. International migration is a *consequence* of this uneven development, expressed as wage differentials: if not for (widening) cross-national income disparities, international migration would not exist. In this sense, both the conventional approach and the political economy perspective view wage differentials as a necessary cause of international migration.

Migration as a Cause of Wage Differentials and Unequal Exchange

Although both approaches view wage differentials as motivations for migration, these differentials become an explanandum in the political economy approach; they are foregrounded and explained, whereas they remain exogenous to the conventional approach.

Political economists contend that international migration is not only an outcome of unequal exchange, it is also *cause of* unequal exchange, reproducing uneven development in the world political economy. Burawoy (1976) provides one of the earliest discussions. International migration is a labor supply system. Migrants are a labor force, and like all labor forces, it must be maintained and renewed, or reproduced. What differentiates an international labor supply system from a domestic one, however, is that the process of reproduction (that is, of maintenance and renewal) occurs *across* national boundaries, so that different institutions are responsible for organizing, and bearing the costs of, the reproduction of the labor force. This opens up the possibility that the benefits of migrant labor may not accrue to the institutions bearing the

costs of reproducing the migrant labor system. For example, in the case of Mexican emigration to the United States, the costs of educating, training and reproducing the labor force are borne largely by the Mexican state and economy, but the benefits of capital accumulation derived from their application to production processes are reaped mainly by the United States:

> "Thus, for Mexican migrants, processes of renewal are organized under the Mexican state in the Mexican economy, and those of maintenance in the United States…the activities of maintenance and renewal are separated…In other words, a proportion of the costs of renewal is externalized to an alternate economy and/or state" (Burawoy, 1976: 1052-1053).

Thus, international migration is a form of unequal exchange, reproducing uneven development: "The significance of migrant labor lies in the separation of the processes of maintenance and renewal, so that renewal takes place where living standards are low and maintenance takes place within easy access of employment" (Burawoy, 1976, p. 1082). By capitalizing on uneven levels of wage remuneration across countries, international migration then tends to exacerbate those differences, leaving the origin country with sunk costs associated with education, training, and reproducing labor while enhancing capital accumulation in the destination country: "The very sale of labor power by an underdeveloped country…to an economically advanced nation serves only to reinforce the relations of economic subjugation and domination" (Burawoy, 1976, p. 1068).

Understanding international migration as a cross-national labor supply system means understanding migration as an unequal exchange between nation-states *within* a hierarchical world political economy and not as isolated movements across autonomous, self-contained nation-states (Sassen, 1988, 2001). That is, international migration is inherently *relational*—it is an exchange between two countries. From the political economy perspective, this exchange is both an outcome of uneven development (expressed as wage differentials) and a cause of uneven development between two countries.

Migration and Structural Imbalances

As an exchange, international migration is closely associated with structural imbalances within the origin and destination countries. Power differences between origin and destination countries, expressed as per capita income differentials, cannot be ignored. International migration is both an outcome of cross-national power differentials and is a contributor to them.

From the political economy perspective, international migration is initiated as higher-income countries expand markets into, or penetrate, lower-income countries. Market expansion through trade and foreign direct investment (FDI) restructures social, political, economic, and cultural institutions, mobilizing segments of the population into migration streams (Sassen, 1988), some of which are directed toward domestic urban areas and some of which spills over across national boundaries: "Sustained labor migration requires the penetration of the political and economic institutions of the dominant unit…into the subordinate one…(creating) internal imbalances between sectors and institutions in the subordinated unit" (Portes and Walton, 1981, p. 31).

Integration between higher and lower-income countries creates bi-national markets for labor and capital that motivate migration. As institutions within the lower-income country are restructured to fit into the bi-national, and inter-national, division of labor, new domestic classes emerge with closer ties to foreign capital, and consumption habits, and values and norms are reoriented toward the higher-income country. In particular, the balance between labor and capital within the origin and destination countries changes. On the labor-supply side (in the origin country), newly mobile populations emerge as labor is "freed up" from traditional sectors such as agriculture. As a result, international migrations do not originate "spontaneously" from individual cost-benefit analyses. They are produced by political-economic processes that imbalance the lower-income society in relation to the higher-income country "Structural imbalances between newer and older elements eventually produce migratory pressures" (Portes and Walton, 1981, p. 32). The concept of structural imbalancing is supported with case studies that range from South African manual labor migrations to the emigration of Argentine doctors, providing empirical evidence that "…common forces underlie superficially different movements" (Portes and Walton, 1981, p. 30).

On the labor-demand side (destination country), supply-side shocks induce new demands for lower-wage labor that support further capital accumulation in the higher-income country and exacerbate wage differentials between the origin and destination country. International migration is thus motivated by this "pull"-effect of restructuring while promoting further economic restructuring in the higher-income country (Piore, 1979). Here, the value of a political-economic perspective is particularly apparent, as these two dynamics—on the supply and demand side—are viewed as flip-sides of a *single* bi-national, or international, process: the restructuring of capital accumulation beginning in the 1960s. Deindustrialization in the core and the restructuring of core economies into service-oriented economies increased demand for both high-wage *and* low-wage service sector jobs, polarizing occupational and income distributions and increasing the demand for immigrant labor (Piore, 1979). Motivated by the need to sustain profitability in the face of rising wages in the core, corporations in high-income countries invest in production abroad, expanding markets, and this investment ultimately mobilizes segments of lower-income countries into migration streams that are directed back toward the high-income country (Sassen, 1988).

Political economy approaches thus explicitly relate wage differentials to international migration in a reciprocal relationship. Migration is an exchange. On the one hand, wage differentials express inequalities in power between two countries. Higher-income countries are able to re-structure institutions in lower-income countries, leading to structural imbalances that give rise to international migration. On the other hand, international migration promotes further structural imbalances in both origin and

destination, exacerbating wage differentials between high and lower-income countries.

Thus, from the political economy perspective, there are not one, but two indicators of unequal exchange—income differentials *and* migration differentials—*and they are related*. Income differentials should motivate international migration between the two countries, resulting in a migration *imbalance*—a larger flow of immigrants moving in one direction—between the two countries. Further, this migration imbalance should exacerbate wage differentials between the two countries, as it would facilitate restructuring within the higher-income country.

We test these relationships using bilateral data on country-pairs. In doing so, we extend the concept of structural imbalancing beyond a particular country to bi-national contexts. Here, structural imbalancing is relational—it occurs within the context of exchanges between countries, of which migration is one such key exchange. This approach provides a closer test of political economy frameworks, as it is able to assess relations between origin and destination countries simultaneously. We move beyond the country characteristics approach to migration and development and recast this relationship more clearly in a dyadic, relational perspective.

As a further extension, we assess the role of geography as a moderating factor. Although it has diversified geographically, international migration remains more common between countries that are contiguous, especially in the Global South (Ratha and William, 2007). Migration is both a cause and a consequence of labor markets that form across national boundaries. For example, Sanderson (2014) found that movements of capital and labor between Mexico and the U.S. created a bi-national labor market linking the two countries. Capital investments between the two countries created "channels" for migration that facilitated movement along sectoral-industrial lines between the two countries. The outcome of capital and labor movements between the two country was effectively a bi-national market for labor. We therefore explore the role of labor market contiguity as a possible moderating factor on the migration-development nexus.

DATA AND METHODS

Dyadic Analysis

This study utilizes a dyadic analytic model to assess the relationships between migration and development, rather than the typical individual country attributional analytic structure. Dyadic analysis can more rigorously test existing theory, which posits that *relations between* particular countries shape development dynamics (Krackhardt, 1988; William, 2001).

Since the use of dyadic analysis in this type of research is relatively new, it may be useful to provide some background on this methodology. The use of dyads is an old concept, originating in psychology nearly a century ago with the study of pairs of individuals as the unit of analysis (Picard, 1920). It first appears in the sociological literature in the early 1940s (Becker and Useem, 1942), again with pairs of individuals as dyads.

The field of international relations has employed this methodology in studies of between-country relationships extensively (see Erikson et al., 2017). However, the use of dyads in the sociological literature with country-pairs as the unit of analysis emerged only recently (see, for example, Bonikowski, 2010), and the use of dyadic analysis in the study of migration is even more recent (Blodgett and Leblang, 2015).

Dyadic Data Structure

Our dyadic data set is considerably more complex than an individual country-based structure. A typical attributional data set for the Americas would have 22 countries, or cases. In our dyadic data structure, the unit of analysis is the country-pair (U.S. Mexico, for example), giving us 462 total country-pairs ($22 \times 21 = 462$). Half of these pairs are redundant (Honduras-Brazil and Brazil-Honduras, for example), leaving 231 independent country-pairs. Since our study is longitudinal, with five time points (1970, 1980, 1990, 2000, 2010), the individual case becomes the country-pair-year (i.e., Belize-Columbia-2010). Our final data set contains a total of 1,155 country-pair-year cases (or dyad-year cases; $231 \times 5 = 1{,}155$).

Given the longitudinal structure of our analyses, we estimate models using the two most common panel data methods—random effects and fixed effects models—to address the problem of unobserved heterogeneity. We use random effects models specifically to assess the influence of geographic contiguity, or a shared border. Because contiguity is a time-constant, unit-specific variable, it is effectively removed from fixed effects analysis, making it only possible to analyze in random effects models.

Data for this study come from several different cross-national data sources. Bilateral international migration stocks and bilateral refugee stocks come from the World Bank's Global Bilateral Migration Database (2014). To ensure that migration stocks do not include refugee stocks, we subtract the refugee stocks from migration stocks for each country pair. We use stocks for theoretical and methodological reasons. Theoretically, both political economy and neoclassical economic approaches make arguments about total numbers of immigrants, so we use total numbers, or stocks, of immigrants as our measure of migration, and control for the country's population size in the analyses. Methodologically, bilateral data on migration flows were not available in sufficient numbers for analysis. Additionally, using migrant stocks can be seen as a more conservative approach, because stocks are relatively more stable than flows over time[1].

Included in our analyses are several control variables used in previous research. *GDP per capita* data are in constant 2000 U.S. dollars and are taken from the World Bank's World Development Indicators dataset (2014). *Total population*, *government expenditures per GDP* and *foreign direct investment (FDI) stocks per GDP* are also taken from the WDI dataset.[2] *Income inequality* data are from the Standardized World Income

[1]To further explore the relationship between migration balances and wage gaps, the models were re-estimated using international migration densities, or international immigrants per capita, instead of total international migration stocks. We find no evidence of a relationship between migration balances and wage gaps using international migration densities. Results are available upon request.

[2]Attributional FDI data are used in these analyses due to a lack of available bilateral FDI data.

Inequality Database (SWIID) (version 15), which provides comparable GINI indices of net income inequality. *International Governmental Organizations* (IGO) data and *bilateral imports* data were produced by the Correlates of War project (version 2.1). We standardize the imports data on GDP for purposes of comparison. In addition, we include two interaction terms of border contiguity*international migration and border contiguity*GDP per capita.

Because we are interested in how *differences in magnitudes between* countries affect international migration and income differences, we compute difference scores for all of the variables. For example, to determine the "wage gap" between two countries in given year, we use the absolute value of the difference between the GDP per capita of Country A and the GDP per capita of Country B. Similarly, to determine the "migration balance/gap," we use the absolute value of the difference between the number of international migrants from Country A living in Country B, and the number of international migrants from Country B living in Country A. For example, if there are 8,686 Americans in Argentina in 1970 and 55,325 Argentinians in the U.S., then the migration gap, or balance, for this dyad-year is 46,639. We use the absolute value of this difference so that the measure does not depend on the direction of the difference (i.e., whether the value for Country A is subtracted from the value of Country B, or vice versa). This strategy allows us to more closely test political-economic theory, which is a *relational* approach focused on the imbalances, or *differences the in magnitudes* of wages and migration between countries.

Sample sizes are determined by data availability. The reduced models (i.e., models without controls) include all (100%) possible dyads ($n = 231$) and 92% of all possible *dyad-years* ($n = 1{,}077$). Data are only available from 1980 to 2000 for all the variables in the full model, reducing the total number of dyads in the analysis to 209 (91% of all possible dyads) and the number of *dyad-years* to 354 (31% of all possible dyad-years).

RESULTS

Table 1 presents results from the analysis of migration balances (gaps). Consistent with political economy theory and neoclassical economic theory, wage differentials are positively associated with migration balances. Migration stocks are more imbalanced in country-pairs with larger wage gaps. The effect of wage differentials depends in part, however, on contiguity (Model 3 in **Table 1**). The positive effect of wage differentials is much larger in country-pairs that share a border. The main effect for GDP per capita indicates that for country-pairs that do not share a border, a 10% increase in the wage gap is associated with a 5.2% increase in the migration imbalance ($1.10 \wedge 0.533 = 1.052$). However, for country-pairs that share a border, a 10% increase in the wage gap is associated with a 69.2% increase in the migration imbalance ($5.895 - 0.376 = 5.519$; $1.10 \wedge 5.519 = 1.692$). Thus, as neoclassical economic theory and political economy theories expect, wage differentials give rise to more uni-directional flows of immigrants between countries. Moreover, this effect is much stronger in country-pairs that are contiguous.

TABLE 1 | Dyadic panel regressions of international migration gaps on GDP per capita gaps.

	Model 1	Model 2	Model 3
	REM	FEM	REM
Difference in level of development [GDP per capita]	0.331***	0.153*	0.533***
	5.02	2.49	4.51
Contiguity [Shared border = 1]			5.895***
			4.55
Border*GDPpc			−0.376*
			−2.07
Difference in Trade [Imports per GDP]			0.146***
			3.82
Difference in income inequality [GINI]			0.334*
			2.29
Difference in total populations			0.0842
			0.84
Difference in international governmental organization memberships [IGOs]			−1.154
			−1.85
Difference in foreign direct investment levels [FDI stock per GDP]			0.261**
			3.12
Difference in government state strength [Government expenditures per GDP]			−0.394***
			−3.41
1980	0.222**	0.276***	
	2.71	3.42	
1990	0.281**	0.338**	0.257
	2.72	3.26	0.77
2000	0.592***	0.687***	0.056
	5.75	6.49	0.16
2010	1.036***	1.135***	
	8.03	8.69	
Constant	3.353***	4.845***	2.116
	6.4	10.27	0.55
N [dyad-years]	1,077	1,077	354
N [dyads]	231	231	209
R^2 (overall)	0.204	0.134	0.603

t-statistics in parentheses.
**p<0.05, **p<0.01, ***p<0.001 (two-tailed tests).*

We also note that both other measures of globalization—trade and FDI—have positive relationships with migration balances. That is, migration becomes more imbalanced as trade gaps and investment (FDI) gaps widen. The coefficient for the difference in within-country inequality is also noteworthy. As the difference in within-country inequality scores increases, migration imbalances increase, too. We note that government expenditures, a measure of state strength, are the only variable negatively associated with migration gaps. We find that migration balances decrease, or become more even, in country-pairs as the difference between state strength increases. Finally, migration gaps are growing over time, as indicated by each of the time trend variables.

Table 2 presents results from the analysis of wage differentials (gaps). The findings lend support to political economic theory. Migration imbalances are associated with higher

TABLE 2 | Dyadic panel regressions of GDP per capita gaps on international migration gaps.

	Model 4	Model 5	Model 6
	REM	FEM	REM
Difference in international migration [Total stock of immigrants from partner country]	0.124*** (6.36)	0.0589* (2.47)	0.135*** (4.77)
Contiguity [Shared border = 1]			−0.975 (−1.75)
Border*Int'l Migration			0.000691 (0.01)
Difference in Trade [Imports per GDP]			−0.0232 (−1.23)
Difference in income inequality [GINI]			0.262*** (3.70)
Difference in total populations			−0.0782 (−1.18)
Difference in international governmental organization memberships [IGOs]			−0.737** (−3.00)
Difference in foreign direct investment levels [FDI stock per GDP]			0.327*** (5.82)
Difference in government state strength [Government expenditures per GDP]			0.113 (1.93)
1980	0.155* (2.51)	0.175** (2.80)	
1990	0.165* (2.33)	0.189** (2.66)	−0.586*** (−4.80)
2000	0.332*** (4.26)	0.381*** (4.69)	−0.469*** (−3.85)
2010	0.537*** (6.11)	0.613*** (6.85)	
Constant	6.701*** (54.36)	7.102*** (51.95)	9.515*** (5.67)
N [dyad-years]	1,077	1,077	354
N [dyads]	231	231	209
R^2 (overall)	0.213	0.163	0.609

*** $p<0.001$; ** $p<0.01$; * $p<0.05$.

wage differentials, not lower wage differentials as neoclassical economic theory would expect. Larger migration imbalances in country-pairs are associated with larger wage gaps. This relationship does not depend on contiguity, as the interaction term is not statistically significant. The main effect for international migration indicates that a 10% increase in the migration imbalance (gap) is associated with a 1.3% increase in the wage gap ($1.10 \wedge 0.135 = 1.0129$).

Differences in foreign direct investment (FDI) and within-country income inequality also are positively associated with wage gaps. Stated differently, more imbalanced FDI stocks and larger differences in within-country income inequality are associated with larger wage differentials between countries. We also note that the year indicators demonstrate growing wage gaps in the region from 1970 to 2010.

DISCUSSION

This paper assessed the migration-development nexus from a new, relational perspective, using bilateral data to assess the relationship between migration balances and wage differentials between pairs of countries in the Americas, from 1970 to 2010. The findings have important implications for: our understanding of the links between the migration, development, and inequalities; and theory and policy related to the migration-inequality-development nexus, which now stands as a top priority in the global development agenda among key international organizations.

The most important finding to emerge is the existence of a positive feedback between international migration and cross-national inequalities. In line with neoclassical economic theory and political economic theory, wage differentials motivate international migration, which manifest as migration *im*balances in country pairs. But, consistent with political-economic theory, international migration imbalances lead to *larger* wage differentials in country-pairs. Thus, the results suggest a significant internal momentum in the migration-development nexus. Migration responds to cross-national inequalities (wage gaps), and as migrants become more concentrated in higher-income countries, wage gaps increase, which motivates further migration in a positive feedback loop that exacerbates cross-national inequalities.

The strength of the relationship depends on geographic contiguity. Wage gaps are positively associated with migration imbalances regardless of whether countries share a border, but the effect of wage differentials is highly elastic in contiguous counties. If average incomes in a county-pair sharing a border diverge by 1%, the migration balance would become much more uneven, increasing by ∼6%. To translate this in to real terms, the wage differential between the U.S. and Mexico in 2010 was $35,835 (absolute value of $43,952–$8,117 in 2000 constant U.S. dollars) and the migration balance was 11,757,661 (absolute value of 740,182–12,497,843). Every 1% increase in the wage gap ($358), is associated with an increase in the migration imbalance of 658,529 persons.

Although there is a positive feedback between wage gaps and migration balances, the two relationships are not proportional, and the result is a more muted feedback than would otherwise be the case. Stated differently, migration responds strongly to wage gaps, but wage gaps are not as responsive to migration. Increasing the migration imbalance by 10% would lead to just a 1.3% increase in the wage gap. It is a significant response, but it is much weaker than the migration response to a change in the wage differential. In this regard, one finding merits more attention in future research. We find that the wage differential-migration balance relationship is much more elastic than the migration balance-wage differential relationship. The difference between the magnitude of the effects is intriguing and is worthy of further exploration.

This study provides a basis for further theoretical integration, as we find evidence to support both neoclassical economic theory and political economy theories. New data available at the bilateral level of analysis should make integration much more feasible in the coming years. It is noted that the U.S.-Mexico relationship is important for understanding migration and development in the western hemisphere. The Mexico-U.S. migration corridor is the largest in the world in terms of the number of migrants moving between these two countries.

Future research could expand the scope beyond the Americas in order to examine the generalizability of the findings. It would be worthwhile to assess other regions specifically in order to understand whether the dynamics we have identified in the U.S./North American-based migration system generalize to other world regions. Similarly, there is a real need to incorporate measures of conflict. Data on conflict (internal and international) are readily available. In the Americas, there was insufficient variation to warrant inclusion of conflict data in our models. Moreover, our models remove refugee stocks from the migration stocks variable. However, the role of conflict on the migration-development nexus should be considered in future research examining a wider array of countries and/or different world regions. Finally, the significant impacts we find of income inequality, foreign direct investment, IGOs and trade on the migration/wage nexus all offer fertile directions for future exploration.

DATA AVAILABILITY STATEMENT

Publicly available datasets were analyzed in this study. These data can be found here: https://datacatalog.worldbank.org/dataset/global-bilateral-migration-database; https://datacatalog.worldbank.org/dataset/global-bilateral-migration-database/a.

AUTHOR CONTRIBUTIONS

MS and JK contributed equally to authorship of the manuscript, including research design, conducting the research, performing the analysis, and writing the manuscript.

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Observing the Unobservable: Migrant Selectivity and Agentic Individuality Among Higher Education Students in China and Europe

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The research in migrant selectivity largely overlooks the broader institutional processes that shape the extent to which migrants from different backgrounds are indeed positively selected. This is particularly true in the case of highly skilled migrants, whose selection may not be conditioned by migration but by education. This paper deals with this limitation by studying individual characteristics, which are often treated as unobserved selectivity, among a specific flow of educational migrants in Europe, namely, Chinese higher education students. To do so, we use a unique representative multi-country dataset of about 8,000 Chinese international students and their native-born counterparts in China, the UK, and Germany. Our evidence rules out positive selection of migrants on individuality traits such as ambition, creativity, or being a risk-taker or independently minded. This supports our argument that the prevalence of agentic models of individuality is embedded in tertiary education on a global level.

Keywords: agentic individual, migrant selectivity, unobservable selectivity, higher education, educational migrants, China, Europe

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INTRODUCTION

Migration research has historically faced the analytical problem of isolating the effect of migration on specific integration outcomes from that of selection on confounders, which simultaneously create a push for migration and differential outcomes by migrant status (Cebolla-Boado and Soysal Nuhoğlu, 2017). This line of thinking posits that the causal connection between migration and migrant/native-born differentials could be overstated, since both migration and differentials in selected outcomes are caused by hidden confounders that are generally difficult to uncover in empirical research. Selection is at the heart of this problem. The idea that migrants are a self-selected population, that is, they are not a representative sample of population in origin, has been suggested as one of the explanations for migrant/native-born differentials (Chiswick, 1999) such as migrant educational optimism or better health outcomes.

Research designs in tune with this line of research are complex and require comparing migrants and non-migrants in countries of origin in addition to using native-born citizens in destination as a second reference group. Research into international migration seems to be slowly moving toward this approach, from a destination perspective (based on comparisons between migrants and native-born citizens in destination) to an origin-destination approach that includes comparisons with native-borns in origin and destination (Massey and Zenteno, 2000; Garip, 2016; Guveli et al., 2016; Mussino et al., 2018). Such move helps to control for the inevitable selection bias whereby

emigrants are not a representative sample of the population who decided not to migrate. When not incorporating the origin perspective, research confuses the impact of selection with that of conventional variables in migration research such as integration policies in destination. In other words, when dynamics in origin are ignored, it is not possible to fully understand the reasons why migrants and native-born citizens differ in key integration outcomes in destination countries.

Migrants are expected to be selected on both observed and unobserved characteristics. While observable selectivity is increasingly addressed in immigration literature, due to data difficulties, we know less about empirical patterns and theoretical underpinnings of unobservable selectivity. Relevant observable characteristics are widely registered in mainstream surveys using diverse and measurable indicators of social background such as education, social status, income, and family background among others. Research into selection by observable characteristics is thus possible largely using existing datasets (Ichou, 2014; Feliciano and Lanuza, 2016, 2017; van de Werfhorst and Heath, 2018). However, studying selection on unobservables is by definition less straightforward and thus more difficult to translate into empirical analysis. When studied, unobservables are often reduced to little more than psychological understandings of inner personality traits such as ambition or predisposition to risk taking, and assumed to be accounted for in residuals.

Some scholars used generalized international surveys such as the European Social Survey and World Values Survey to explore migrant/non-migrant differentials in achievement-related motivational orientations (Polavieja et al., 2018). Alternatively, given the scarcity of high-quality representative data sources, others focused on data from countries of origin to explore differences between prospective migrants while still in origin and those who do not intend to migrate (Cebolla-Boado and Soysal Nuhoğlu, 2017). On the whole, however, most studies simply refer ex-post to unobservable selectivity when accounting for unexplained individual variation.

In this paper, we attempt to overcome this limitation in the literature by empirically specifying unobserved selectivity among highly educated migrants, which has rarely been an empirical focus in migrant selectivity research. Despite the fact that international higher education students are now broadly regarded as integral to high-skilled migratory flows in global indicators (Hawthorne, 2008; OECD, 2017), the expansive literature on international education hardly dialogues with migration studies. Our paper explicitly links higher education and migration research fields, by using the *Bright Futures* dataset,[1] a unique, large-scale dataset of about 8,000 Chinese international tertiary students and their native-born counterparts in China, the UK, and Germany. In the G20 area as a whole, half of all international students come from Asia, with China, followed by India and Korea, being the main contributors (OECD, 2017). Furthermore, Chinese students make up over 20% of international students in all OECD countries and constitute the largest and fastest-growing body of students from any single country. Although the US is the top destination for Chinese students, the UK attracts the highest numbers in Europe with 10% and Germany 3% as the third choice study destination in the region. To the best of our knowledge, this is the first ever source of systematically representative data to allow thorough research designs on a single flow of highly educated migrants with control groups in origin and destination. Our paper seeks to empirically identify unobserved selectivity in order to confirm whether selection, most often studied using observable indicators among economic and unskilled migrants, actually takes place due to unobservables among the most educated.

RESEARCH HYPOTHESES: AGENTIC INDIVIDUALITY AS THE SOURCE OF UNOBSERVABLE SELECTIVITY?

The growing research on migration selectivity has largely ignored the specificities of differentiated groups of migrants such as humanitarian, unskilled and skilled, and international students. While there is an increasing amount of evidence confirming selectivity among unskilled labor migrants and migrant populations at the aggregate level as well as research pointing to selectivity on observable characteristics among international students (Brooks and Waters, 2011; Findlay et al., 2012; Gerhards and Hans, 2013), overall selectivity patterns among the skilled and educated migrants are not so well-understood. We start with the proposition that selectivity patterns among the educated are likely to differ from those of the general migrant population. A highly significant aspect of contemporary education is the emphasis it places on the increasingly standardized models of the agentic individual, with expanded notions of rights and capabilities, which defines proactive, independent, and goal-oriented individuals (Meyer and Jepperson, 2000). The current neoliberal contexts, with their focus on knowledge economies, anticipate such traits to impact achievement and success in education, labor markets, and overall life goals (Soysal Nuhoğlu, 2012; Hasse and Krucken, 2013). Since the 1990s, the agentic individual model has been transmitted, not only to students but to broader society as well, through scientific theories and ideologies of education, creating uniform expectations and equipping individuals on a global level with such narratives of the self (Frank and Meyer, 2002; Soysal Nuhoğlu and Wong, 2007, 2015; Lerch et al., 2017). Particularly in higher education, which is a highly transnationalized field, we observe a standardized conception of the student that centers around individual agency, ambition, competitiveness, and openness to new experiences. This conception cuts across higher education sectors the world over, affecting self-orientations and perceptions of not only those who migrate for their education but also those who stay. As tertiary education may well be playing the role of "equalizer" of aspirations, ambitions, and

[1]"Bright Futures": A Comparative Study of Internal and International Mobility of Chinese Higher Education Students. Principal Investigator: Yasemin Nuhoğlu Soysal (University of Essex), Co-Investigators: Héctor Cebolla-Boado (UNED), Thomas Faist (University of Bielefeld), Jingming Liu (Tsinghua University), and Sophia Woodman (University of Edinburgh). The project was funded jointly by the Economic and Social Research Council, Deutsche Forschungsgemeinschaft, and the National Natural Science Foundation of China.

orientations (Karlson, 2018), selectivity among highly educated migrants might be overstated in the literature.

Accordingly, we suggest two alternative hypotheses:

1) Given the prior evidence of selectivity among the general migrant population, we expect Chinese students who migrate for their tertiary education to be positively selected on individuality traits when compared with those who stay in China.
2) Given that higher education students are heavily exposed to standardized models of the agentic individual, we expect no differences on expressed individuality characteristics between Chinese students who migrate and those who do not.

While the first hypothesis requires comparison between migrants in destination and non-migrants in origin, confirming the second necessitates multiple comparisons between migrants and those native-born in origin and destination and, inevitably, in more than one host society, since the argument is that tertiary education foments similar orientations among students on a global scale. The *Bright Futures Survey* helpfully includes Chinese students and native-born students in two European societies: the UK and Germany.

DATA AND METHODS

Survey Data

The *Bright Futures Survey* (http://brightfutures-project.com/technical-report/) is a multi-country survey of students enrolled in tertiary education in China, Germany, and the UK. The questionnaire was carried out in Mandarin Chinese, English, and German with about 8,000 students in all three countries. The fieldwork was conducted in 2017 and 2018, using different sampling strategies in Europe and China. After thorough research into how Chinese international students are sorted across universities in their chosen destinations (Cebolla-Boado et al., 2017), a two-stage sampling logic was adopted in Germany and the UK. Universities were first stratified into groups according to ranking and number of Chinese students enrolled in each institution to ensure that students from different types of universities were appropriately proportionally represented. Within each university selected, random samples of undergraduate and master's students of Chinese and native backgrounds were obtained and individually invited to answer the questionnaire online. For China, the sample was stratified to cover different provinces in the north, south, and east of the country and take into account university prestige.

Table 1 describes the sample sizes for each of the analytic groups in this paper: international Chinese students in tertiary education in the UK and Germany, Chinese students studying in China, and two control groups of British and German students that we use in the main descriptive analysis. Note that the samples of British and German students are not representative of the universe of tertiary students in the UK and Germany but only of native-born students matriculated in universities in which Chinese students are also matriculated.

The British sample of Chinese students is fully representative of the universe of Chinese students in the UK and implements the sampling approach successfully, covering the entire universe of British higher education institutions and Chinese students across them. Similarly, the British sample is representative of native-borns enrolled in those higher education institutions in which Chinese in our sample are studying. The German sample of Chinese students did not cover the entire universe of Chinese students in Germany, and as such cannot be considered fully representative, and the sample of native Germans is smaller than that of Chinese. We found, however, that the differences between the UK and Germany are unremarkable in terms of our interests and the independent variables we use in the following analyses. In sum, our comparisons between China and the UK are based on representative samples, while we present results using the German sample to increase the robustness of our results. Note that replicating the analyses we present here without the German sample provides identical substantive results.

TABLE 1 | Bright future survey sample sizes.

Country	Sub-sample of students	Frequency
UK	Chinese international	1,523
	British	1,730
Germany	Chinese international	814
	German	425
China	Chinese	3,427
	Total	7,919

Bright Futures Survey.

Variables Used in the Analyses and Methods

Socioeconomic background is commonly considered when studying observable migrant selectivity. We use the father's occupation (e.g., a dummy combining professional, technical, and high-level administration vs. the rest) and education (whether the father is a university graduate) as socioeconomic background variables. However, our main interest in this paper is to delve into a less commonly studied aspect of migrant selectivity, namely, selection on unobserved characteristics. There is not a large research tradition investigating differences between migrants and non-migrants in terms of unobserved characteristics. Following our argumentation, we use four different aspects that look at agentic individuals as embedded in broader educational frameworks. *Bright Futures Survey* included four questions asking students if someone who "thinks up new ideas" (creative), someone who "makes their own decisions" (independent minded), someone who "looks for adventures and taking risks" (risk-taker), and someone who "values being successful" (achievement oriented) was "not at all like s/he," "somewhat like s/he," "neither like s/he nor unlike s/he," "somewhat like s/he," or "very much like s/he." It is important to note that we understand the individual characteristics represented in each question as self-perceptions and representations, much shaped by broader educational scripts and frameworks, rather than inner and habitual personality traits as suggested in the psychological literature. Given the

strong socialization role of education and broader societal expectations of self-development, however, it is possible that the gap between self-perceptions and habitual personality traits may well be narrow among the population we are focusing on.

The survey questions above are the main variables used in our empirical sections focusing on unobservable selectivity. In our analysis, with answers to each question recoded into dummies, taking the value of 1 for the first two categories of answers ("somewhat" and "very much like") and 0 for the remaining three, we estimated separate models. In this exploratory stage, linear probability models and logistic regressions were estimated to capture the average answer given by students in all five of our analytic categories (Chinese in China, the UK, and Germany, and both groups of European students). The **Appendix** includes four sets of overlapping histograms (**Figures A.1–A.4**) in which the distribution of each of these variables (individual traits) is compared across groups (Chinese in China and the UK, Chinese in China and Germany, Chinese in the UK and British, and Chinese in Germany and Germans).

As a second step, we merged all four variables into a synthetic index of agentic individual characteristics (results of the principal component analysis are presented in the **Appendix**, **Table A.1**. **Figure A.5**, also in the **Appendix**, plots the distribution of the resulting index). This continuous variable is used as the explicandum of a doubly robust treatment effect model (Linden et al., 2016) using inverse probability weighting with regression adjustment (IPRWA), in which the treatment takes the value of 1 if the respondent is a Chinese student who migrated to Germany or the UK and 0 for Chinese students in China. The advantage of estimating IPRWA treatment effects is that one can first model selection into treatment (in our case migration status) and then match comparisons from treated and control groups to measure the average treatment effect that, in our analyses, corresponds to the net differences in our index of agentic individual characteristics for migrants and non-migrants. It is possible that students from highly educated families are more likely to be exposed to agentic individual ideals (as these ideals spread through education) and are thus more likely to migrate. In consequence, we expect family educational background to play an intermediary role in positive selection on observed characteristics of those Chinese students who go abroad. Furthermore, given that studying abroad brings financial costs, we expect that there is also selectivity on the basis of parental occupational background. In our treatment effects estimation, we use a probit regression to model selection into migration using father's education (1: university degree; 0: other) and father's occupation (1: professional, technical and high-level administration; 0: other). We also use a recalled proxy of ranking in high school (1: if the student reports being in the 5th percentile; 0 otherwise). These three variables, measuring selection on basic observables (i.e., social background and previous performance), which the literature argues to be relevant for educational migration, help us discount from the association between migration and individual characteristics. Our model also controls for the propensity to migrate among Chinese students in rural or urban settings in China (1: rural). Finally, note that our multivariate model further controls for student gender (1: female). The **Appendix** includes a table (**Table A.2**) reporting the basic description of all variables included in this analysis.

FINDINGS

Descriptive Results

The first empirical results correspond to the differentiated effect of student groups on individual characteristics. This is done using unconditional linear probability models (LPM)[2]. **Figure 1** (obtained from models shown in **Table A.3** in the **Appendix**) summarizes these results looking at average responses given across groups. Throughout the panels, it can be seen that differences across groups of students are, if anything, modest, not to say non-existent. The test for selectivity requires comparison of outcomes across Chinese students in the countries included in the analysis: China, Germany, and the UK. Doing so reveals that there are no major differences across respondents from this national origin by country of survey. While there are some signs of statistically significant difference between Chinese across groups, these are of a small substantive importance and do not consistently go in the direction the selectivity hypothesis would suggest. Compared to their national counterparts in origin, Chinese in the UK are 3 and 5% more inclined to identify themselves as independent minded and risk-taker, respectively; however, they also report that they are 5% less achievement oriented (in the case of Chinese in Germany, 12%). On the other hand, Chinese in the UK and Germany are equally inclined to say that they are as creative as Chinese in China, and we see no differences between Chinese in Germany and Chinese in China in the likelihood of reporting being independent minded and risk-taker.

Overall, our results fit better the agentic individual hypothesis. The hypothesis suggests that the distribution of individual characteristics across student nationalities and countries of survey should be similar, since transnationalization implies a diffusion process whereby the model becomes taken-for-granted independently of national contexts (Soysal Nuhoğlu, 2015). Thus, we expect respondents' self-definitions to converge. This is indeed what we find as graphically summarized in **Figure 1**, obtained from unconditional LPM. While Europeans on the whole score slightly above Chinese respondents, the differences are small in size. In the first panel, around 80% of Europeans indicate that someone creative is "very much" or "somewhat" like them, while this figure is around 70–75% among Chinese students in all three countries. Similarly, a small gap between Chinese and Europeans also appears in the second panel; around 80–85% of Chinese and 90% of Europeans recognize themselves as independent minded. The third panel, where being a risk-taker is the object of interest, is the only one in which we find some differences between the student groups. While 45–50% of Chinese students in Europe and China fall into the risk-taker profile, a similar percentage to that displayed by German students, a higher percentage of British students, 65%, identify

[2]Logistic regression with average marginal effects did not produce any substantive changes in the results discussed here.

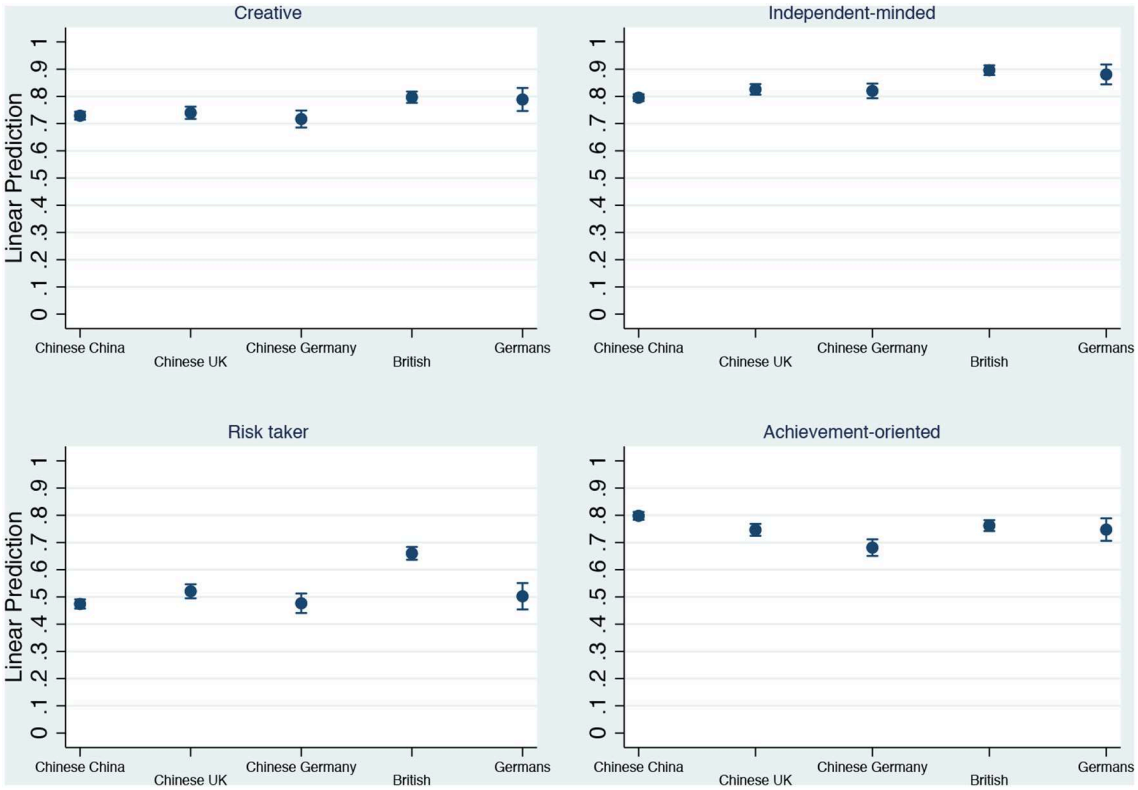

FIGURE 1 | Differences in selected individual characteristic across student groups. Our elaboration from *Bright Futures Survey*. Estimates obtained from models in **Table A.3** in the **Appendix**. Estimates and 95% confidence intervals.

as such. While this is a considerable gap, the broad similarities between Chinese and German students are in line with the predictions of the agentic individual hypothesis. Finally, the fourth panel fully fits with the expectation that all students score similarly across national origins and countries of survey—70–80% of students in all categories claim to be achievement oriented. In other words, this preliminary and unconditional analysis suggests that there are no clear grounds for arguing that there is selection on unobservables among students in tertiary education who migrated to other countries to pursue their degrees. It is rather the opposite; a remarkable homogeneity in how students perceive themselves dominates, which suggests that conceptions of the self are rather transnationalized among individuals who have already made it into tertiary education. This finding points to the increasingly standardized nature of university students across higher education contexts.

The standardization of the agentic individual model among university students stands clear when we further disaggregate the analysis by gender. The **Appendix** includes a replication of these plots, splitting the sample by respondents' gender in order to discard the possibility of agentic individual characteristics being patterned differently across different groups of students in terms of gender (**Figure A.6**). The plots confirm that, unlike predictions of selectivity hypothesis, we do not find any systematic differences neither between Chinese students in different countries nor between Chinese and native-born students in European destinations in regard to agentic characteristics. Compellingly, male and female respondents do not differ in the importance they attribute to these characteristics when describing themselves.

After merging these different components of the agentic individuality into a synthetic dimension using principal component analysis (see **Table A.1** in the **Appendix**), we confirm the remarkable similarities in the distributions of this factor across our analytical categories in **Figure 2**. This provides a more intuitive visual confirmation of our second working hypothesis. In the multivariate analysis that follows comparing Chinese students in China and Europe, we use this factor as our dependent variable of interest.

Multivariate Analyses

While our preliminary and unconditional conclusions already suggest that higher education leaves no room for migrant selectivity, it is necessary to discard systematic composition effects associated with migration in order to attain a more conclusive view on whether migration does indeed signify positive selection of individuals on unobservables. Isolating the effect of migration on any specific individual characteristic or behavior ideally requires longitudinal multi-sited data that link countries of origin and destination in order to identify the

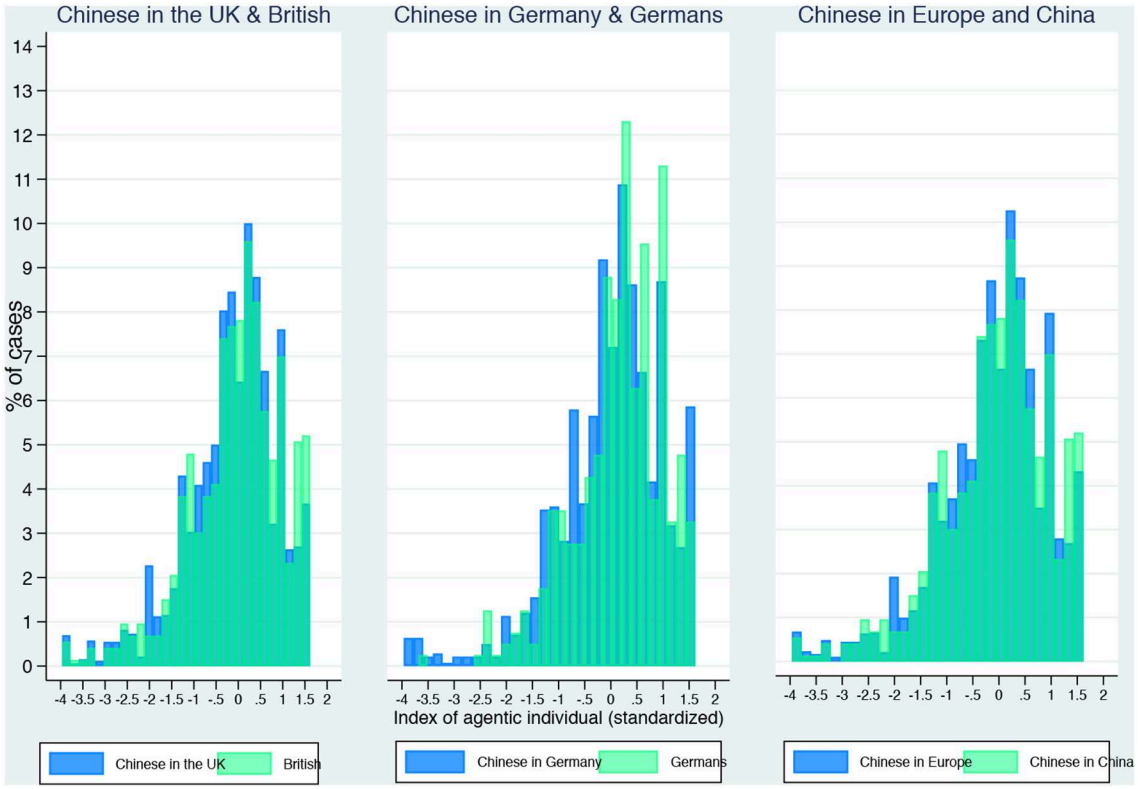

FIGURE 2 | Distribution of the synthetic score of agentic individuality by analytic groups. *Bright Futures Survey*.

distinctive features of migrants and native-borns in origin and host societies. These distinctive features could be the result of the fact that individuals who migrate, even before they make the move, can be systematically different to those who prefer to stay. Alternatively, the systematic differences between migrants and native-borns in origin may result from the very nature of the formers' experience of migration. Detecting which of these two possibilities applies in our case is a complex task particularly with the kind of observational, cross-sectional data that we use. Nonetheless, treatment effects and other quasi-experimental research methods allow us to model differences between treatment and control groups (i.e., migrants vs. non-migrants, in our case), controlling for a list of relevant regressors and selection into treatment. Specifically, selection into treatment (migrating being the treatment and not doing so being the control) is essential in order to disentangle whether differences by treatment status are due to selection or to experiencing migration. Only after modeling selection can we adjust the regression using other covariates and thus credibly confirm whether being a migrant implies any difference in the individual characteristics with which we are concerned when compared with non-migrants. In the lack of longitudinal data, this modeling approach represents the best alternative in estimating our effect net of selection into migration, since it circumvents the most important limitation inherent to cross-sectional observational data, that is, the non-random allocation of migrant status among migrants and non-migrants. Furthermore, treatment effects with inverse probability weighting is a double robust estimation method, which implies that the estimators are unbiased if at least one of the equations is correctly specified (Funk et al., 2011).

Table 2 shows our results. Let us first focus on the probit regression predicting the treatment status (migration). Chinese students in Europe and China were included in the analytic sample. As the literature on international education suggests a positive selection of international students by social background, we used two relevant predictors modeling this family condition: father's occupation in professional, technical, and high-level administration, and father's highest level of education being a tertiary degree. Research focusing on brain drain in migration suggests international students being positively selected on school performance. Thus, in our treatment equation, we included high school results (being in the 5th percentile of class in high school). We also control for whether the student comes from a rural or an urban setting in China. Our probit equation confirms that there is positive selection into international education by father's education and occupation, although these estimates are far from implying that all international students are from privileged social origins (having a father with a university degree or a father in the highest occupational social class increases the likelihood of being a migrant around 50%). Similarly, having a successful high school performance merely increases this probability by 10%. Students from rural settings in China are less likely to engage in educational migration.

TABLE 2 | IPRWA treatment effect on the agentic individual score Chinese in Europe (T) and Chinese in China (C).

Average treatment effect		0.081
		(0.048)
Population means		−0.12*
		(0.023)
Regression adjustment: control	Father's occupation is professional and technical or high-level administration	0.014 (0.061)
	Father has university education	0.14
		(0.071)
	Student is female	−0.21*
		(0.045)
	Constant	−0.037
		(0.035)
Regression adjustment: treatment	Father's occupation is professional and technical or high-level administration	0.0026 (0.075)
	Father has university education	−0.013
		(0.065)
	Student is female	0.045
		(0.088)
	Constant	−0.062
		(0.086)
Selection into treatment	Father's occupation is professional and technical or high-level administration	0.55* (0.052)
	Father has university education	0.52*
		(0.055)
	Student is 5th percentile of the class in high school	0.096* (0.046)
	Rural setting in China	−1.07*
		(0.060)
	Constant	−0.54*
		(0.048)
N		4,165

Our elaboration from Bright Futures Survey.
*Standard errors in parentheses; *$p < 0.05$.*

Our model estimates the "average treatment effect" (ATE) associated with being in the treated group compared to the control, net of selection and adjusted by a number of controls including parental occupation, parental education, and student gender. The results from this more demanding approach to estimating effects using observational data show that there are no grounds for claiming that educational migrants are positively selected on unobserved characteristics. The treatment group (Chinese migrants) scored on average 0.08 more in the synthetic score of agentic individuality than the control (Chinese non-migrants); however, this effect is not statistically significant. In other words, there is no sign of migrant selection in agentic individuality, when the empirical focus is on highly educated populations.

Robustness Checks

Our synthetic factor of agentic individual personality is consistent among analytic groups. We have re-estimated our principal component analyses for each of them separately with identical results to those here reported. We have also re-estimated our analysis using a different sample of Chinese educational migrants in Japan with very similar results to those discussed in this paper. Our multivariate results are stable controlling for other potentially relevant individual characteristics such as age, year of education (1st, 2nd, or 3rd years), and level of studies (master's vs. undergraduate degrees).

DISCUSSION OF THE RESULTS AND IMPLICATIONS

Studying migration selectivity has become a priority topic for current migration scholarship. Our paper overcomes two important limitations in this research agenda. Firstly, selectivity research up until now concentrated on the entire stocks of migrants in destination countries, where low skilled economic migrants prevail, in the process overlooking whether highly educated and skilled migrants are any different. Our paper, to the best of our knowledge, is the first to produce a systematic documentation of patterns of selectivity for a specific flow of highly skilled, international students combining data from origin and destination. Secondly, the selectivity research agenda prioritized observable socioeconomic background variables. Ready availability of such indicators in many standard surveys explains this preference. However, the most intriguing regularities in research into integration in which migrants appear as the advantaged population (such as the "paradox of immigrant optimism") correspond to selection on ambition and similar individual traits that most often remain unobserved and are simply mentioned as ex post attributes to unexplained residual variation. Consequently, more often than not, research into selectivity downgrades the role of unobserved characteristics.

In this paper, we set ourselves the task of explicitly studying unobservable selectivity. By taking into consideration the broader institutional contexts that frame individuals' self-expressions of worth and traits, we were able to theorize about and empirically specify unobserved individual selectivity, beyond assumed personality attributions assigned to unexplained residuals. We considered how four specific individual characteristics—being creative, independent minded, a risk-taker, and achievement oriented—are distributed among migrants and non-migrants from different origins. We acknowledge that this is not a comprehensive list of characteristics that might be relevant to research into migrant selection on unobservables. However, these individual characteristics, with attributed agency, are of particular importance because of the place they have in broader institutional frameworks that privilege knowledge economy, which is regarded as the driver of the current migration flows of the most skilled and educated.

Our research into the international migration of Chinese tertiary students shows that selection among these educational migrants occurs, to a certain extent, due to observable characteristics, such as social background (parental occupation and education) and prior academic performance, yet these are small effects, suggesting that educational migration is a rather

heterogeneous migration flow. For our central concern in this paper, however, we document no selection on the basis of what is often attributed to the unobserved. Our evidence shows that Chinese university students who migrated for their studies are equally likely to see value in individual characteristics such as being creative, independent minded, a risk-taker, or achievement oriented as their peers who did not make the move abroad. Furthermore, they are also similar to students matriculated in British and German universities who were natively born. In other words, there is a remarkable convergence in how youth define themselves across countries and migrant status, which leaves no room for claiming that our target population is positively selected.

We offer explanations for this empirical regularity by highlighting the highly transnationalized education systems across the globe that play a predominant role in standardizing the idea of agentic individuals and their aspirations as worthy, not only for individual but also national and global futures. This idea has become embedded in a variety of institutions beyond education in the liberal and neoliberal context of the last 50 years. It has been promoted by international organizations (such as the cultural conventions of UNESCO and the Council of Europe) and is found in human rights frameworks, global art platforms, organizational managerial ideologies, and market-driven national and international institutions (in the health, IT, and finance sectors) (Hall and Lamont, 2009; Soysal Nuhoğlu, 2012; Bromley and Meyer, 2015). Future research might consider selectivity in migration flows materializing in connection with these different social domains.

It might be argued that our findings in this paper are driven by the empirical choice of a certain migrant group, that is, Chinese international students. China experienced a late expansion of its tertiary education after the country's opening up in the 1980s. China's highly stratified university system (through the centralized arrangement of university admissions) and the rapid expansion of its middle classes created massive internal competition for places in prestigious universities. This, it might be argued, helps to explain the outmigration of higher education students with a homogeneous profile. However, our findings confirm a high level of convergence between Chinese students and their British and Germans counterparts, which cannot be explained by such internal dynamics. Future research into other higher education contexts in which internal competition for highly ranked universities is not so fierce, as is the case in many African and Latin-American countries, could well make evident the robustness of our findings and explanations.

Finally, we believe that our paper convinces due to the availability of data, which makes it possible to observe educational migration selectivity across two destinations, the UK and Germany. These two destinations have different positions in relation to highly skilled migration flows, the UK being the only European country to have had significant success in the so-called "Global Race for Talent," in which Germany lags behind. Evidence of similar patterns of selectivity in educational migration to these different destinations is further support for the argument we put forward in this paper. Given the increasing proportion of the highly skilled and educated in contemporary migration flows, with increasingly heterogeneous destinations, empirical research expanding beyond North American and European contexts could be fruitful for future study.

DATA AVAILABILITY STATEMENT

The datasets for this study will not be made publicly available because the dataset is currently under embargo, and will be publicly available in 2021. We will however provide stata syntax files on request.

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of the Statement on Safeguarding Good Scientific Practice by the Ethics Committee of University of Essex with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the University of Essex Ethics Committee.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fsoc.2020.00009/full#supplementary-material

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frontiers in Sociology

ORIGINAL RESEARCH
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Refugee Employment Integration Heterogeneity in Sweden: Evidence From a Cohort Analysis

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Sweden, like many other European countries, has lower employment levels for the foreign-born compared to native-born Swedes. To some extent, this could be due to the country's relatively large intake of refugees. However, few studies have focused entirely on the employment integration of these refugees. In order to fill this gap, we use detailed longitudinal Swedish register data of three arrival cohorts (1998–2000). These data cover the employment of refugees from different countries of origin in Sweden in the first 12 years since their arrival. In line with related work and theoretical considerations and with respect to group characteristics, outmigration, and employment integration over time, we find differences between dissimilar groups of refugees. The findings concerning employment integration decrease to a small degree after rich regression adjustments. Moreover, maybe more surprisingly, we find a very similar result within the main groups of refugees from countries such as Bosnia, Ethiopia, and Eritrea. Women from these groups, in particular, have similar or higher employment probabilities than Swedish-born women after between 5 and 8 years in the country. Overall, each group managed to catch up to a non-negligible, yet varying, degree compared to related empirical evidence from other countries. The role of contextual factors in the refugee sending and receiving countries is highlighted.

Keywords: refugees, employment, cohort, Sweden, integration

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INTRODUCTION

The number of asylum-seekers entering Europe rose dramatically following the Arab Spring in 2011 and especially during late 2015; consequently the integration of refugees in new labor markets has been high on the political agenda. Notwithstanding the high increase during 2015, Sweden is one of the few countries in Europe to have admitted a large refugee population over recent decades. Besides, Sweden is also a country with highly ambitious labor-market integration policies (see MIPEX 2015: http://www.mipex.eu/) but which has, at the same time, a considerable native–immigrant employment gap compared to other OECD countries (OECD, 2017)[1].

[1]The native–immigrant employment gap is about 14% in Sweden and only 3% in the EU(28).

One reason for the employment gap could be the relatively large intake of refugees who, according to a number of studies, show lower employment levels compared to labor and family-reunion migrants. In other words, controlling for several demographic and human-capital characteristics reveals that there remain differences in the probability of obtaining employment between refugees and other immigration categories (Bevelander, 2011; Bakkaer, 2015; Dustmann et al., 2017). Refugees are less favorably selected according to labor-market skills and should therefore have a longer period of adaption to host-country labor markets (Borjas, 1987; Chiswick, 2008). Traumatic experiences and long and uncertain asylum procedures inducing insecurity and affecting mental health in a negative way can also be prejudicial to their obtaining employment (Bakker et al., 2013; Hainmueller et al., 2016; Dustmann et al., 2017).

Although the unpacking of the heterogeneous group of immigrants by entrance category is a step in the right direction in understanding the variation in the native–immigrant employment gap between countries, the immigrant sub-category of refugees is also largely dissimilar. Refugees to Sweden have arrived over different periods, for diverse reasons, from different parts of the world and possess various characteristics, skills, and traits. The relevance and the contribution of this study lies in the fact that, by using high-quality individual register data on admission status and country of birth, we can contrast refugee employment integration patterns from different parts of the world. Moreover, the register information that we use on the relatively high intake of refugees in Sweden also allows us to follow individuals in a longitudinal framework over time and study the refugee cohort arriving between 1998 and 2000 in detail, both from a dynamic perspective as well as by mitigating outmigration bias caused by return migration—which is difficult to deal with in cross-sectional data[2].

The research questions we are focusing on are:

1) To what extent does employment integration vary between male and female refugees by country of origin?
2) Do we observe, over time, a "catching up" or a "falling behind" for the different groups compared to native employment levels?
3) Can employment integration heterogeneity by country be explained by differences in observable characteristics such as demographics and levels of human capital?

The reminder of this paper is as follows. In the next section we provide the context for the study, followed by a section detailing earlier research. We continue with a data and method section as well as providing descriptive results. After this, we show our multivariate analysis and finish by discussing the results in the conclusion.

THE SWEDISH CONTEXT

At the end of 2018, about 19% of Sweden's population was born abroad, making it one of the top countries in the European Union for the reception of immigrants, only surpassed by Switzerland and Luxembourg. Although diversified in their reasons for entering Sweden, a significant proportion of the immigration to Sweden over the last 40 years has consisted of individuals seeking asylum who have subsequently gained residence. Since the early 1980s, refugees and tied movers have dominated the migration inflow, coming primarily from Eastern Europe and non-European parts of the world (Bevelander, 2011). Starting in the 1980s, the lion's share of refugee immigration came from Ethiopia, Eritrea, Iran, and other Middle Eastern countries. Individuals from Iraq and the former Yugoslavia dominated in the 1990s. Since the beginning of the new millennium, Iraqi, Somali, Syrian, and Afghan refugees have represented the largest share of the refugee intake to Sweden. Relatively liberal asylum rules have been one of the explanations for the comparatively high number of people seeking asylum in Sweden.

Swedish refugee policy is based on the UN Geneva Convention of 1951 (which Sweden signed in 1954) and established in the Swedish Aliens Act of 1989. According to this act (which has been considerably amended and reinterpreted), Sweden may give asylum to one category of refugees only, so-called *convention refugees*. These are individuals who are either stateless or are living outside the country of their nationality or former habitual residence, and who have a well-grounded fear of persecution in that country due to their race, nationality, membership of a particular social group, religious beliefs, or political opinions. These refugees have entered Sweden individually, applied for asylum and subsequently obtained a residence permit. Outside this act, Sweden obviously cooperates with the UN High Commissioner for Refugees, the UNHCR, and admits its share of *resettled refugees*. In contrast to convention refugees, resettled refugees are individuals who often come directly from a refugee camp and who have not entered the country individually. The size of the quota is decided annually by the Swedish government in agreement with the UNHCR. Moreover, over time, the Swedish Aliens Act of 1954 has been interpreted in a wider sense than the original Geneva Convention, creating an established practice that has enabled other refugees, beyond convention and quota refugees, to obtain permanent residence in Sweden.

Labor-market policies toward refugees have been used in Sweden since the 1970s. According to the 2015 MIPEX index (http://www.mipex.eu/), Sweden scored the highest out of all European countries and Canada on all six indicators studied, including the labor-market access indicator for immigrants and ethnic minorities. The main elements in the labor-market integration programs over recent decades have remained the same—language training, civic orientation, and labor-market activities—and are provided by either the municipalities or the labor-market authorities (since 2010). The duration of the program has been about 2 years and is financed by the government.

Program, in studied period, include the fact that housing is negotiated by the regional authorities, mainly in smaller municipalities with an abundance of housing, so that individuals can begin their introductory program. Resettled refugees are housed upon arrival by the Migration Board, which has negotiated special arrangements with a number of municipalities for both housing and integration training. However, given the

[2]However, it is important to note that our population of immigrants might be slightly over-represented due to the lack of deregistration upon emigration.

shortage of housing in the larger municipalities, these refugees often end up in smaller ones (Bevelander and Pendakur, 2009). Of note is the fact that, under Swedish immigration regulations, the relatives of refugees have the right to reunion migration, too. The Swedish government, through the Swedish Red Cross, also finances the travel costs associated with reuniting relatives.

EARLIER STUDIES

The increase in the number of people seeking asylum has had a profound effect on European countries, not the least on Sweden, where approximately half of the settling immigrants over the last 30–40 years were refugees or their families. Whereas, a large body of literature is available on the economic integration of immigrants in host countries, far fewer studies have been conducted on the economic integration of refugees.

A number of studies in the US, Canada, the UK, the Netherlands, Denmark, Norway, and Sweden have specifically focused on the labor-market integration of refugees. The picture that this research paints is that, compared to other immigrant groups, refugees generally have lower employment rates, particularly soon after their arrival in the host country. However, over time, refugees "catch up" and show similar employment levels as other non-economic immigrant categories (de Vroome and van Tubergen, 2010; Bevelander, 2011; Hatton, 2011), although they have lower levels compared to labor migrants (Yu et al., 2007).

Theoretically, it is assumed that refugees, like other non-economic immigrants, are less favorably selected compared to labor (economic) immigrants (Borjas, 1987; Chiswick, 2008; Dustmann et al., 2017). Refugees arrive under different, and often difficult, circumstances, have not migrated primarily for labor-market reasons and are admitted according to other (non-economic) criteria, which appears to affect their labor-market integration. Both the migration and the admissions processes can be lengthy and cumbersome. Health issues and the loss of human capital can hinder individuals' adaption to the labor market of a new country. Moreover, once accepted, whether refugees and family-reunion migrants obtain permanent or temporary residence can also affect their investment in the host language and receiving-country-specific human capital and their labor-market integration process (Hainmueller et al., 2016; Dustmann et al., 2017).

Studies that focus on the employment trajectories of government-assisted refugees, asylum-seekers, and family-reunion immigrants in Sweden conclude that the differences inferred can be the product of integration policies that vary by entry category. They also point to possible differences in access to social capital and in mobility choice. Government-assisted refugees are often located in municipalities in which housing is available but where employment opportunities are scarce. Asylum-seekers often have personal resources and can settle where the job prospects look the most promising. Family-reunion immigrants are likely to draw on the social capital acquired by family and friends who have already settled in the country (Bevelander and Pendakur, 2009).

For Sweden, Rashid (2009) assessed the impact of mobility on economic outcomes for refugees. He shows that internal migration generates a positive outcome in terms of higher employment levels and family income for newly arrived refugee families; this is in line with earlier research on the attractiveness of the larger and more diversified labor markets in more densely populated areas and larger cities. This is partly because refugees often move from an area with few jobs to one with greater employment opportunities (Edin et al., 2003; Damm, 2009). The internal migration of immigrants in general, and refugees in particular, is thus an important factor when it comes to their obtaining employment.

In addition to national-level datasets, a number of special surveys have been carried out that support the relationship between immigrant entry category and economic outcomes. In the case of the Netherlands, de Vroome and van Tubergen (2010) found that host-country-specific education, work experience, language proficiency and contacts with natives were positively related to the likelihood of obtaining employment and occupational status. In another study on the Netherlands, Bakker et al. (2013) showed that post-migration stress or trauma affects refugees' labor-market integration. Survey data from a sample of 400 refugees in the United Kingdom point to the fact that policies which restrict access to the labor market also have a negative impact on refugees' employment probabilities (Bloch, 2007).

Using the Longitudinal Survey of Immigrants to Canada to compare the labor-force participation and earnings of differing categories of immigrants 2 years after their arrival, Aydemir (2011) concluded that refugees have lower participation rates than family-reunion immigrants but that their earnings are about the same. Assessment of economic outcomes in the United States has shown that refugees have lower earnings than other categories of intake but that this difference can, at least partially, be explained by differences in language ability, schooling, level of family support, mental health, and residential area. However, a gap remains even after controlling for these factors (Connor, 2010). Studies for Norway and Denmark show that refugees and family members have an initial promising increase in employment integration but a subsequent leveling out and even a reverse process after about 10 years (Bratsberg et al., 2017; Schultz-Nielsen, 2017). These studies underscore the heterogeneity within admission class, country of origin and schooling as explanatory factors for labor-market success.

Many of the studies referred to above on the differences between refugees and economic migrants have concluded that refugees are in a disadvantaged position. However, there are also discrepancies in the results of these studies: some show that refugees perform as well as other non-economic immigrants, and some that the differences are small, while others argue that the gap is substantial. However, these studies are all based on comparisons between groups *in one country*, not between countries. In Bevelander and Pendakur (2014) this problem is overcome by studying the economic integration of non-economic migrants. Directly comparing two countries and the same refugee groups, as well as admission class, provides additional insights. In their study, asylum-seekers who

subsequently obtain refugee status, resettled refugees and family-reunion migrants, all of whom are non-economic immigrants, are compared in both countries. The results show that, after controlling for other variables, the probability of being employed is roughly the same in Canada and in Sweden, whereas the difference in earnings between the countries is greater and favors Canada. Additional insights from this study are that differences between intake categories are smaller in Sweden than in Canada. The authors argue that this could be due to the provision of services and programs to all categories in Sweden yet only to resettled refugees in Canada. Thus, while the employment rates are comparable between the two countries, Canada may offer greater opportunities for upward earnings mobility than Sweden. Maybe the larger wage dispersion in Canada relative to Sweden could be a possible explanation for this result.

Summarizing and in line with Chin and Cortes (2015) the research on refugee labor-market integration clearly indicates that refugees are at a disadvantage upon arrival in the host country due to unfavorable selection, loss of skills, and the lesser transferability of earlier skills compared to other migrants (see also Luik et al., 2018 for Sweden). Besides, lengthy asylum procedures negatively affect the possibilities for investing in host-country human capital. Investment in human capital by refugees as well as through labor-market policies directed at refugees, including language training, could initially overcome their difficulties in entering the labor market and lead to an adaptation in economic terms relative to other migrants and natives. However, refugees' relatively worse health due to their earlier experiences could mean that, overall, they never do "catch up" with other migrants and natives in the labor market.

In line with the above, we propose the following. Our first expectation is that there will be a heterogeneous pattern of employment integration by gender and country of birth. Our second expectation is that, after controlling for demographic and human-capital characteristics, both refugee *male* and *female* employment probability will be low in the first year after arrival although this will subsequently increase—indicating a "catch up"—or decrease, representing a "falling behind."

TABLE 1 | Mean characteristics by admission status.

	EU 28	Non-EU 28			
		Student	Labor	Family reunification	Humanitarian
Employment status					
Employed	0.52	0.07	0.53	0.38	0.46
Employed (>50 k)	0.51	0.07	0.52	0.37	0.46
Socio-demographics					
Male	0.62	0.71	0.78	0.33	0.63
Couple	0.45	0.35	0.62	0.68	0.68
Single	0.45	0.64	0.34	0.14	0.18
Children	0.82	0.18	0.66	1.62	1.64
Human capital					
Some college	0.54	0.42	0.55	0.38	0.32
Municipality					
Stockholm	0.42	0.40	0.52	0.38	0.28
Gothenburg	0.18	0.15	0.12	0.18	0.19
Malmö	0.15	0.26	0.10	0.14	0.15
Migration-related					
Swedish citizenship	0.00	0.01	0.01	0.01	0.03
Age at migration	31.70	29.43	34.41	32.19	32.79
Year of arrival	1999.04	1999.08	1999.09	1999.02	1999.03
Staying 12+ years	0.51	0.04	0.43	0.66	0.87
N	35,096	1,620	3,131	67,289	151,089
% of sample	13.59	0.01	0.01	26.06	58.51

DATA AND DESCRIPTIVE STATISTICS

Data

Our analysis uses administrative data from the STATIV database of Statistics Sweden for the years 1998–2012. This database contains yearly basic demographic and socio-economic information on every legal resident in Sweden. Focusing on the labor-market outcome "employment status" for refugees[3], we observe individuals between the age of 25 and 64 from Year 1 to Year 12–14 since arrival. While employment status is a well-established labor-market outcome, it is noteworthy that its scope is limited to the extensive margin of labor-market participation. Hence, it does not capture whether the employment is self-employed, part-time, blue- or white-collar, high- or low-paid or particularly stable. What we can show, however, is that the employment rate remains very similar if we condition it on refugees having earned at least the national minimum income. Our group of refugees includes individuals who are uniquely identifiable as either being a quota refugee or an individual seeking protection and receiving legal permanent residency[4]. In order to distinguish this group of refugees from other types of immigrant with respect to mean characteristics, employment, and outmigration, we initially also include EU28, non-EU28 labor, non-EU28 student and non-EU28 family migrants. Ultimately, this results in, respectively, 151,089 and 107,136 pooled observations on refugees and the remaining migrant groups with employment information. In the main analysis regarding the employment path of refugees, we then limit the sample to refugees who remained in Sweden throughout the sample period (on average roughly 87%; see **Table 1**).

In line with related studies from Denmark (Schultz-Nielsen, 2017) and Norway (Bratsberg et al., 2017), our strategy is to exploit the rich Swedish register data, including information on

[3]We use the standard European definition of employment—being employed at a minimum of one base value during the month of September. The base employment value is defined as an annual income of at least 44,000 Kronor (equivalent to the social security payment). It is generally used to calculate the value of unemployment insurance.

[4]During this period, all asylum-seekers, when being accepted as refugees, received permanent residence permits. Family members arriving later are not categorized as refugees and are not included in the analysis.

admission status upon arrival and country of origin. In this way, we avoid using less-assured measures based on a combination of country of origin and year of arrival or even self-reported reasons for migration. As we pool all those who arrived in either 1998, 1999, or 2000 as refugees and observe them from Year 1 up to a maximum of 12–14 in the years 1998–2012, we avoid posing strong assumptions with respect to cohort differences and age. While the cohort approach facilitates a longitudinal integration analysis, it does not reveal whether the evidence is representative for the different cohorts. For instance, there might be marked differences compared to the cohorts who arrived after the immigration reform in 2016 which limited permanence of stay and potential family reunion.

In our descriptive analysis and later regression adjustment, we make use of a rich set of controls such as age, sex, level of schooling (seven levels from less than lower-secondary schooling to postgraduate degree level), marital status (couple, singe, divorced, widowed), number of children, municipality of residence (Stockholm, Gothenburg, Malmö, Other), country of birth and years in Sweden. The control "Years in Sweden" starts in the year in which individuals obtained their residence permit[5]. Of particular interest, the dataset also contains information on the immigrant entry category, which makes it possible to track the employment integration pattern of refugee groups over time.

Descriptive Statistics

Before we conduct the aforementioned detailed analysis of different major refugee groups, it is instructive to describe the overall group and highlight how it differs compared other groups of immigrants who were admitted to Sweden as EU citizens, non-EU students, labor or family migrants. **Table 1** shows the pooled means from the years 2001 to 2012. It immediately becomes clear that there is marked heterogeneity with respect not only to employment but also to the potential determinants of employment such as age, sex, marital status, children, education[6], residence, age at migration, and percentage of those who have been in Sweden for at least 12 years. For instance, labor migrants are relatively likely to be employed and predominantly male and to have a low average number of children; 50% of our observations are recorded in Stockholm. Compared to this, refugees are less likely to be employed, less likely to be male, more likely to be married, have on average more children and are more spatially dispersed throughout Sweden.

As indicated by the last row in **Table 1**, admission classes seem to differ considerably with respect to outmigration. This is confirmed by **Figure 1**, which plots the remaining stock of the 1998–2000 immigration cohort over the years since migration. Outmigration is a threat to any cohort integration study, as a narrowing gap might be driven by negatively selected outmigration. If, instead, the focus is on the population remaining in the country, this cannot be considered as representative of the original cohort. It would therefore be good to have as little outmigration as possible. By focusing on the refugee cohort, however, we are studying a group with comparably little outmigration. Our data suggest that, for this Swedish immigrant cohort, after 3 years, only 50 and 70% of the non-EU28 labor and EU28 immigrants remain in Sweden. In contrast to this, almost the entire entry cohort of humanitarian immigrants still resides in Sweden. This pattern is reinforced over time so that, after 12 years, roughly 90% of the original humanitarian but only20 % of labor immigrants have stayed in Sweden.

The presented pattern is in line with related empirical evidence for the UK (Dustmann and Weiss, 2007) and Norway (Bratsberg et al., 2017) and highlights the need to understand outmigration patterns and immigrant heterogeneity, as well as the economic and fiscal importance of the refugee group (Bratsberg et al., 2017).

From now on and throughout the main part of our study, we limit our analysis to refugees. In particular, we focus on the eight main source countries of Iraq, Iran, Afghanistan, and Syria (the Middle East), Somalia, Ethiopia, and Eritrea (East Africa) and Bosnia-Hercegovina (Europe). While the literature (Dustmann et al., 2017) is acknowledging heterogeneity between admission statuses, the evidence with respect to heterogeneity between refugees is limited. This is surprising as there is no reason to assume homogeneity for individuals who seek protection for a variety of reasons and within very diverse contexts.

Like **Tables 1**, **2** reports the mean statistics for refugees by country of origin. Again, a striking heterogeneity with respect to employment, socio-demographic characteristics and outmigration becomes apparent. The mean employment share is very similar for Iraqi, Iranian, Afghan, and Syrian refugees at around 40–44 %. In contrast to this, only 26% of Somali and over 60% of Ethiopian, Eritrean, and Bosnian refugees are employed. The pattern holds for employment with a minimum income of 50,000 Swedish kronor (about 6,000 US dollars). Despite their similarity in employment, Iranians and Iraqis differ markedly with respect to education, sex, marital status, and residence. The same can be observed for Eritreans and Ethiopians.

Turning to outmigration, we again visualize the remaining share of the entry cohort. **Figure 2** suggests that, after 5 years in the country, some refugee groups—most notably Somalis and Ethiopians—return or onward migrate. This is in line with research highlighting the onward migration of (naturalized) Somalis from Sweden to the United Kingdom due to the right of free movement, a critical mass of Somalis in the UK and a self-proclaimed "nomad" culture (Osman, 2012). In the case of immigrants from Somalia, this outmigration results in lower employment rates, as there is evidence of a positive selection into outmigration with respect to self-employment (Carlson and Galvao Andersson, 2017).

Consequently, focusing on humanitarian immigrants (and even the geographical region such as East Africa) alone will not be sufficient to avoid an attrition bias

[5]Earlier studies have shown that limited time in the asylum procedure increases the labor-market integration process (Bevelander and Pendakur, 2009).

[6]Education is measured either when individuals are assessed by the employment service during the introductory program or after re-education in Sweden. In the introductory program, foreign qualifications and certificates are evaluated and converted to Swedish standards. This probably increases the transferability of foreign qualifications.

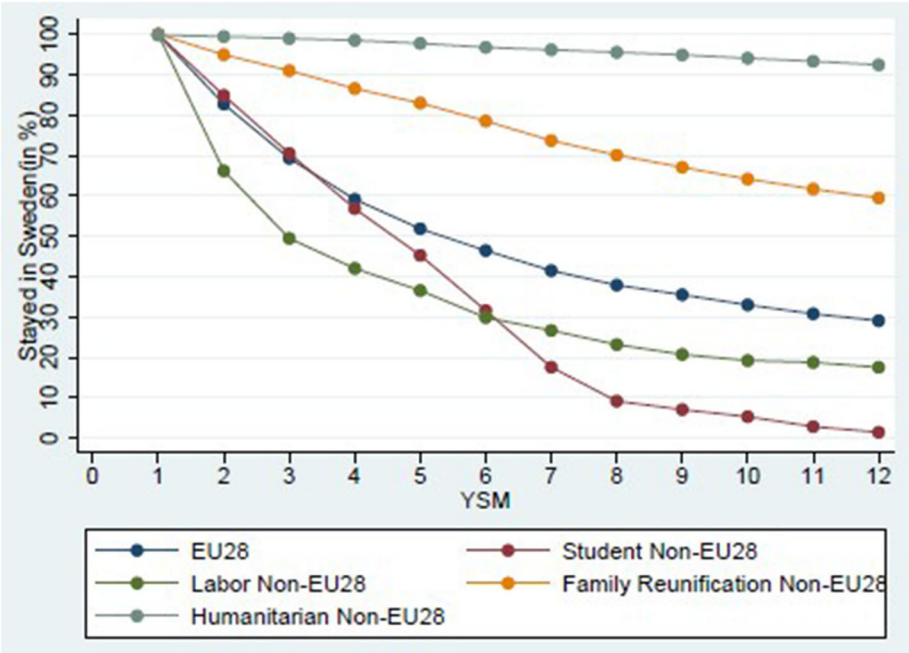

FIGURE 1 | Outmigration by category.

in our study of longitudinal integration[7]. Hence, in our main analysis of employment integration, we focus on selected individuals who stay throughout our data window.

EMPLOYMENT INTEGRATION

In **Figure 3** we visualize the average employment for each refugee group from between 1 and 12 years since migration, conditional on observing the individual over the entire time span. In addition, for comparability, we also plot average employment figures for a native control group, based on the same age filter in the year 1999 and followed over the same window of time. While the native share of those employed is very stable at around 88%, each refugee group follows a more or less steep increase after a low entry average, and hence slowly although not fully catches up, which is in line with the model of human-capital investment and integration in Duleep and Regets (1999).

Focusing on the initial employment likelihood after 1 year in the country, we can identify a group of very low and medium–low employment integration. Iraqis, Iranians, Afghans, Syria, and Somalians only had an employment share of around 10 %, whereas already 20, 30, and 40% of Bosnians, Eritreans, and Ethiopians, respectively, have been employed after 1 year in the country. In contrast to the prediction by Duleep and Regets (1999), however, the groups with the lowest relative employment upon arrival—and hence the highest incentive to invest to catch up—do not experience a steeper employment growth. Again Bosnians, Eritreans, and Ethiopians increase their employment share the most up to the seventh and eighth years since migration. After that the employment share seems to stagnate at between 70 and 80%. Migrants from Middle Eastern countries are on a slower growth path up until 10–12 years since migration, reaching a 50–60% employment rate, whereas Somalian refugees also improve their relative employment but at a substantially slower rate.

Splitting the sample into male and female refugees causes a few interesting patterns to emerge (**Figure 4**). First, the two groups seem to prevail in both subsamples while being more marked among women. Second, for all origin groups except the Ethiopians, the initial female employment shares were lower than those of their male counterparts. Both groups are catching up to remarkable yet varying degrees. For men from Bosnia, Ethiopia, and Eritrea, the employment growth plateaus after roughly 6 years since migration. Among these men, only the employment share of Bosnian men who entered Sweden as refugees decreases from the seventh year since migration. The same hump shape can be observed for Syrians on a much lower employment level. For male refugees from Iraq, Iran, and Afghanistan, growth is slower but continues until the 12th year since migration; for their counterparts from Somalia, the growth almost stagnates. While the employment path of Bosnian refugees is comparable to evidence for refugees in Norway (Bratsberg et al., 2017), we do not observe this for the majority of refugees to Sweden. It is noteworthy that the drop is absent for most of the groups despite the confounding Great Recession.

[7]A breakdown by sex can be found in **Supplementary Tables 1, 2**. The tables highlight marked gender differences within and across countries. As a consequence, we conduct our main analysis for men and women separately.

TABLE 2 | Mean characteristics.

	All	Iraq	Iran	Afghanistan	Somalia	Syria	Ethiopia	Eritrea	Bosnia
Employment status									
Employed	0.44	0.40	0.42	0.41	0.26	0.44	0.65	0.64	0.61
Employed (>50 K)	0.43	0.39	0.42	0.40	0.25	0.44	0.65	0.64	0.61
Socio-demographics									
Age	39.26	39.25	39.84	39.58	35.70	41.06	38.43	40.38	39.39
Male	0.65	0.73	0.54	0.72	0.43	0.52	0.62	0.58	0.49
Couple	0.72	0.75	0.66	0.82	0.58	0.68	0.45	0.58	0.68
Single	0.16	0.14	0.17	0.10	0.25	0.17	0.37	0.27	0.20
Children	1.64	1.66	1.71	2.23	1.80	1.71	0.77	1.12	1.46
Human capital									
Some college	0.33	0.39	0.25	0.40	0.09	0.31	0.29	0.16	0.17
Municipality									
Stockholm	0.32	0.37	0.25	0.43	0.41	0.41	0.58	0.52	0.08
Gothenburg	0.20	0.18	0.21	0.19	0.27	0.13	0.19	0.21	0.23
Malmö	0.14	0.13	0.05	0.18	0.05	0.06	0.05	0.01	0.23
Migration-related									
Citizenship	0.57	0.59	0.57	0.40	0.31	0.64	0.58	0.55	0.60
Age at arrival	32.67	32.67	33.28	32.93	29.11	34.38	32.00	33.85	32.77
Year of arrival	1999.03	1999.13	1998.79	1999.49	1998.75	1999.06	1998.93	1998.88	1998.70
Stay ≥12 years	0.86	0.86	0.85	0.83	0.68	0.87	0.84	0.92	0.90
N	104,791	65,141	8,424	5,359	3,216	1,886	1,539	1,017	18,209
In % of sample		62.16	8.04	5.11	3.07	1.80	1.47	0.97	17.38

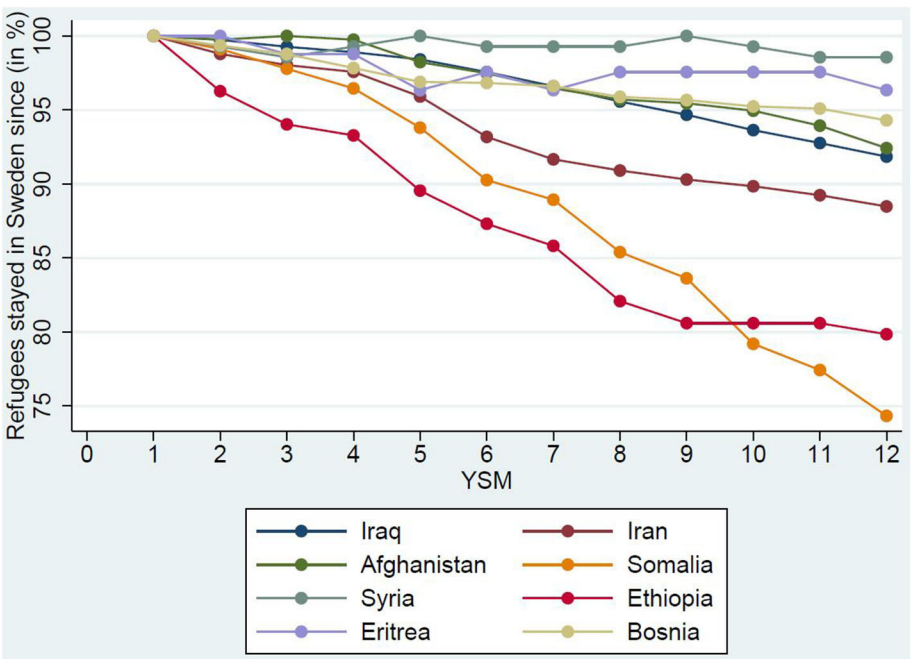

FIGURE 2 | Outmigration by country of birth.

As in the Norwegian case, however, we find a slower but continuous catch-up for female refugees within the first 12 years. However, our data even suggest that the employment share in Year 12 is slightly higher for Ethiopian and Eritrean women compared to their also comparatively assimilated male counterparts.

WHAT DRIVES THE GAPS BY COUNTRY OF ORIGIN?

In order to design economic policy suitable to this integration heterogeneity, naturally we would like to identify the underlying drivers of the gaps between refugees and between refugees

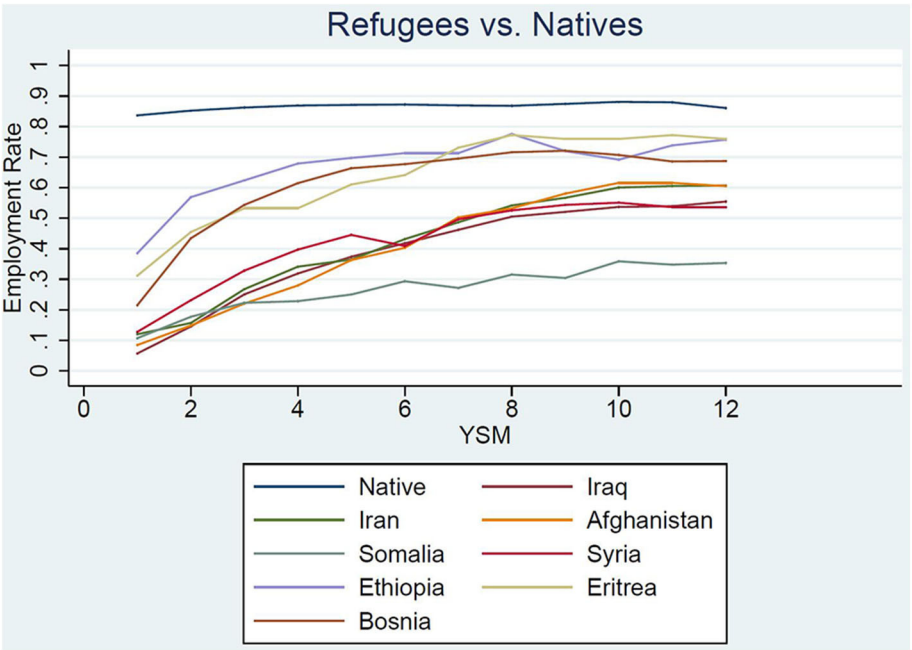

FIGURE 3 | Employment rate by country of birth.

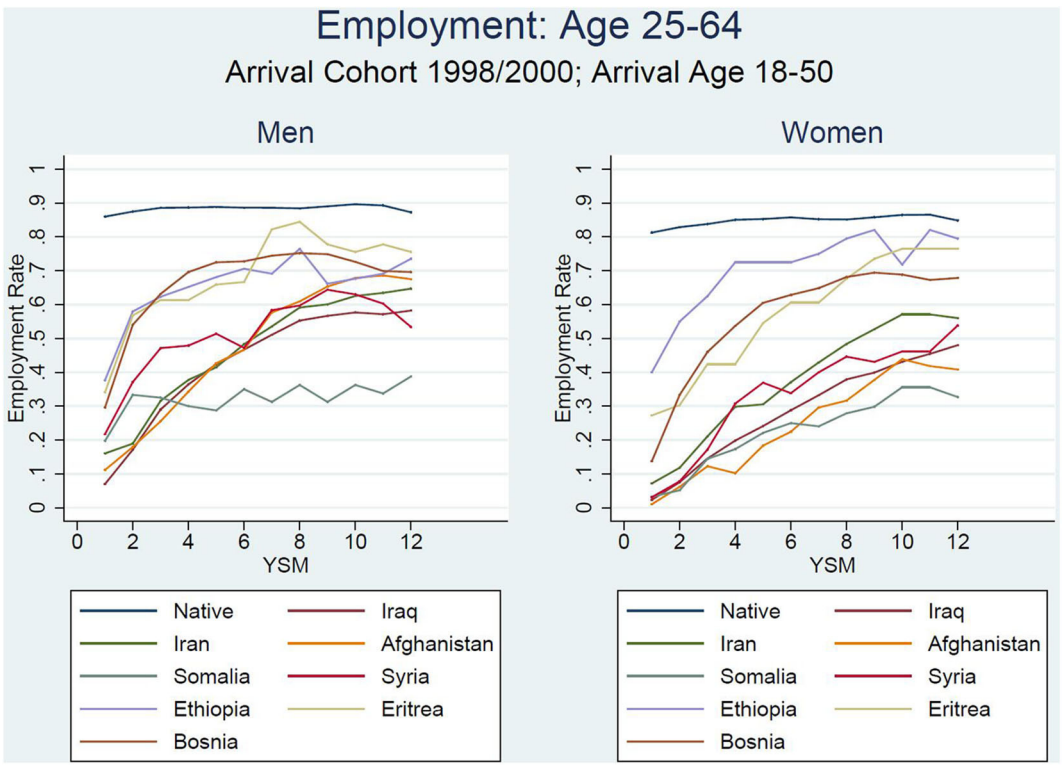

FIGURE 4 | Employment rate by country of birth and gender.

and natives. As a first step into this direction, we want to ascertain whether or not differences in observables related to socio-demographics and latent human capital are a critical factor. Regarding labor-market outcomes, human capital in particular is an intuitive first candidate to test, as it is the key success factor in traditional human-capital theory. Following this argument, one would expect differences in the employment paths to decrease as soon as these groups are rendered comparable with respect to human capital. Note that, interestingly, our descriptive table is at odds with this prediction, as comparably low shares of college attendance coincide with high employment shares. A remaining gap suggests unobserved heterogeneity related to country of origin. It is noteworthy that this can still be related to human capital if it differs by origin or transferability, or even discrimination, social networks, trauma or source-country welfare incentives. In this paper, however, we focus on the role of the above-mentioned observable differences and leave more detailed explanations for future research.

In particular, we estimate a male and a female linear probability model of employment for natives and refugees alike. In order to derive an assimilation path relative to native employment, we include a country-of-origin indicator and interact it with a third-order polynomial of years since migration in the fashion of works such as that by Bratsberg et al. (2014). At the same time, we fully interact the group indicator with a third-order polynomial of age and include an error term and a constant. As our variable of interest is time-invariant, we do not include any individual fixed effects. In order to make the groups comparable, however, we also control for human capital through educational attainment, marital status, number of children, contextual municipality (Stockholm, Gothenburg, Malmö, Other and year fixed effects. The latter two capture the effects of local labor-market disparities and macro shocks. Note that a prior decision to move to a regional labor market is an endogenous choice which could also vary by refugee group. In order to capture regional macro developments, we also fully interact municipality and year[8]. It is noteworthy that we therefore assume equal year fixed effects and association with the business cycle for all groups (Bratsberg et al., 2014). The detailed regression output for men and women can be seen in **Supplementary Tables 4, 5**.

While this needs to be kept in mind, it should be a less-severe issue through the same admission process. Moreover, we can rule out major differences with respect to the institutional and legal framework (processes) and the related uncertainty which has been shown to impede integration (Dustmann et al., 2017).

As we are mainly concerned with the remaining heterogeneity, we again report the resulting employment paths in two figures. Technically, each line is a model prediction for a specific immigrant group, where we keep all values constant at the mean except years since migration and age. For instance, in **Figure 5** we can see that Eritrean male refugees assimilated in terms of

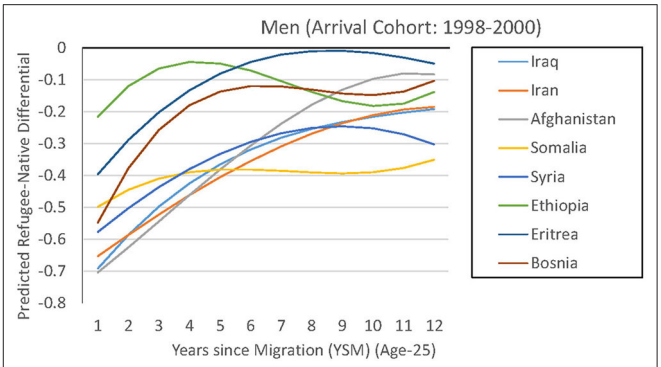

FIGURE 5 | Regression-based prediction of refugee employment differential (men).

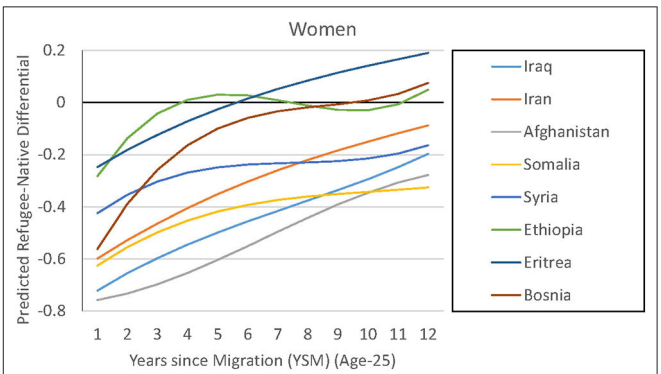

FIGURE 6 | Regression-based prediction of refugee employment differential (women).

employment from a gap of −40 to −5% points (between 1 and 9 years since migration). The regression-adjusted employment path is hence on a higher level than its unadjusted counterpart. The remaining gap is not statistically different from zero, as can be seen in **Supplementary Table 3**, which reports the predicted immigrant–native employment differentials for four, 8 and 12 years since migration, together with the underlying standard errors[9]. The same can be observed for the group from Bosnia-Hercegovina. These are examples for groups that experience strong employment growth despite less-favorable observable characteristics, so that they are unlikely to be the main gap driver. An interesting case in the male sample is Ethiopian refugees, whose observable differences to natives seem to be the main explanation for their initially low employment level. Adjusting these differences, they are the group with the highest employment share in the first year since migration. Overall, for them and for the remaining groups, the regression adjustment decreases the gap with natives and other refugees over the entire timeframe but can only be considered a smaller part of the explanation, as gaps, ranking, and growth profiles remain for most of the groups.

[8]Note that we are not interested in identifying the precise effects of these determinants, which is why we refrain from discussing endogeneity related to factors such as residence.

[9]The detailed coefficients of the male and female estimations are available on request.

In our female sample, we can present similar observations (**Figure 6**). In fact, making observables comparable means that Ethiopian, Eritrean, and Bosnian women are climbing to a higher employment path—this results in an employment share that is even higher than that of their Swedish counterparts. Notably smaller gaps with natives can also be detected for female refugees from Syria and Somalia. Two more observations can be made: first, there is still a group of refugees who start at a very low employment level. Afghan and Iraqi women start at an employment share that is up to 80% points lower than that of natives. Moreover, the employment path is less hump-shaped and more linear for a lot of groups, which is not in line with decreasing incentives to invest in host-country-specific human capital. Again, we can see that these observable characteristics do play a role but that they cannot account for group differences among refugees or for the entire gap between them and the natives. Notable exceptions are the group of Ethiopian, Eritrean, and Bosnian women.

CONCLUDING DISCUSSION

Globally growing numbers of asylum-seekers have also found their way to Sweden and put refugee labor-market integration high on the political agenda. Just as in many other European countries, the employment levels of immigrants in general are lower than for natives (OECD, 2017). Immigration to Sweden over recent decades has, to a considerable extent, been by refugees and could partially explain the native–immigrant employment gap. However, few studies have exclusively focused on possible dissimilarity in employment integration by country of origin and gender in explaining refugees' overall lower employment levels. In order to shed some light on this highly important issue, we have (a) studied the overall employment integration heterogeneity by country of origin, (b) described whether refugee groups are able to close the gap or fall behind relative to Swedish natives' employment levels and (c) provided insights into whether refugee differences with respect to demographics and human-capital characteristics could be a potential driver of heterogeneity.

In line with earlier studies—Bratsberg et al. (2017) for Norway, Schultz-Nielsen for Denmark (2017) and Bevelander (2011) for Sweden—our descriptive cohort analysis has shown that initial employment levels for both males and females and a number of groups of refugees are low. Female and male individuals from Iran, Iraq, Somalia, Syria, and Afghanistan do reach employment levels of roughly 10–20% on arriving in the country, whereas those from Bosnia, Ethiopia, and Eritrea have ∼30–40% in employment levels on entering the labor market. Subsequently, these two groups show different employment integration patterns. Over time, the "catch up" process is somewhat faster and more extensive for the Bosnian, Eritrean, and Ethiopian group than for the Asia/Somalia group. However, no "falling behind" is evidenced by our analysis. All groups do increase their employment levels but from different starting points and at varying speeds.

Our further analysis, controlling for observable demographic and human-capital characteristics, shows that all refugee groups—both males and females—gradually increase their employment probability over time. The underlying estimated model has, among other effects, the positive effect of education, being in a couple, having children and being in employment in Stockholm. While differences between groups decrease after regression adjustment, the pattern of heterogeneity remains intact and is non-negligible. Notably, however, both male and female refugees from Bosnia and Eritrea, as well as Ethiopian women, have close to, the same or an even higher probability of being employed as do their Swedish counterparts. These results indicate that, for these latter groups, observable human-capital and context characteristics explain the—comparably smaller—difference in employment levels, although the time to parity takes about 4–8 years of living in the country. Considering that natives tend to be less likely to be in a couple, have less children and more dispersed across Sweden, the difference in the Swedish education distribution could be a gap driver. While, we have not conducted a detailed decomposition here, Luik et al. (2018) show that the native share of lowest education tends to be lower than in the group of refugees, whereas the share of higher education is comparable. It suggests that an on average higher education could close and even reverse the gap. Any remaining employment probability differentials for female and male refugees from Iran, Iraq, Afghanistan, Syria, and Somalia, relative to Swedish females and males, are between 10 and 30%—even after 12 years in the country.

The results found for Bosnian, Iranian, Iraqi, and Afghan refugees are on a par with earlier cross-sectional studies for this group (Bevelander, 2011; Bevelander and Pendakur, 2014). Nevertheless, the inclusion of other male and female refugee groups does show that Bosnian, Eritrean, and Ethiopian refugees of *both* sexes find their way in the Swedish labor market and reach parity with their Swedish-born counterparts. This result stands in clear contrast to those of other European studies for Norway and the Netherlands (Bakkaer, 2015; Bratsberg et al., 2017), where no refugee group reaches parity with their native counterparts. In relation to the refugee groups with lower entrance and speed rates, their employment levels are also clearly higher compared to, for example, studies from Denmark and the Netherlands (Bakkaer, 2015; Schultz-Nielsen, 2017).

Any remaining differences between refugee groups and natives as well as between refugee groups are difficult to assess within this analysis. Possible differences could be due to the fact that larger proportions of the refugee groups studied have gained access to Sweden under the UN resettlement program. Earlier studies have shown that resettled refugees have a slower employment integration rate compared to refugees who seek and are granted asylum at the border (Bevelander, 2011). The argument is that those who have the ability and resources to travel all the way to Sweden and seek asylum are positive selected compared to those who are chosen from refugee camps around the world, and that resettled refugees will probably have fewer networks to help them in the new country (Hatton, 2011). These two arguments also apply to the overall group of refugees, as emigration-inducing shock can affect either the entire population or a selected subgroup (Chin and Cortes, 2015). The latter can differ with respect to labor-market skills and the extent of their local social networks. As in the case of Somali immigrants, this might not only accelerate integration

but also lower onward migration (Osman, 2012). Other group variations could lie in the differential transferability of human capital through, for instance, differences in the origin-country local educational system, job, and skill distribution, language or even historical ties (i.e., through developmental work). This, again, might affect the duration of and uncertainty during the asylum process, as well as the timely investment in Swedish human capital (Dustmann et al., 2017). Naturally, and finally, the emigration-inducing shock differs for each group, so that human and health capital might have been diminished to different degrees.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

SUPPLEMENTARY MATERIAL

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Social Trust and Anti-immigrant Attitudes in Europe: A Longitudinal Multi-Level Analysis

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Research investigating how social conditions influence attitudes about immigrants has focused primarily on demographic and economic factors as potential threat inducing contexts that lead to anti-immigrant sentiment. However, the empirical evidence supporting this link is mixed, while social cohesion indicators such as the influence of social trust, have largely been left unexamined. This article uses the European Social Survey (2002–2016) to test how differences in social trust, both within and between countries influence attitudes about immigrants. Results from longitudinal analyses show that countries with higher levels of social trust have more favorable attitudes toward immigrants, and while changes in social trust over time are small, they result in comparably large changes in anti-immigrant attitudes, even when controlling for other social factors. These results are robust across different model specifications and data sources.

Keywords: immigration attitudes, social trust, social change, group threat theory, longitudial analysis

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INTRODUCTION

There has been a considerable amount of literature dedicated to attitudes about immigrants, often looking for relationships between different social contexts and differences in attitudes in societies. Much of this attention is guided by what has grown to be known as group threat or realistic conflict theory. In an attempt to tie contexts to attitudes, scholars have relied heavily on Blumer's seminal essay *Race Prejudice as a Response to Group Position* (1958), which argues that prejudice is a result of feelings of threat posed by some out-group. However, in the 60 years since its writing the evidence supporting this theory is in a state of disarray. Typically analyzing the importance of how contexts such as proportions of foreign born populations, or economic conditions influence attitudes about immigrants, researchers have found mixed results (for reviews see: Ceobanu and Escandell, 2010; Fussell, 2014; Pottie-Sherman and Wilkes, 2017; Kaufmann and Goodwin, 2018). Instead, the evidence supporting the link between contexts and prejudicial attitudes appear either when analyzing change (Meuleman et al., 2009; Lancee and Pardos-Prado, 2013) or in what can be called "non-material contexts" such as media, political and religious environments. Still, few articles have analyzed how changes in non-material contexts might increase threat, and as the theory suggests, prejudice. This article advocates for a return to Blumer's writing on prejudice, and makes a case for a dynamic interpretation of the theory that focuses on how non-material contexts such as social trust, and particularly changes in those contexts, influence prejudicial attitudes toward immigrants in society.

Surprisingly, even though social trust is common in social scientific research, its relationship to prejudice and specifically anti-immigrant attitudes is mostly unexamined. When scholars have considered trust as it relates to immigration, it is commonly operationalized as a dependent variable, and even subject to the same material contextual predictors testing if proportions of immigrants and economic condition are associated with individual or country level trust (Delhey and Newton, 2005; Stolle et al., 2008; Ziller et al., 2018). However, these results are also mixed. For example, Fairbrother and Martin (2013) show that levels of inequality matter for trust between but not within societies longitudinally. Dinesen and Sønderskov (2015) argue that ethnic diversity at the neighborhood level undermine individuals' social trust, while others argue that this effect disappears when models include metrics for intergroup contact (Koopmans and Veit, 2014; Mckenna et al., 2018), and McLaren (2017) shows the relationship between levels of immigrants and social trust is a function of individuals' level of national identity.

Yet, as it is argued in the social cohesion literature, social trust should be seen as both an individual's perception of the world around them, as well as state of affairs in a society that should be analyzed at the level of the nation state (Chan et al., 2006; Schiefer and van der Noll, 2017). Indeed, it is becoming more common to apply trust at the country level to test associations with other aspects of society including environmental attitudes (Fairbrother, 2016), support for the welfare state (Edlund, 2006), and health (Kim et al., 2011). Both the importance that the threat literature places on non-material contexts, and the import role societal trust plays in relation to other aspects of society leads to the question: Are more trusting societies more welcoming toward immigrants? Also, do changes in the level of trust within societies translate to more or less friendly attitudes toward immigrants? This study addresses these questions by analyzing macro-level generalized trust indicators both within and between societies using multi-level analysis of eight waves of the European Social Survey between 2002 and 2016. To ensure the findings are robust, supplemental country-country analyses testing historic trust levels on contemporary immigration sentiment metrics using the European and World Values Surveys are also reported.

GROUP THREAT, THE CASE FOR NON-MATERIAL CONTEXTS, AND CHANGE

The previous sociological literature about how context influences attitudes toward immigrants has focused on testing aspects of group threat theory, which argues that in-groups feel they have exclusive proprietary claims to aspects of society (Blumer, 1958) and when those proprietary claims are under threat, prejudicial attitudes toward out groups are the result. While this theory has been elaborated upon to include, for example, different types of threat in different conditions (Blalock, 1973), contemporarily what may be its largest contribution is the importance it places on prejudice as a collective process. This, as Bobo notes, was intended to "shift analytical attention away from processes internal to the individual while still recognizing that individual prejudice was a powerful social force," the strength being that it is "a general attitude orientation involving normative ideas about where one's own group should stand in the social order vis-à-vis an out-group" (Bobo, 1999, p. 448–449).

This has led researchers to pursue a multilevel analytical framework, analyzing whether material indicators such as economic stress and high proportions of out-group populations might provide evidence of higher levels of prejudicial attitudes. Quillian's study 1995 argued that collective threat, manifest as out-group prejudice, was a function of these two factors finding evidence of this relationship in 12 European countries. Since, many scholars have tried to replicate these findings across a multitude of different contexts with mixed results. However, in their meta-analysis of studies using proportions of immigrants as a threat inducing contextual factor, Pottie-Sherman and Wilkes (2017) caution researchers and policy makers attempting to make an empirical or conceptual link between out-group size and attitudes. They write, "While some find a positive relationship between out group population size and attitudes, other's find a negative relationship or not relationship at all" (p. 243). It could be that measuring population size is too coarse of a metric to be applied to Blumer's threat condition, especially since as immigration populations accumulate over time there are increased chances of inter-group contact which has been shown to reduce out-group prejudice (Allport, 1954; Pettigrew, 1998; Pettigrew and Tropp, 2006). These two processes occurring in tandem may be confounding population based studies testing threat (Schlueter and Scheepers, 2010).

Quillian's study also found evidence that economic conditions that induce threat in societies are related to more anti-immigrant attitudes. Others have supported this claim, finding a negative relationship with unemployment rates and decreases in GDP (Meuleman et al., 2009; Billiet et al., 2014) Still, similar to the research on proportions of immigrants, the empirical evidence that supports the claim that conditions of economic threat drive prejudice is mixed, with other studies finding no relationship (Hjerm, 2007; Sides and Citrin, 2007). Clearly, the literature supporting the link between material threat conditions in societies and anti-immigrant attitudes is tenuous. In fact, in a review of the literature Hainmueller and Hopkins went so far as to call it a "zombie theory" 2014.

The mixed results in the empirical findings illustrated by reviews of the literature suggests a reckoning for group threat theory. In this case, it is productive to return to the original text for guidance for what contextual factors should be important in the group processes that might induce perceptions of threat. In it, Blumer lists four types of feelings that accompany group prejudice. "They are (1) a feeling of superiority, (2) a feeling that the subordinate race is intrinsically different and alien, (3) a feeling of proprietary claim to certain areas of privilege and advantage, and (4) a fear and suspicion that the subordinate race harbors designs on the prerogatives of the dominate race" (1958, p. 4). It is true, that researchers have linked individual level attributes to each of the four traits that Blumer lists. For example, the social dominance orientation research addresses Blumer's association of feelings of superiority. It suggests that societies minimize group conflict creating ideologies that

promote the superiority of one group over another. This is done in part through the creation of legitimization myths that justify these feelings of superiority (Pratto et al., 1994). Furthermore, studies about cultural distance lend support to the idea that outgroups that are perceived as "intrinsically different" spurn more prejudice than do outgroups that are more similar to the host population. In support of this idea Bohman and Hjerm (2014) found that more religiously homogeneous societies were more immigrant averse. Also, while prejudice is sometimes said to be related to non-western immigrants, Manevska and Achterberg (2013) find that this relationship is dependent on individual's social dominance orientation. Both of these areas of research focus on individual traits or perceptions, and where there is support for proprietary claims driving prejudice it also lies in people's perceptions of the economy or feelings about immigration levels, that may have nothing to do with the material conditions in their environments (Nadeau et al., 1993; Kuntz et al., 2017).

In contrast, non-material contexts have been more consistently linked to prejudicial attitudes. Media environments, religious, and political contexts have all been shown to have significant and substantial influences on attitudes about immigrants in both comparative and longitudinal studies. Hopkins (2010) analyzed a variety of non-material indicators that might influence anti-immigrant attitudes and found that both local-level hostile political policies, and national level political rhetoric in the post September 11th era had negative effects about people's attitudes toward immigrants in the United States. In the European context, political parties that incorporated anti-immigrant rhetoric negatively influenced people's attitudes about immigrants especially if they identified with that political party (Bohman, 2011). Longitudinal studies in Germany (Czymara and Dochow, 2018), Denmark and the Netherlands (Klingeren et al., 2015) show that media saliency of the issue of immigration tends to result in more negative attitudes about immigrants, but that positive coverage of the issue can positively influence them as well. The evidence these studies provide are in line with the theory, since Blumer argues that influential people and media agents help shape whether the in-group members should view their position as threatened in relation to the sub-ordinate out groups. This helps to explain how the process unfolds in relation to contexts under which the issue of immigration becomes culturally and politically salient.

However, it arguably does not help to explain why people and societies are vulnerable to anti-immigrant prejudices. The final requisite Blumer theorizes is "a fear and suspicion that the subordinate race harbors designs on the prerogatives of the dominate race" (4). In themselves, ideas that another group is intrinsically different or inferior, do not pose a threat to the proprietary claims of in-group members unless there is a fear that the out-group has the idea that they may be able to disrupt those proprietary claims and assert them as their own. As has been noted, the group threat literature has primarily focused on linking prejudicial attitudes to material resources that, under threat of deprivation by an out group should trigger feelings of threat. However, since the empirical evidence supporting this link only appears in individuals' feelings about, rather than objective levels of material conditions; then establishing why there is a miss-match between objective vs. perceived conditions is important. It is possible that environments of social (dis)trust engender an environment that induce threat, and in these environments, group based identities become salient and in-group members begin to believe that out groups are (1) inferior, (2) intrinsically different, and that they harbor designs against the proprietary claims of the in-group (3 and 4). In contrast, trusting environments would insulate people from perceiving that others harbor designs against them and prevent their perceived deprivation from being exaggerated, and thus not perceive outgroups as threatening.

Social Trust

Sociologically speaking social trust is difficult to define. In their writing about the importance of social trust as a dimension of social cohesion Chan et al. explain that it is a quasi-tautology since "it is virtually impossible to conceive of a situation in which we say people are sticking together even though they refuse to trust or cooperate with each other" (2006, p. 289). In other words a certain degree of social trust is a requirement for a cohesive society since, it relies on the expectation that other people's behavior is predictable and that they are led by positive intentions (Schiefer and van der Noll, 2017). However, social trust exists in multiple levels. At the individual level, Freitag and Traunmüller (2009) argue that people harbor different "spheres of trust," one sphere encompasses individuals' close personal and familial ties, and another generalized trust that is extended to a generalized other that is not personally known. Researchers have wondered whether individuals are responding about feelings toward their own group when asked about whether, generally speaking they feel that they can trust others, however recent research suggests when thinking about the "generalized other," high trustors include immigrants into this group (van der Linden et al., 2017). As other scholars have pointed out, a possible mechanism for this is the "social intelligence" that high-trusting individuals, who are more likely have a diverse set of experiences, receive in their lives. Over time their experiences inform their judgments about who should and shouldn't be trusted and they are able to rely less on heuristics based on ethnic or cultural stereotypes (Yamagishi, 2001; Herreros and Criado, 2009). In contrast to the type of "bonding" social capital characterized by the inner sphere of close contacts, this social intelligence is a "bridging" social capital that extends to wider ranges of the generalized other. Those with higher levels of bridging social capital, then would not associate out-group members as threatening (Putnam, 2000; Chu and Yang, 2019).

As a collective attribute at the group level or country level, Lewis and Weigert argue that "trust is applicable to the relations among people rather than to their psychological states taken individually. Therefore, we may say that trust exists in a social system insofar as the members of that system act according to and are secure in the expected futures constituted by the presence of each other or their symbolic representations" (Lewis and Weigert, 1985, p. 968). Similarly, as an aspect of social cohesion Chan et al. (2006) argue that social trust should be analyzed at the level of the nation state, since it is an aspect of the political community

of each society. In this way, social trust is conceptualized as a state of affairs that guides the citizens of a country as they navigate the economic, institutional, and private spheres of their lives. This has been tested in economic terms with evidence that trusting societies spur economic growth through the lowering of transaction costs (Fukuyama, 1995). This idea, that higher levels of social trust grease the gears of society, has also been found to be important for support of welfare state policies (Edlund, 2006), support for state intervention in environmental policies (Fairbrother, 2016), and health outcomes (Kim et al., 2011).

Social trust is key aspect of the milieu where the group processes described by Blumer take place. I argue that as groups define their position in relation to one another the environment of social trust should be a predictor about whether that collective process of definition results in feelings of threat that results in prejudice. In other words, in low trust environments in-group members "fear and suspicion that the subordinate race harbors designs on the prerogatives of the dominant race" should be able to flourish more than in high-trust environments. There is limited empirical evidence supporting the link between generalized trust and attitudes about immigrants. For example, Herreros and Criado (2009) found that generalized social trust at the individual level is linked to lower levels of anti-immigrant attitudes using the 2002 round of the ESS, even controlling for contextual level threat indicators at the country level. This finding is supported with evidence from the United States, however the link between trust and prejudice differs among different ethnic and racial groups (Chu and Yang, 2019). Additionally, applying trust to the macro level Manevska and Achterberg (2013) found that controlling for many different contextual level variables in the ESS, only social trust remained statistically significant. Finally, using the 2008 wave of the European Values Survey, Ekici and Yucel (2015) report that individual and contextual level social trust were associated with lower level of religious and racial prejudice. While these findings are encouraging, to the author's knowledge, no study has yet to test the relationship between social trust and attitudes about immigrants longitudinally while also modeling the longitudinal effects of material conditions. Understanding the importance of different levels of social trust, it is hypothesized that more trusting individuals will extend their sphere of trust to immigrants.

Hypothesis 1: Individual-level social trust will have a negative relationship to anti-immigrant attitudes

Applying the same idea to contextual environments of social trust, it is hypothesized that in societies with high levels of social trust will be prejudice averse, insulating their citizens from the type of inter-group relations that induce threat feelings.

Hypothesis 2: Country-level social trust will have a negative relationship to anti-immigrant attitudes

Change Matters

Blumer however, argues that prejudice is "fundamentally a *collective process*" (1958, p. 3, emphasis in original) where the dominant group understands its social position in relation to the subordinate group. Therefore, some of the inconsistent findings identified in the literature might be because studies are applying static empirical analysis to an inherently dynamic relationship. Recently, scholars have focused more on an interpretation of group threat theory as a dynamic process that accounts for change. This approach posits that individual changes in prejudicial attitudes are a reaction to changes in the contextual conditions specified by group threat theory. In this case, changes in conditions make salient issues of intergroup conflict, so that rising or falling proportions of outgroup members overtime should correspond to changes in attitudes. Meuleman et al. summarized this dynamic interpretation to the theory arguing that "actual competition could remain constant at a high level without affecting outgroup attitudes. It is only when sudden changes in minority group size or economic conditions occur that outgroup attitudes evolve." (2009, p. 354). This could be due to the fact that, as Blumer noted, prejudice is a response to threat that individuals perceive toward their in-group vis-à-vis another group. This way the issue of large proportions of immigrants in an individual's area may not translate to prejudicial attitudes as long as conditions are stable, because there is not a perceived threat of a shift in inter-group power dynamics. However, once the issue is made salient by changes over time, feelings of threat as described in this interpretation of the theory manifest and result in a change in attitudes toward outgroups. This approach has received limited, but encouraging support in empirical tests across a variety of European countries (Meuleman et al., 2009; Lancee and Pardos-Prado, 2013; Czymara, 2020), the United States (Hopkins, 2010) and in different age groups (Coenders and Scheepers, 2008; Mitchell, 2019).

Still, the changing contexts described here have all been material, referring to changes in either demographic or economic conditions. Applying this idea to changes in social trust has not yet been empirically tested, however similar theoretical arguments can be made in favor of this approach. For example, changes in other non-material or cultural contexts such as media environments have been linked to changes in attitudes (Klingeren et al., 2015; Czymara and Dochow, 2018). While it is true that social trust is relatively stable over time, it is possible that changes in social trust are linked to changes in attitudes about immigrants. When societal social trust begins to drop, the "state of affairs" becomes one where people are unable to predict that others will react in good faith, increasing the probability that the sphere of trust will be contracted to exclude immigrants and contribute to the fear that they harbor designs against the prerogatives of the dominant group. Taking the dynamic approach to group threat theory, and informed by the importance of non-material contexts, I hypothesis that changes in social trust will have an impact on in-group members attitudes toward immigrants:

Hypothesis 3: Over time reductions in trust within countries will result in higher anti-immigrant attitudes over time

DATA AND METHODS

Data for the dependent variable and main independent variable come from eight rounds of the European Social Survey (ESS) from 2002 to 2016. The ESS is a cross-national survey with representative samples of 34 countries, all of them are included in this study. While only 15 countries are included in each of the

8 waves, 34 of them are included in at least two of the waves, resulting in 198 country-years with 268,995 respondents[1]. To analyze the attitudes of the in-groups the sample was restricted to respondents that were born in the response country.

Dependent Variable

Three items were included in each of the eight waves of the ESS to measure attitudes about immigrants[2]. While the ESS includes periodic modules with more detailed questions about attitudes toward immigrants in 2002 and 2016, a key part of this study is the incorporation of how changes in contexts influence changes in attitudes toward immigrants, so the incorporation of the most waves possible offers the best possibility to gain insight about those changes. Questions about how respondents feel about immigrants that are in their country are measured on a 0–10 point scale where low values represent negative responses and high values represent positive responses. The questions are:

- "Would you say it is generally bad or good for [country]'s economy that people come to live here from other countries?" (0= "Bad for the economy," 10 = "Good for the economy").
- "Would you say that [country]'s cultural life is generally undermined or enriched by people coming to live here from other countries?" (0 = "Cultural life undermined," 10= "Cultural life enriched"). And
- "Is [country] made a worse or a better place to live by people coming to live here from other countries?," (0= "Worse place to live," 10 = "Better place to live").

An index was created by averaging responses to each of the three questions. This index concerning attitudes about immigrants has a high inter-item average correlation (0.65) and inter-item reliability (Chronbach's alpha = 0.85). Country level averages of the index are depicted in **Figure 1**. Descriptive statistics for average attitudes about immigrants with their standard deviations in countries across survey years are in available in the **Appendix**.

Independent Individual and Contextual Variables

The main independent variable measures generalized trust. At the individual level, trust is measured through the question, "generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?" On a 10 point scale (0= "You cant be too careful," 10= "most people can be trusted"). To isolate individuals' trust levels in a way that is relative to the respondents' country, responses were centered against the average level of generalized trust in that country at that time. This means that, the variable included in the analysis is the level of difference people say that they can trust others, compared to others in their country during the survey wave.

[1]Albania and Kosovo are excluded for participating in only one wave.

[2]The ESS has a separate battery of questions about attitudes about immigration, gathering information about whether respondents favor immigration from different areas. While these questions are related, the focus of this article is about anti-immigrant sentiment. Still, models testing an immigration index as a dependent variable yielded similar results.

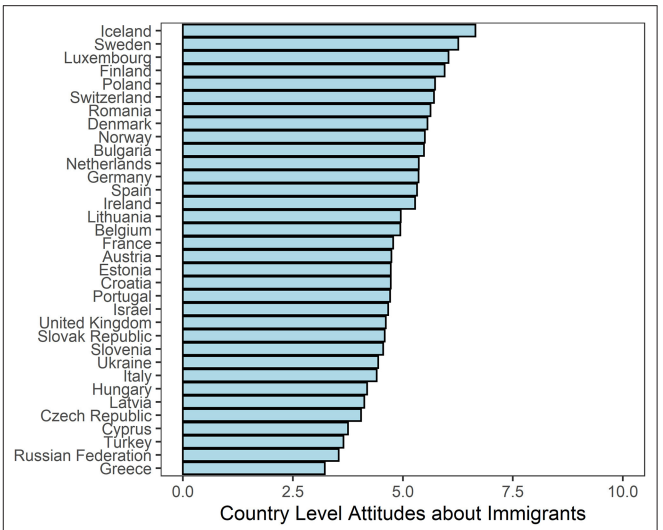

FIGURE 1 | Attitudes about immigrants, averaged across all waves.

To create a country level contextual trust variable, this study employed a series of aggregation and centering methods to parse out the effects of the differences in trust between countries, vs. the changes in levels of trust within countries (Fairbrother, 2014). First, to establish a time invariant country level trust measure to assess the differences between countries, responses were aggregated by country and averaged across all response waves. Next, to assess the differences within countries over time, the average value of trust in each country-year was subtracted from the time-invariant level of trust in that country. This way, the within-country trust measurement is the degree to which that wave deviates from the time invariant, between-country average. Country averages are also included in **Appendix**, and **Figure 2** shows the within-country measurements of social trust for each wave of the ESS.

While using the 10 point ESS scale is advantageous for this study since it is included in all eight rounds, there is some evidence that using this scale biases responders to report higher levels of trust than using other scales (Bekkers and Sandberg, 2019). While within country changes in social trust should not be influenced by this bias since the ESS uses the same scale in each wave, it is possible that the between country analysis is influenced. To address this issue, and to incorporate a historical trust perspective, two additional datasets were brought in for supplemental analyses. A binary trust indicator from the European Values Survey in 1999 was aggregated at the country level to represent a proportion of respondents that respond "most people can be trusted." This country level trust variable was merged with the 2016 ESS wave to test the relationship between historic levels of trust and attitudes about immigrants. To test if this relationship is Europe specific, additional analysis of the World Values Survey with the same binary variable for trust for the 1995–96, and the 2010–12 wave variable measuring respondent's willingness to live next to immigrants were used.

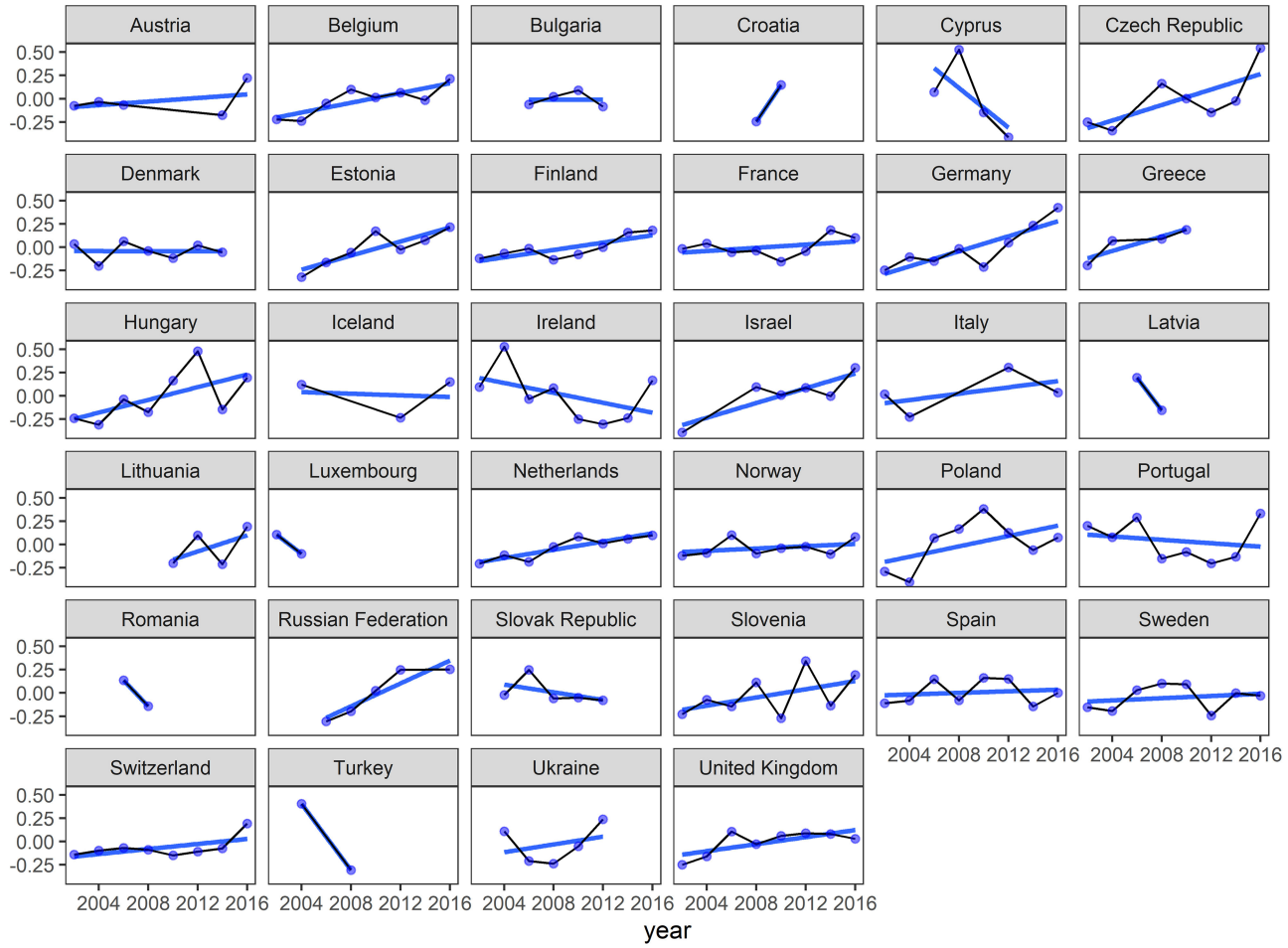

FIGURE 2 | Within-country social trust over time.

To further test the for the importance of non-material contexts, and to control for a possible confounder of political environments that might influence both societal trust and attitudes about immigrants, country-level data from the Manifesto Project (Volkens et al., 2020) is included in the analysis. The MP data is a quantitative content analysis of a corpus of party manifestos. Following Bohman (2011), the analysis incorporates a national way of life (NWOL, *per601*) indicator, which is a measurement of how often political parties make positive appeals to patriotism and nationalism, support for established national ideas, and protection of the state from subversion. Each country-year observation is the average value of NWOL articulations, standardized for the number of parties and their representation in parliament in the nearest election before the ESS round.

To test the classical approach of threat to proprietary claims of group threat theory, metrics for proportions of foreign born people and gross domestic product (GDP) were taken from the World Development Indicators database compiled by the World Bank. While data for GDP was available for all years, proportions of foreign born people were only available every 5 years (2000, 2005, 2010, and 2015). Linear interpolation imputed values between the provided years in the WDI data for proportion foreign born and was merged into the ESS along with the logGDP for each wave. To assess how the differences in levels of political contexts measured with the NWOL indicator, GDP, and foreign born populations between countries, vs. the changes that are occurring within them the same within-between centering process that was constructed with the social trust context variable was used.

In addition to the individual level social trust variable a series of other individual level variables were included in the analysis. Age was coded as a categorical variable labeled "young" (25 and younger), "old"(65 and older), and 26–64 (ref.). Controlling for individual level socio-economic differences comparable across countries a variable for education separating people with university education (1) an without (0) is included, as well as gender (male ref.) and a self reported house hold income metric about whether people feel like they are living comfortably on their present income. On a 4 point scale, 1= "living comfortably on

present income," 4= "very difficult on present income." Personal political orientation in the form of a left (0)-right (10) scale is also included.

Analytic Methods

Due to the structure of the data, a multi-level modeling approach that nests respondents inside of country-years and counties was employed for this study. This allows for both the estimation of the relationship between contextual variables of interest and anti-immigrant attitudes both cross-sectionally and longitudinally. Since the responses to the surveys are in part dependent on the groups that the respondents belong, models that accommodate for this country and country-year grouping are better suited for this analysis than models with no grouping structure (Fairbrother, 2014). In the statistical model, for each of the contextual level variables I add the de-meaned value and its mean. The advantage of including the time-varying de-meaned value (within-effects WE), rather than the raw value, is that it controls for time invariant differences between countries (such as welfare state regime type, and immigration policies) by basing the estimates on the variance occurring only within nations over time. The meaned, between country values (between-effects BE) are then included to estimate the time invariant differences between countries (Bell et al., 2019).

The analysis follows a model building approach where Model 1 is an "empty" models for the dependent variable and its nesting structure in the three level model. Model 2 tests the relationship between the individual level independent variables and the dependent variable measuring respondents' attitudes about immigrants. Model 3 adds the country level independent variables, including country level social trust. In the first three models random intercepts are used in estimation, and Model 4 adds random slopes to the estimates in the three- level models[3].

In the robustness check, models 5–7 are linear models regressing country level attitudes on historic levels of social trust. Each uses different combinations of data sources from the ESS, EVS and WVS for the independent and dependent variables. These models include the interaction effects of historical trust with changes in proportion of foreign born people. While the sample sizes of the country level analyses are small, if historically trusting countries have more friendly attitudes toward immigrants, then high trusting countries should retain better attitudes toward immigrants even after a period of increasing immigration.

RESULTS

A visual representation of the relationship between county level attitudes about immigrants and country level social trust is shown in **Figure 3**. In it, each solid line represents a different country and each dot a country-year. In nearly all the countries there is a positive relationship between levels of social trust and attitudes about immigrants. The dotted line is the correlation over all, showing that this positive relationship is true for the country-year sample as a whole.

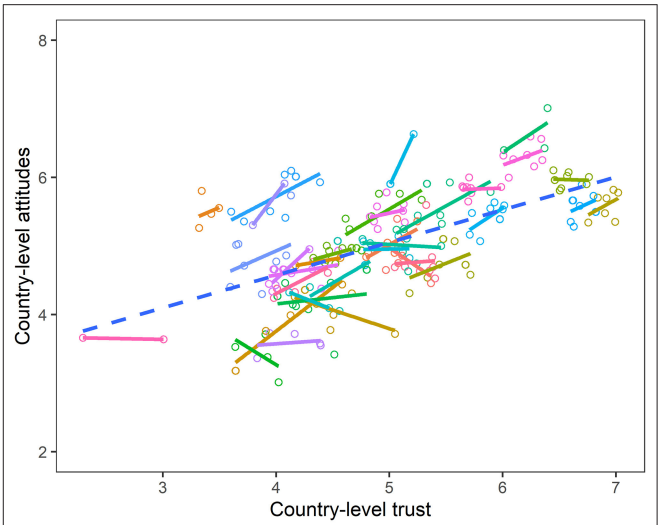

FIGURE 3 | Scatterplot of country-year attitudes about immigrants and social trust.

Estimates and standard errors from the multi-level models are presented in **Table 1**. For attitudes about immigrants the estimate for the intercept is 4.93. Model 2 shows that individual level trust is related to more positive attitudes about immigrants (0.20). This is a confirmation of hypothesis one, which is to say that people who are more trusting than their peers in their country, during the time of survey report less prejudicial attitudes toward immigrants. There is also a relationship between age groups of respondents and their attitudes, with people under 25 having more friendly (0.16) attitudes and people older than 65 having less friendly (−0.29) attitudes toward immigrants than the reference category of people between 25 and 65 years of age. Respondents with a university degree have substantially more positive attitudes about immigrants than those without (0.73), similarly those that report lower household income harbor less friendly attitudes that those that report higher (−0.27). Also, people that identify further "right" on the political spectrum have less friendly attitudes toward immigrants (−0.80). In addition to confirming hypothesis 1, the findings from individual level variables support many of the claims found in previous scholarship, for example that individuals that are less vulnerable to threat feelings because of their educational attainment or higher household income harbor less prejudices. Still, controlling for these other individual level factors typically associated with prejudice in the group threat framework, social trust still has a positive relationship with attitudes toward immigrants.

Turning to the contextual level variables, Model 3 confirms both hypotheses 2 and 3. Average levels of social trust, that is to say the time invariant differences in social trust between countries, is significantly and substantially related to attitudes about immigrants (0.44). Countries with higher levels of social trust, on average translate to more positive attitudes

[3]Many different model specifications were tested including the addition of the ESS design weights and attitudes about immigration instead of immigrants as the dependent variable. Each yielded similar results.

TABLE 1 | Multi-level regression models.

	Model 1	Model 2	Model 3	Model 4
Predictors	*Estimates*	*Estimates*	*Estimates*	*Estimates*
	std. error	*std. error*	*std. error*	*std. error*
Intercept	4.93***	5.90***	11.57**	12.27***
	−0.14	−0.12	−4.35	−3.67
Indiv. Trust		0.20***	0.20***	0.20***
		0	0	0
25 and under		0.16***	0.16***	0.16***
		−0.01	−0.01	−0.01
65 and older		−0.29***	−0.29***	−0.29***
		−0.01	−0.01	−0.01
University		0.73***	0.73***	0.73***
		−0.01	−0.01	−0.01
Female		−0.03***	−0.03***	−0.03***
		−0.01	−0.01	−0.01
Income		−0.27***	−0.27***	−0.27***
		0	0	0
Left		−0.80***	−0.80***	−0.80***
		−0.02	−0.02	−0.02
WE Trust			0.59***	0.60***
			−0.12	−0.14
BE Trust			0.44**	0.43***
			−0.14	−0.12
WE NWOL			−0.01	−0.02
			−0.01	−0.01
BE NWOL			−0.10**	−0.11***
			−0.04	−0.03
WE logGDP			0.09	−0.02
			−0.36	−0.35
BE logGDP			−0.71	−0.76*
			−0.45	−0.38
WE %Foreign Born			0.02	0.03
			−0.02	−0.02
BE %Foreign Born			0.02	0.01
			−0.02	−0.02
ESS Round			−0.03	−0.03
			−0.02	−0.02
Random effects				
σ^2	4.04	3.45	3.45	3.45
τ_{00}	0.08 $_{cntryyr}$	0.08 $_{cntryyr}$	0.07 $_{cntryyr}$	0.06 $_{cntryyr}$
	0.62 $_{cntry}$	0.48 $_{cntry}$	0.30 $_{cntry}$	0.30 $_{cntry}$
τ_{11}				0.21 $_{cntry.countrytrust}$
ρ_{01}				0.86 $_{cntry}$
Countries	34 $_{cntry}$	34 $_{cntry}$	34 $_{cntry}$	34 $_{cntry}$
Country/Year	200 $_{cntryyr}$	198 $_{cntryyr}$	198 $_{cntryyr}$	198 $_{cntryyr}$
Observations	314934	268995	268995	268995
AIC/BIC		1097466/1097582	1097437/ 1097647	1097429/ 1097660

*$p < 0.05$ **$p < 0.01$ ***$p < 0.001$.
Dependent variable attitudes about immigrants.

toward immigrants. Similarly, changes in social trust within countries are significantly related to attitudes toward immigrants (0.59). While changes in aggregate social trust are relatively small, they translate to comparably large changes in attitudes about immigrants.

The results also support previous findings about the importance of political contexts in relation to attitudes about immigrants (Bohman, 2011) though only between countries, not within them over time. Countries where NWOL articulations are on average high are less friendly toward immigrants, but over time changes in the salience level of the NWOL indicators is unclear. This might be due to the complicated (and perhaps reciprocal) relationship between parties and their constituents common in the supply and/or demand literature in political science.

In contrast, the contextual level material indicators that have frequently been used in previous research show a complicated relationship with attitudes about immigrants, with estimates are sensitive to model specification and the exclusion of specific countries[4] (reported in the **Appendix**). In the full sample reported here, only the between effects of GDP (−0.78) have a substantial relationship to attitudes about immigrants with a large confidence interval (**Figure 4**), while changes in GDP, as well as the within or between effects of proportions of foreign born people have no relationship with anti-immigrant attitudes. These results lend support to the idea that non-material indicators, like social trust, have a more substantial link than do material indicators both comparatively and over time. It also shows that changes in non-material conditions, as predicted in the dynamic interpretation of group threat theory are important for attitudes about immigrants. Model 4 incorporates random slopes at the country level, but this does not substantially change the results from Model 3. The dot and whisker plot (**Figure 4**), shows the effect size and standard errors of each of the independent variables centered around the intercept with confidence intervals. Of the contextual variables, both within and between country trust and time invariant levels of GDP do not overlap with zero.

In addition to the evidence provided in Models 1–4, at the country-level, historical trust should be related to levels of prejudice in the future. To check for this, linear regression models at the country-level analyzed the relationship between historical social trust and contemporaneous levels of prejudice controlling for GDP and changes in immigration over the gap in observation times. These analyses used three different combinations of dependent variables and independent variables from three different datasets, the European Values Survey (EVS), European Social Survey (ESS), and the World Values Survey (WVS). Regression tables of these analyses are available in the **Appendix**, however, results show that countries with historically high social trust are still related to more positive attitudes

[4]The models reported in the **Appendix** exclude the Russian Federation and the Slovak Republic. In this model, both the WE and BE effects of %FB appear to be related to attitudes about immigrants, but the effect of GDP disappears. In both model specifications the effects of social trust and the NWOL measurements are stable.

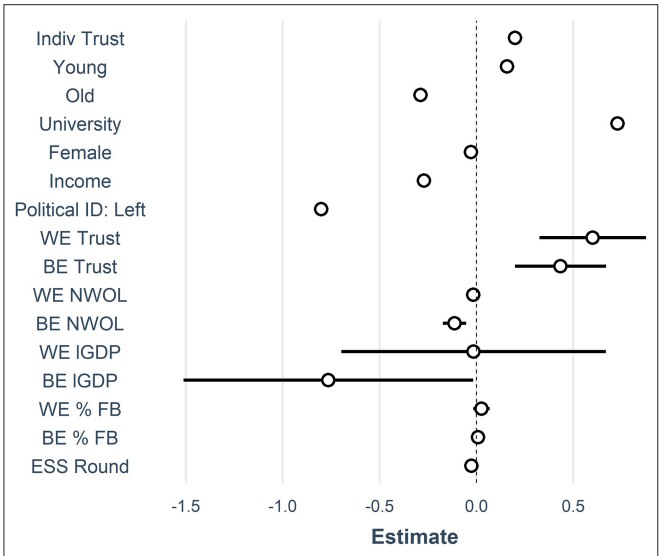

FIGURE 4 | Dot and whisker plot of effect sizes on anti-immigrant attitudes.

about immigrants in the future even in small sample sizes. Historical trust from the first wave of the European Social Survey Cumulative File, ESS 1-9 (2020), and from the 1999 wave of the EVS, resulted in statistically significant relationships with future prejudice (European Social Survey Cumulative File, ESS 1-9, 2020). To ensure this relationship is not Europe specific, the same analysis was conducted using WVS trust measurements from 1995 to 96 and attitudes about immigrants in 2010–2012 yielding similar results. Many of the countries included in the three additional analyses experienced notable demographic changes in terms of the number of immigrants, if societal levels of social trust are able to insulate societies from prejudice even in times of demographic change, then high trusting societies that received many immigrants should at least not report *less* positive attitudes toward immigrants. However, as the interaction effects in Figures 5A–C of the **Appendix** between historic levels of trust and changes in proportions of foreign born show, high trusting countries that saw relatively big demographic changes (1 standard deviation from the average), appear to have *more* positive attitudes than those high trusting countries that did not see such a change. While the sample size of countries is small (18 using ESS and EVS, and 30 using WVS), the findings are significant at the $p < 0.5$ level. Adding confidence to this, the relationship points in the same direction regardless of the data and country samples that were used, suggesting that it is likely that trusting countries are not only better insulated from prejudice than low trusting countries, but perhaps that they are able to become even more friendly in the presence of high immigration through the facilitation of bridging capital (Putnam, 2000).

CONCLUSIONS

The literature examining the effect of country level contexts has been dominated by what has become known as group threat theory, often looking for a link between attitudes and demographic conditions with mixed results. There is a growing body of research that is beginning to look at how non-material contextual conditions might influence these attitudes, yet few studies have examined how social trust might influence attitudes about immigrants in different societies. While a more direct reading of the theory may point to these material contextual indicators, the absence of robust empirical findings over the last 30 years suggest a revisiting of Blumer's original text for a re-reading, and for further guidance. This article proposes a return to theory and an emphasis on Blumer's assertion that group dynamics engender fear, and influence prejudicial attitudes.

The findings here show that generalized trust is linked to lower levels of prejudice toward immigrants both at the individual and country level. At the individual level, this could mean that individuals are extending their circle of trust to include people that are not a part of their in-group, as defined by their membership to a nation-state. This would be consistent with the findings of previous literature. At the country level, group threat theory would argue that environments of trust insulate societies from prejudicial attitudes because the general "state of affairs" where the group dynamics are taking place are ones of reduced fear that out groups, or any group, is harboring prerogatives against the in-group. Furthermore, while country level trust is relatively stable over time, even small changes in social trust correspond to relatively large changes in attitudes about immigrants. This finding is in line with the dynamic approach to group threat theory. It would also appear that countries with historically high levels of trust are able to incorporate comparatively large changes is immigrants and report more positive attitudes toward them. Ensuring that these findings are not an artifact of the data and as a robustness check, historical social trust metrics from different data sources were incorporated in country comparative analyses. Historically trusting countries are on average less prejudicial, even in times of high immigration. This finding is true even outside the European context.

It is possible that the findings here are confounded somewhat by other factors that influence both social trust and prejudice in societies. What comes to mind are social institutions such as robust welfare states that both generate trust and reduce perceptions of threat that might induce prejudice. To further analyze the potential direct and indirect effects social trust environments have on anti-immigrant attitudes, and prejudicial attitudes generally speaking is an avenue for future research. While recognizing this possibility, the relationship shown in this study is still important to note, since finding ways to generate higher levels of social cohesion will have spill-over effects in societies such as the reduced levels of prejudice shown here.

As researchers continue to examine the relationships between contextual influences and anti-immigrant attitudes, the incorporation of social indicators beyond demographic and economic factors that might influence prejudice should receive more consideration. Understanding that these indicators are subject to changes over time must also be kept in mind to account for shifts in attitudes within societies. Fortunately, the recent expansion of datasets that cover more topics over a longer

periods of time allow for this type of social inquiry both across societies and within them longitudinally.

DATA AVAILABILITY STATEMENT

Publicly available datasets were analyzed in this study. This data can be found at: http://www.europeansocialsurvey.org/downloadwizard/. Replication files for data cleaning and analysis can be found here: https://osf.io/7zmhu/.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fsoc.2021.604884/full#supplementary-material

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Analyzing Migration Restriction Regimes

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This paper develops a framework for analyzing migration restriction regimes, and illustrates it with the case of U.S. immigration law and policy. Nation-states regulate the entry of foreign-born persons, and this regulation comprises three elements: the type of restriction, the apparatus of restriction, and the consequences of restriction. Restriction may be based on personal characteristics, numerical ceilings, or both. Personal restriction notices the characteristics of persons, using them as criteria for granting or denying admission. Numerical restriction places numerical ceilings on admissions. The apparatus of restriction may stipulate specific ceilings, whether some groups are exempt from the ceiling and, if so, by what criteria, and whether admission under the ceiling is first-come/first-served or by lottery or instead preferential and, if so, by what criteria. Two unintended consequences follow immediately: unauthorized migration (under both personal and numerical restriction); and visa-number backlogs (under numerical restriction). These in turn generate a range of policy devices: border enforcement, procedures for legalization and deportation, and procedures for clearing backlogs. Indeed, the history of a country's immigration law may be understood as a sequence of measures for first setting up the apparatus of restriction and then altering it in order not only to re-examine provisions of the initial setup but also to address unauthorized migration and visa-number backlogs. Viewing migration through this lens enables assessment of particular legislation and, more broadly, dynamics of a migration restriction regime, subject to world circumstances, including its possible inherent instability. The migration restriction lens also generates new metrics for a country's attractiveness and its innovativeness and creativity. To illustrate, the paper examines the migration restriction regime in the United States since the country's founding. Finally, the paper provides a checklist for a migration restriction setup that doubles as the basis for table shells for summarizing a country's migration restriction regime and its history.

Keywords: international migration, U.S. immigration law, personal restriction, numerical restriction, consequences of migration restriction, visa backlogs and unauthorized migration, periodization of U.S. immigration history, creative immigration policy devices

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INTRODUCTION

Restriction is central to the history of international migration. Indeed, restriction is central to the human experience, playing out in a variety of social domains: whom to admit – to college, to particular employment, to an apartment building, to a neighborhood, to an honor society, to a club. Religions have rules of admission, elaborate rules for deciding, for example, who can become

a Catholic, a Jew, a Muslim, etc. For countries, the stakes are high. As the American legislator Representative Peter W. Rodino put it, "Immigration and refugee policies... both reveal and define what kind of a nation we are and what kind of a nation we will become" (U.S. Select Commission on Immigration Refugee Policy, 1980a, p. 3).

Migration restriction operates in a variety of contexts, both within and across countries (i.e., both in internal migration and in international migration) – whom to admit as tourists, whom to admit for temporary sojourns, whom to admit for permanent settlement, and (in the case of international migration) whom to admit to citizenship and nationality. The framework introduced in this paper covers all migration contexts (and indeed is generalizable beyond migration). However, for concreteness, description is in terms of permanent immigration from one country to another. The section on Migration Restriction Regimes provides a brief overview of the framework for studying migration restriction regimes, describing three main elements – types of restriction, apparatus of restriction, and consequences of restriction. The section on Migration Restriction Regimes in the Broader Social Science Context considers the broader social science context, discussing matters of measurement and theory. Next, the section on Migration Restriction Regimes in the United States illustrates with the case of U.S. immigration law and policy. The paper concludes with a brief Afterword on possible creative policy devices and one dimension of personal restriction in the United States.

MIGRATION RESTRICTION REGIMES

Two Types of Migration Restriction

There are two ways to restrict immigration – personal and numerical. A country may use personal criteria to screen prospective immigrants (for example, barring persons who are poor or illiterate) or numerical criteria (for example, setting an overall ceiling), leading to four possible restriction regimes. A priori, all four regimes are possible. One can envision a society with numerical restriction but no personal restriction (i.e., everyone is eligible but only a subset is admitted) or the opposite (i.e., only a subset is eligible and everyone in the subset is admitted). The two other regimes include the fully restricted regime with both personal and numerical restriction and the fully unrestricted regime. Thus, the two types of restriction lead naturally to four migration restriction regimes and thence, as will be seen below, to a periodization of the history of a country's immigration law.

The Apparatus of Migration Restriction

Restriction is not easy. Restriction requires fitting together a set of moving parts. Consider the main parts of the apparatus, separately for personal and numerical restriction.

Elements of Personal Restriction

The main challenge is to define the set of personal characteristics that will be used to render prospective immigrants eligible or ineligible for legal permanent residence. If the characteristic is qualitative, like gender, eye color, nativity, religion, or native language, the decision must be made about which category or categories to favor or to bar. Should the destination country prohibit the immigration of blue-eyed persons? Or persons with certain illnesses? Or persons born in certain countries? Conversely, should the country accept only brown-eyed persons? Or persons with specified health characteristics? Or persons born in certain countries? Moreover, if origin country is to play a part, how should it be defined? As country of birth, or country of current or last residence, or country of citizenship? If the characteristic is quantitative, like wealth or age, the decision must be made which end of the continuum to bar and where to draw the line. Should the country prohibit the immigration of rich people, and where should it draw the line between rich and poor? Should the country prohibit the immigration of older persons, and where should it draw the line between young and old?

None of these questions is easy. And one can imagine that legislative bodies, as well as the citizenry, will have a diversity of views and spirited discussions. The documents of every policymaking body that has considered these questions display the great difficulties.

Elements of Numerical Restriction

Numerical restriction requires several difficult interrelated decisions. The first decision pertains to the number at which to set the ceiling. The second decision is whether to place a ceiling on all immigration or instead to have two immigration streams, one numerically limited, the other numerically unlimited. If the second decision is to have two streams, then the third decision pertains to the characteristics to be used for exempting one stream from the ceiling. The fourth decision, applying to all numerically limited immigrants, is how to choose from among a pool of applicants, for example, by a first-come/first-served rule or by lottery or by granting preferences or points. If the outcome of the fourth decision is to grant preferences or points, then the fifth decision pertains to the criteria to be used. A sixth decision is whether to add unused visas to the next year's supply of visas.

These are complicated matters, and it bears emphasizing that they engender much debate, as will be seen in the illustration in the section on Migration Restriction Regimes in the United States. The history of a country's immigration may be viewed as a history of asking and re-asking these questions, collected in **Table 1**.

Moreover, as already hinted, both personal restriction and numerical restriction can be elaborated, further complicating setup of a migration restriction regime.

Personal restriction can be elaborated by noticing whether the characteristics constituting the criteria for restriction are fixed or alterable, a dimension crosscutting their qualitative or quantitative character. In general, one cannot change physical attributes or the things of the past. This set includes parental characteristics (such as parental religion), childhood characteristics (such as first language), and previous behaviors (such as previous membership in a political organization), as well as race and ancestry. However, other personal characteristics can be changed – e.g., schooling, occupation, bank account, religious affiliation – and a new language can be learned (Jasso, 2009b, p. 29, 34–36).

TABLE 1 | Apparatus for migration restriction: initial setup.

A. Personal restriction
Personal restriction grants or denies legal permanent residence (LPR) to individuals based on their personal characteristics.
1. Which characteristics confer or deny eligibility for legal permanent residence?
2. For qualitative characteristics, which categories confer or deny eligibility for LPR?
3. If origin country is one of the qualitative characteristics, how is country defined?
4. For quantitative characteristics, where is the line drawn between eligibility and ineligibility?
B. Numerical restriction
Numerical restriction limits the number admitted to legal permanent residence in a fiscal year.
1. What is the numerical ceiling?
2. Is a subset of individuals exempt from the numerical ceiling?
3. If a subset of individuals is exempt from the numerical ceiling, which characteristics generate the exemption?
4. Within the numerical ceiling, how are visa numbers allocated? By order of application, at random, or by personal characteristics?
5. If numerically limited visas are allocated based on personal characteristics, which characteristics matter and how are they prioritized?
6. If numerical ceilings are not reached in a given year, are unused visas added to the next year's pool of visas?

Similarly, numerical restriction differs importantly according to (1) whether there is a single numerically limited stream or dual streams (one numerically limited, the other not) and (2) whether the type of selection is first-come/first-served or random selection or preferential selection. Random selection is a "pure" numerical restriction. Preferential selection incorporates forms of personal restriction and thus is not a pure numerical restriction. First-come/first-served embeds additional processes, possibly including personal characteristics (e.g., in the urgency to flee and the resources to flee quickly).

Thus, the setup of migration restriction may be even more difficult and contentious. Still, the basic skeleton in **Table 1** provides a foundation for analyzing migration restriction regimes.

The Consequences of Migration Restriction

When the country restricting immigration is attractive, the immediate consequences of restriction are unauthorized migration (for both personal and numerical restriction) and visa-number backlogs (for numerical restriction)[1].

As long as personal restrictions exist, ineligible people will enter the country in secret, or, if a temporary visit was permitted, remain, building a set of unauthorized residents.

Similarly, as long as numerical restrictions exist, eligible people will apply to immigrate, even when immigration is not possible for many years. And backlogs will accumulate. Moreover, some persons in the backlogs may enter/remain as unauthorized residents.

These immediate consequences spawn second-order consequences, in particular, policy devices to deal with them. The policy devices include enforcement measures as well as mechanisms for legalization and periodic clearing of backlogs[2].

As well, restriction yields two interesting new metrics. For one way to assess the attractiveness of a country that restricts immigration is by the magnitude of unauthorized migration and visa-number backlogs. And one way to gauge the innovativeness and creativity of a country's government is by the policies it formulates to deal with unauthorized migration and visa backlogs. These policies are also a gauge of the country's humaneness and deepest values, as noted by Bhagwati and Rivera-Batiz (2013).

Periodization by Migration Restriction Regime

Each of the four possible migration restriction regimes – fully unrestricted, personal restriction only, numerical restriction only, and fully restricted – has a distinctive apparatus and distinctive consequences, as discussed above. Accordingly, it may be useful to characterize the history of a country's immigration law by a periodization highlighting the four possible migration restriction regimes. For example, a country may or may not have a fully unrestricted migration regime in its history and/or it may or may not have an exclusively personal-restriction regime in its history, and so on. And the ordering of the regimes may be distinctive – and linked to the country's economic, social, and political features.

It may also happen that a country treats different parts of the world or different sets of countries differently, generating a somewhat more elaborate periodization. As will be seen in the section on Migration Restriction Regimes in the United States, the United States exemplifies this case, as for a period of over 40 years it had different rules for prospective immigrants from the Eastern Hemisphere and the Western Hemisphere.

MIGRATION RESTRICTION REGIMES IN THE BROADER SOCIAL SCIENCE CONTEXT

Before proceeding to take a close look at migration restriction in the United States, it is useful to consider two broader social science matters. The first pertains to measurement, the second

[1]These backlogs pertain to what are called "visa numbers" – visas for numerically limited permanent immigration. Of course, all applications are vulnerable to processing delays; the backlogs that arise from processing may be called visa-processing backlogs, as opposed to visa-number backlogs. The focal backlogs in this paper are visa-number backlogs.

[2]That restriction leads to unauthorized migration and visa-number backlogs and these in turn to new policy devices to address them has long been recognized and discussed, especially in historical accounts of migration restriction regimes, as will be seen in the section on The Consequences of Migration Restriction in the United States (e.g., Vialet, 1979; Masanz, 1980; U.S. Immigration and Naturalization Service, 1991; Bruno, 2001; Wasem, 2010). Social science discussions of these phenomena include Czaika and Hobolth (2016), Brekke et al. (2017), and Poston (2019).

to substance, specifically the link between migration restriction and attitudes to immigration. Both embed a concern for fuller understanding of the determinants of migration restriction and the larger consequences beyond unauthorized migration and visa-number backlogs.

Measurement of Migration Restriction Regimes

Across the social sciences, as appreciation has grown of the importance for human behavior of the social/economic/political environment, so, too, have efforts to measure relevant features of the environment and as well to understand their origins (see, inter alia, Weber's, 1892 pioneering examination of Polish workers in Germany; Thomas and Znaniecki's, 1927 pathbreaking work, The Polish Peasant in Europe and America; and Elder's foundational work on life course analysis, summarized in Elder et al., 2003). Some of these features are simple and straightforward to measure (e.g., length of the school year or length of the school day), others less simple but with a rich scholarly tradition (e.g., Gross Domestic Product), and still others quite challenging (e.g., migration policy regimes). Research organizations, policy institutes, and government offices have contributed data and insights, sometimes jointly, to advance measures of these important macro features.

Valuable exemplars include the Human Development Index (United Nations Development Programme, 2020), the Gender Gap Index (World Economic Forum, 2019), and the Human Capital Index (World Bank, 2019, 2020)[3].

The field of migration has seen a major creative surge of efforts to conceptualize and measure migration policies (Bjerre et al., 2015; Filindra and Goodman, 2019), culminating in several large-scale projects: the Immigration Policies in Comparison (IMPIC) project covering 33 OECD countries in 1980-2020 (Helbling et al., 2017); the Determinants of International Migration Policy (DEMIG) project covering 45 countries in 1945-2014 (de Haas et al., 2015); the International Migration Policy and Law Analysis (IMPALA) project covering 9 countries in 1999-2008 (Beine et al., 2016); and the Migrant Integration Policy Index (MIPEX) project covering 52 countries in 5 continents, including all the EU member states and all the OECD countries, in 2007-2019 (Solano and Huddleston, 2020).

These projects have produced a rich literature that promises to substantially advance knowledge about international migration (Filindra and Goodman, 2019). By comparison, the framework introduced in this paper is modest. It has no intent to create an index or measure degree of restrictiveness. Moreover, its focus is largely on the internal structure of migration restriction regimes – their moving parts, conceptualized as two main types of restriction, personal restriction and numerical restriction – and while these moving parts affect the lives of migrants and all who enter migration systems (such as citizens sponsoring relatives and workers for immigration), it is also understood that the precise consequences depend not only on the migration restriction regime but also on the context. For example, the same policy may be thought exceedingly restrictive in a context of high demand and wonderfully generous in a context of low demand.

Yet both this framework for analyzing migration restriction regimes and the large migration policy projects arise from the same spirit, and both their points of convergence and their differences could yield useful synergies. To illustrate, both this framework and the larger policy projects encompass legal categories (such as legal permanent resident or citizen) and personal characteristics (such as language or religion); both cover long time spans; both implicitly or explicitly seek to understand both determinants and consequences of particular policies (considerations noted by Filindra and Goodman, 2019). Both are tools for understanding a wide range of domains – e.g., rights and responsibilities of non-citizens across the great diversity of legal categories. Indeed, description of a country's migration policy at a given point in time could benefit from both the policy indexes and the migration restriction framework, the latter classifying the regime as fully unrestricted, with personal restriction only, with numerical restriction only, or fully restricted. Additionally, it may be useful to go more deeply and distinguish within types of personal restriction and numerical restriction, as suggested in the section on The Apparatus of Migration Restriction above (e.g., distinguishing between fixed and alterable personal characteristics).

Finally, note a further immediately useful feature of the migration restriction framework proposed in this paper. Look again at **Table 1**. Each of the questions that the policymaker must address when setting up or revising a migration restriction regime is also an important feature of that regime. Examples include the presence or absence of personal restriction, of numerical ceilings, of dual numerically limited and numerically unlimited streams, and of the criteria embedded in them. Accordingly, any summary of a country's migration restriction regime would benefit from including the questions in **Table 1**.

Indeed, **Table 1** leads immediately to the design of table shells for annual reports on migration systems, including both an overview table for all countries, in which the major features appear on rows and the countries in columns. One could then see at a glance, for a given year, whether each country's immigration law includes personal restriction or not and numerical restriction or not. Additional rows for each major feature could provide further information such as the numerical ceiling, if any, and the major personal characteristics used for personal restriction, if any. As well, this table could have a second panel, in which the rows represent persons of possible migration-relevant characteristics – including spouses, minor children, and parents of citizens and permanent residents, other relatives, and persons with a job offer in the country, as well as independent migrants with no familial relationship or prospective employment. In such a table, the reader could see at a glance which countries provide visas for specific kinds of individuals, for example, parents or siblings or independent migrants.

A second kind of table shell follows from the first. This would be a historical table for each country separately. Such a table would inform about changes over time in each country's migration restriction regime, reporting the start and end of particular provisions. One can envision an annual report whose

[3]The Human Development Index dates to 1990 and the Gender Gap Index to 2006, while the Human Capital Index was introduced in 2019.

first table is the worldwide table and this is followed by individual historical tables for each country.

A more detailed annual worldwide table could also display the number of persons admitted to permanent residence, separately by the number who are new arrivals and the number who are already in the country and adjusting their immigration status to permanent resident. Of course, the table could also display some of the consequences, such as the number in the visa-number backlogs for numerically limited visas and the estimate of unauthorized residents. The foregoing could also be incorporated into the historical country-specific tables.

Migration Restriction Regimes and Attitudes Toward Immigration

Where do migration restriction regimes come from? Not from thin air. Migration restriction regimes reflect the attitudes and thinking of people and their countries. Even the briefest review of the literature on attitudes toward immigration suggests non-trivial variation across individuals, across countries, and over time (e.g., see for Europe, Heath et al., 2020; and for the United States, Smith and Edmonston, 1997, p. 389–393 and Waters and Pineau, 2015, p. 47–50, 147–148). As Heath et al. (2020, p. 475) observe, "Understanding what drives these... variations in public support for or opposition to immigration is therefore an issue of central importance for academics and policymakers alike."

In general, the ensuing basic questions include, in classical terms, those emanating from the "functional prerequisites of a society" (Aberle et al., 1950), summarized in Jasso (1988b, p. 920): "How do societies recruit their members? How do groups decide membership criteria? What traits are deemed desirable in prospective members and what traits are not?"[4] Other basic questions include philosophical questions about basic human rights and about how to allocate scarce benefits, as well as empirical questions about whether immigration policies awaken the sense of justice.

A subset of ethical questions may pertain to countries with particular historical origins. For example, discussing attitudes toward immigration in the United States, Weissbrodt et al. (2017, p. 52–53) observe, "Given the U.S. tradition as a country of immigrants, it is difficult to comprehend how current citizens – almost all of whom have benefited from immigration – can claim any right to exclude future immigrants."

With respect to whether migration restriction awakens the sense of justice, justice theory offers three ways to think about this question. First, there is little doubt that migration restriction awakens the sense of justice, at least in people who experience the sense of justice, that is, all but the justice-oblivious who are thought to be a small set (Jasso, 2017, p. 612–613)[5]. Second, however, given the inherent subjectivity of the sense of justice – enshrined in the Hatfield-Friedman Principle, "Justice is in the eye of the beholder" (Walster et al., 1973, p. 152, 1976, p. 4; Friedman, 1977) – there is no a priori conclusion that any element of migration policy is just or unjust or that one policy might be more, or less, unjust than another. Third, justice theory yields a range of testable implications deduced from the basic postulates in the theory. The implications cover the behavior of migrants as well as people and policymakers in both origin and destination countries (Jasso, 1986, 1988a, 1996). Like all the implications of justice theory they are ceteris paribus implications, because justice is thought to be only one of the basic forces governing behavior (Jasso, 2008). Here is a sampling[6]:

1. Societies in which immigration and population growth are welcomed must be societies in which people value at least one cardinal good, such as wealth.
2. If the origin and destination countries have the same average wealth, they cannot both favor or both oppose the migration; they can only both be indifferent to it.
3. A necessary condition for the origin and destination countries to both want the migration is that they be unequal in average wealth.
4. Two conditions jointly necessary and sufficient for the origin and destination countries to both want the migration are that migration be from a poor country to a rich country and that the migrant lie above the mean of the origin country and below the mean of the destination country.
5. Two conditions jointly necessary and sufficient for the origin and destination countries to both oppose the migration are that migration be from a rich country to a poor country and that the migrant lie below the mean of the origin country and above the mean of the destination country.

There is ample evidence that people often have diametrically opposed ideas about what is just in the world of migration policy. These ideas come to be formalized in political party platforms and non-governmental advocacy groups[7]. Notwithstanding the

[4] Aberle et al. (1950, p. 101) define a society as "a group of human beings sharing a self-sufficient system of action which is capable of existing longer than the life-span of an individual, the group being recruited at least in part by the sexual reproduction of its members." Thus, a tribe and a nation are societies, but a monastery is not. The elements of a self-sufficient system of action include a shared form of communication (i.e., language), shared cognitive orientations, and a shared articulated set of goals. The recruitment mechanism must yield a supply of "effectively socialized individuals from the maturing generation," possibly supplemented by recruits acquired through "immigration and conquest," (Aberle et al., 1950, p. 101), the latter also effectively socialized (Aberle et al., 1950, p. 109). Thus, the non-sexual recruitment practices of nation-states and the development of screening and socialization systems – as well as associated policymaking processes – constitute an important topic of study. Note that, in classic Aberle et al. (1950) terms, personal characteristics are good indicators of the probability of effective socialization into the country-specific system of action. But note also that individuals may disagree on the characteristics that render desirable a prospective immigrant, as will be illustrated below.

[5] For example, the Mission Statement for the U.S. Citizenship and Immigration Services (USCIS), an agency of the Department of Homeland Security, states: "USCIS administers the nation's lawful immigration system, safeguarding its integrity and promise by efficiently and *fairly* [italics added] adjudicating requests for immigration benefits while protecting Americans, securing the homeland, and honoring our values" (USCIS Policy Manual, Vol 1, Part A, Ch 1).

[6] Predictions 2–5 are for the special case in which the valued good is cardinal, the migrant does not pay a tax or receive a bonus at either origin or destination, and there is no economic growth from pre- to post-migration in either the origin or destination country (Jasso, 1996, p. 30–42).

[7] For example, in the aftermath of the U.S. presidential election in November 2020, a Trump supporter was quoted in the New York Times as saying, "Everything I

subjectivity of ideas of justice, it is possible that a general justice principle could emerge via sustained theoretical analysis. For example, while one would think that, given the Hatfield-Friedman Principle, ideas of what constitutes "the just society" would differ among persons, deductive reasoning yields the surprising prediction that "The just society has a mixed government; distribution of benefits is by the many, and distribution of burdens is by the few"[8]. Thus, it remains possible that migration too would be surprised by a general justice principle. Such a general justice principle would transcend the competing ideas of what is just, calming what might appear to be an inherent instability of migration restriction regimes. Indeed, the multi-country empirical work reported and discussed in Heath et al. (2020) and the references cited therein, such as Davidov et al. (2020), together with single-country studies such as Jasso (1988b), Diehl and Steinmann (2012a,b), and Diehl et al. (2018), may yield the components for a new general principle of justice about migration.

As for migration and human rights, there is a curious asymmetry. Human rights documents, such as the Universal Declaration of Human Rights (UDHR) adopted by the United Nations General Assembly in Paris on 10 December 1948[9], protect the right to leave one's country but leave unaddressed the corresponding right to enter another country. The conversation between President Jimmy Carter of the United States and Deputy Premier Deng Xiaoping of China during Deputy Premier Deng's state visit to Washington in late January 1979, after the two countries had normalized relations on the 1st of January, is illuminating (Foster, 2015):

> [When the United States] established diplomatic relations in 1979, the United States considered whether the Jackson-Vanik Amendments to the Trade Act of 1974, which required the US to impose trade restrictions on any country that restricted emigration, applied to China as it did to the Soviet Union. However, during the historic 1979 visit of paramount leader Deng Xiaoping to the United States, when he was asked by then President Jimmy Carter about Chinese restrictions on outbound emigration, Deng Xiaoping's reported response was "How many millions do you want?" Thereafter, the United States showed little or no interest in Chinese emigration policy.

Yet symmetry is much on the mind of Pope Francis (2020) who proposes "safe corridors" for migrants to move from one country to another.

worked for, Biden wants to give to the immigrants to help them live, when they don't do nothing but sit on their butts" (Herndon, 2020).

[8]Derivation of the just society result relies on two earlier results. The first is a theorem that states, "If an observer regards a cardinal thing as a good, then that observer implicitly regards inequality in the distribution of that thing as a bad; and if an observer regards a cardinal thing as a bad, then that observer implicitly regards inequality in the distribution of that thing as a good" (Jasso, 2017). The second is a set of results showing that the larger the number of independent-minded decisionmakers distributing a thing, the smaller the inequality in the distribution (Jasso, 2009a, 2018).

[9]The Universal Declaration of Human Rights Drafting Committee, chaired by Eleanor Roosevelt, worked in 1947-1948 to prepare the UDHR.

MIGRATION RESTRICTION REGIMES IN THE UNITED STATES

To begin, consider restriction on admission to legal permanent residence (LPR), popularly known as getting a "green card" – considering the types of restriction, the apparatus for restriction, and the consequences of restriction. This leads naturally to a restriction-focused periodization of U.S. immigration history[10].

To set the stage, **Figure 1** depicts annual admissions to legal permanent residence in the United States since 1820. Annual totals are from **Table 1** of the 2019 Yearbook of Immigration Statistics, the most recent annual report of the U.S. Department of Homeland Security (DHS). The graph shows the spike in 1991 and surrounding years due to persons acquiring LPR via the legalization provisions of the Immigration Reform and Control Act of 1986 (IRCA). This graph is probably the best-known graph in the entire field of U.S. immigration, published widely in the annual reports of the U.S. Immigration and Naturalization Service and the Annual Flow Reports of the U.S. Department of Homeland Security[11].

Previewing fuller description below, restriction is of two kinds, personal (noticing characteristics of persons, inclusive of national origin) and numerical (placing a ceiling on all or a subset of immigrants). Both types of restriction require an apparatus (what characteristics to favor or bar, whether to exempt some visa applicants from a ceiling and by what criteria, what ceiling to place on numerically limited immigration, etc.). Both types of restriction engender unauthorized immigration; numerical restriction also engenders backlogs. The twin consequences of unauthorized and backlogs in turn lead to new policy devices, such as mechanisms for enforcement, legalization, and periodic clearing of backlogs.

The elements of personal and numerical restriction, as well as the policy devices to deal with consequences of restriction, are codified in U.S. law and policy. For example, the elements of personal restriction appear in laws that establish the grounds of inadmissibility, distinguishing between admissibility for temporary or permanent residence and providing exceptions as well as waivers. Important sources for studying U.S. migration restriction, besides original pieces of legislation, court cases, and

[10]The green card (technically, Form I-551, the Permanent Resident Card) is the paper evidence of legal permanent residence. The card is called green because it was green from 1946 to 1964; it became green again in 2010.

[11]The graph appears, for example, in U.S. Immigration and Naturalization Service (2001, p. 2) and Baugh (2020, p. 3). As for the underlying numbers (initially published in the annual reports – e.g., U.S. Commissioner General of Immigration, 1898-1932; U.S. Immigration and Naturalization Service, 1943-1978, 1979-2001; U.S. Department of Homeland Security, 2002-2019), DHS continually updates the data, as noted in U.S. Department of Homeland Security (2002-2019, p. 1), for example, revising the data for the years 1973-2004 to remove duplicates, as discussed in U.S. Department of Homeland Security (2002-2019, p. 1). Accordingly, the source data are from the most recent Statistical Yearbook, namely that for 2019; although the 2019 yearbook is not yet published, the tables are already available on the DHS website. **Figure 1** includes in the total for 1976 the number admitted during the Transition Quarter 1976, when the United States changed from a July-June fiscal year to an October-September fiscal year. Of course, not everyone admitted to legal permanent residence remains in the United States; estimates of the U.S. foreign-born population are prepared by DHS and by the U.S. Census Bureau (Jasso and Rosenzweig, 2020).

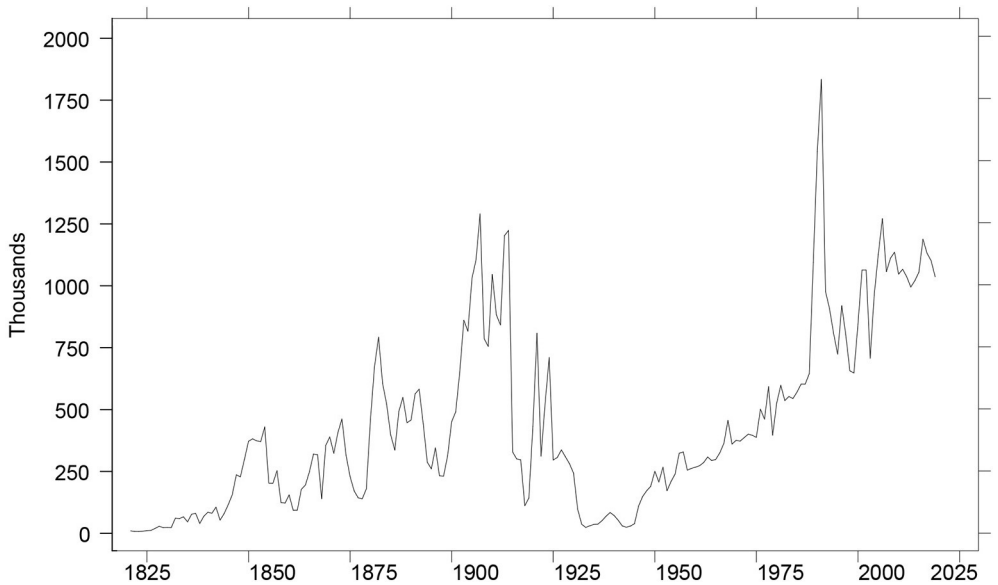

FIGURE 1 | Immigration to the United States: 1820-2019. Annual totals represent the number of persons admitted to legal permanent residence (U.S. Department of Homeland Security, 2019, Table 1).

executive actions, include the United States Code (USC), Title 8, which is a compilation of all legislation on immigration, and the Code of Federal Regulations (CFR), Title 8, which is a compilation of all immigration procedures. Both 8 USC and 8 CFR are titled "Aliens and Nationality." Also indispensable is the Policy Manual of the U.S. Citizenship and Immigration Services. The USCIS Policy Manual, still under construction, is the successor to the Adjudicator's Field Manual; these provide the basics of immigration law and policy as guidance to immigration officers. They also provide links to 8 USC and 8 CFR[12].

As well, the two types of restriction, combined with the geographic and historical distinction between the Eastern and Western Hemispheres, lead to a periodization of U.S. immigration history to date into Four Immigration Eras, beginning with an era of neither personal nor numerical restriction (to 1874), continuing to a Second Immigration Era, characterized by personal restriction only (to 1920), and a Third Immigration Era, with numerical restriction on the Eastern Hemisphere. Finally, the 1965 Immigration Act, by extending numerical restriction from the Eastern Hemisphere to the whole world, ushered in the Fourth Immigration Era.

This section ends with a close look at the 1965 Act, an assessment from the migration restriction perspective and a look ahead, asking whether there might be a Fifth Immigration Era and how it might look.

Elements of Migration Restriction in the United States

Types of Migration Restriction in the United States

As noted and as will be described in fuller detail, during its history, the United States has had a period of no restriction, a period of personal restriction only, a period of personal restriction combined with numerical restriction on one hemisphere, and a period of personal restriction combined with worldwide numerical restriction. It has never had numerical restriction without personal restriction.

Apparatus of Migration Restriction in the United States

Elements of Personal Restriction

As discussed above, questions of personal restriction are not easy, and they have been and continue to be vigorously debated by both legislators and citizenry. For example, in 1980 when the U.S. Select Commission on Immigration and Refugee Policy was exploring the possibility of a point system for the selection of immigrants, the Commission's professional staff was surveyed using a sophisticated factorial survey method that made it possible to estimate the point system each person would favor[13]. Notably, no two estimated point systems were alike (Jasso, 1988b, p. 928–929). For example, only two characteristics were signed the same way by all staff members, having a job offer and having a sibling who is a U.S. citizen, both increasing

[12]The *USCIS Policy Manual* can be accessed via the USCIS website (https://www.uscis.gov/policy-manual). Additional material critically useful for students of U.S. immigration may be found at the main USCIS website (http://www.uscis.gov), including a Glossary (https://www.uscis.gov/tools/glossary), the website of the Office of Immigration Statistics (OIS) at DHS (https://www.dhs.gov/immigration-statistics/), and the website of the Office of Visa Services, a unit of the U.S. Department of State (http://travel.state.gov).

[13]Staff deliberations are described in U.S. Select Commission on Immigration Refugee Policy (1980b, p. 14–15, 23–24, 281–291). For exposition of estimation procedures and each staff member's point system, see Jasso (1988b).

the applicant's desirability; however, staff members differed with respect to which characteristic would provide more points. Staff members disagreed on whether to grant more points to men or to women and on whether to grant points for knowledge of English. Similarly, while staff members were unambiguously attentive to continent of birth, net of the percentage of visas received by the prospective immigrant's co-nationals in the last 5 years, they disagreed on the ordering, providing points in distinctive ways. For example, one staff member gave applicants from Africa 53 more points than applicants from Latin America, while giving 24 points for having a citizen sibling and 23 points for having a job offer; thus, for that staff member, an applicant from Latin America with both a citizen sibling and a job offer would get a lower score than an applicant from Africa with neither[14].

Elements of Numerical Restriction

As discussed above, questions of numerical restriction require several interrelated decisions (as shown in **Table 1**). These are visible in a country's history, for example, in the summaries of briefings and consultations in the reports of the U.S. Select Commission on Immigration and Refugee Policy. Indeed, the history of U.S. immigration law can be viewed as a history of asking and re-asking these questions, continually modifying the answers – for example, exempting professors from the numerical ceiling in one law and subsequently moving them to the numerically-limited stream, or placing husbands of U.S. citizens in the numerically-limited stream and subsequently moving them to the exempt stream[15].

Vocabulary of Migration Restriction

Migration restriction requires a special vocabulary. Two words in the vocabulary pre-exist migration restriction: alien and immigrant. Derived from Latin ("stranger" or "foreigner") and inherited from English common law, the word alien was first used in 1798 in the Alien and Sedition Acts. It is defined in U.S. immigration law as "any person not a citizen or national of the United States," and the USCIS Glossary adds, "'Foreign national' is a synonym and used outside of statutes when referring to non-citizens of the U.S." The word immigrant, also derived from Latin, originally referred to anyone moving to the United States. But numerical restriction would give it a new and restricted meaning.

If numerical restriction classifies aliens into distinct legal categories, then special words are needed to refer to these distinct situations. The Immigration Act of 1924, building on the basic ideas in the Emergency Quota Act of 1921, provided a new definition of immigrant – in essence a precursor to the contemporary permanent resident – excluding diplomats, tourists, aliens in transit, merchant seamen, and treaty traders from the set of immigrants and giving these a new name: non-immigrant (Parker, 1924; U.S. Public Law, 68-139, 1924).

Next, the Immigration Act of 1924 distinguished two kinds of immigrants, non-quota and quota. The 1924 Act's non-quota and quota immigrant classifications are the precursors, respectively, of the contemporary numerically unlimited immigrant and numerically limited immigrant categories. The non-quota class included wives and unmarried children under 18 of U.S. citizens residing in the United States, returning residents, natives of the Western Hemisphere, ministers and professors and their wives and unmarried children under 18, and students at least 15 years of age entering an approved course of study (Parker, 1924; U.S. Public Law, 68-139, 1924).

The Act defines quota immigrants as immigrants who are not non-quota immigrants. Quota immigrants were subject to numerical restriction based on national origins plus a system of preferences. For example, preference would be given to the unmarried children under 21 years of age, parents, and spouses of U.S. citizens age 21 or over, and to agricultural workers and their wives and dependent children under 16 years of age (Parker, 1924; U.S. Public Law, 68-139, 1924).

Finally, the 1924 Act introduced the word visa. Also based on Latin (for "to see"), a visa certified that a prospective immigrant's application had been seen and approved by a consular officer abroad (Parker, 1924; U.S. Public Law, 68-139, 1924). Indeed, the Act uses both noun and verb, referring to "an immigration visa which shall consist of one copy of the application..., visaed by such consular officer" (in the section on Migration Restriction Regimes)[16].

Of course, words are living things. They come and go, and their meaning changes. Perhaps due to film and television, the word alien became associated with extraterrestrial life forms (some friendly, some not), and increasingly the synonym "foreign national" was used in immigration discourse (as in the USCIS Glossary, noted above).

But words are also vulnerable to conscription by political wordsmiths. On 8 October 2019 the USCIS Policy Manual published a "Technical Update" subtitled "Replacing the Term 'Foreign National'." The Update states:

> This technical update replaces all instances of the term "foreign national" with "alien" throughout the Policy Manual as used to refer to a person who meets the definition provided in INA 101(a)(3) ["any person not a citizen or national of the United States"].

Nothing was safe from the new deployment, not even the venerable annual reports published by the Office of Immigration Statistics (OIS) at DHS, which form the statistical foundation for much immigration research – the Annual Flow Reports and

[14]These results suggest that having a job offer and a U.S. citizen sibling are consensually viewed as plausible indicators of effective screening and socialization into the classic Aberle et al. (1950) shared "self-sufficient system of action".

[15]For a vivid account by a contemporary of the provisions of the Immigration Act of 1924 (also known as the Johnson-Reed Act), enacted 26 May 1924, which revised and codified the numerical restrictions first tried as an experiment in the First Quota Law of 1921 (also known as the Emergency Quota Act or the Johnson Quota Act), enacted 19 May 1921, see Parker (1924, 1925); for the 1924 Act itself, see U.S. Public Law, 68-139 (1924).

[16]See Parker (1924, p. 739, 741) for a lively account about how the two chambers of the U.S. Congress had envisioned "certificates" and "visas" and the two conceptions were in the end merged into a visa system.

the annual Population Estimates[17]. The opening sentence of the "Annual Flow Report" on legal permanent residents went from

> Immigration law defines a lawful permanent resident (LPR) or "green card" recipient as *a person* [italics added] who has been granted "the status of having been lawfully accorded the privilege of residing permanently in the United States as an immigrant in accordance with the immigration laws, such status not having changed.

for the 2018 cohort (Baugh, 2019) to

> Immigration law defines a lawful permanent resident (LPR) or "green card" recipient as *an alien* [italics added] who has been granted "the status of having been lawfully accorded the privilege of residing permanently in the United States as an immigrant in accordance with the immigration laws, such status not having changed.

for the 2019 cohort (Baugh, 2020). A footnote was added to "alien" providing the definition in the Immigration and Nationality Act (and in the USCIS Glossary), namely, "An alien is any person not a citizen or national of the United States."

Similarly, in the Population Estimates reports for LPRs, the phrase "unauthorized immigrants" (Baker, 2019a, p. 2) was changed to "illegal aliens" (Baker, 2019b, p. 1). The change in the Population Estimates reports for the unauthorized was more extensive, changing not only the opening sentence but also the title. The opening sentence went from

> This report provides estimates of the size of the *unauthorized immigrant* [italics added] population residing in the United States as of January 2014 by period of entry, region and country of origin, state of residence, age, and sex.

for the January 2014 estimate (Baker, 2017) to

> This report provides estimates of the size of the *illegal alien* [italics added] population residing in the United States as of January 2015 by period of entry, region and country of origin, state of residence, age, and sex.

for the January 2015 estimate (Baker, 2018). A footnote was added to "illegal alien" with the following text:

> The Department of Homeland Security refers to foreign-born non-citizens unlawfully present in the United States as "illegal aliens." Previous versions of this report used the term "unauthorized immigrants" to refer to this population.

Further adventures in this "war of the words" no doubt await (Shear and Jordan, 2021).

[17]For example, the estimates of the foreign-born population reported in Jasso and Rosenzweig (2020) would not have been possible without the Population Estimates reports.

The Consequences of Migration Restriction in the United States

As discussed above, when the country restricting immigration is attractive, the immediate consequences of restriction are unauthorized migration (for both personal and numerical restriction) and visa backlogs (for numerical restriction). The United States provides a prime example that the immediate consequences of restriction are unauthorized migration and visa backlogs. As noted by Masanz (1980, p. 33), "According to the Immigration Bureau [in the Annual Reports of 1922 and 1923], the increase in the various restrictions on alien entry into the United States was accompanied by an increase in the number of surreptitious entries and, eventually, in the establishment of a thriving smuggling industry." The 1922 Annual Report (U.S. Commissioner General of Immigration, 1922) specifically mentions that prospective immigrants desiring "to evade the restrictions of the 'quota' act have proceeded to both Canada and Mexico in large numbers, and it is these who have endeavored, and are endeavoring, to gain admission by stealth, usually with the aid of hired smugglers" (quoted in Masanz, 1980, p. 3). The official INS history of immigration (U.S. Immigration and Naturalization Service, 1979-2001, p. 11) states, "An unintended result of the quota system's limits on immigration was a great rise in illegal immigration by 1923." Ninety years later, Bhagwati and Rivera-Batiz (2013, p. 12) observe, "as long as immigration restrictions exist, people will continue to enter the United States illegally," and, one might add, overstay legal visas and work without authorization.

Similarly, as long as numerical restrictions exist, eligible people will apply to immigrate, even when immigration is not possible for many years. And backlogs will accumulate. Virtually every primary and secondary source on the history of U.S. immigration since 1921 includes some mention of backlogs. For example, the official U.S. Immigration and Naturalization Service (1991, p. 21) history of immigration refers to "quota backlogs [becoming] too large" in the 1950s, and Vialet (1979, p. 62–63), in the history of immigration law prepared for the use of the newly established U.S. Select Commission on Immigration and Refugee Policy, describes the rapid development of a Western Hemisphere backlog after imposition of the numerical ceiling in 1968.

These immediate consequences spawn second-order consequences, in particular, policy devices to deal with them. The policy devices include enforcement measures as well as mechanisms for legalization and periodic clearing of backlogs.

Enforcement measures include deportation and border measures. It is no accident that, as noted by Masanz (1980), the Border Patrol was established as part of the provisions of the Act of 28 May 1924 – 2 days after the Immigration Act of 1924.

Another policy device is legalization. Again, it is no accident that the registry provision of U.S. law was established within 5 years of the Immigration Act of 1924, via the Registry Act of March 2, 1929. Under this provision, a record of admission is created for aliens whose record of admission cannot be found and who meet certain criteria, including residence in the United States since before a certain date. In 1929 that date was set in 1924. Subsequently it was moved several times, and currently

TABLE 2 | Legalization of unauthorized: U.S. immigration registry law.

Year of Act	Entry date	Years in U.S. required	
		Shortest	Longest
1929	1 July 1924	5	15
1939	3 June 1921	18	19
1940	1 July 1924	16	34
1958	28 June 1940	18	25
1965	30 June 1948	17	38
1986	1 January 1972	14	49

stands at 1 January 1972. **Table 2** reports the date required for inception of residence by each law since the registry provision was established.

Although the registry provision was ostensibly intended for persons who wanted to naturalize but did not have or could not locate the requisite record of admission, and deportable aliens were not explicitly mentioned until legislation in 1958, it may have been used as a legalization tool (Bruno, 2001; Wasem, 2010). Indeed, a 1936 description in the Statistical Abstract (U.S. Department of Commerce, 1936, p. 104) states that the registry legislation "legalizes permanent residence in the United States." And the website of the U.S. Citizenship and Immigration Services (USCIS) describes the registry files for the period March 2, 1929, to March 31, 1944, available for genealogical searches, as documenting "the first 'legalization program' authorized by Congress"[18].

Other policy devices include temporary legalization. The 1952 Act granted the Attorney General parole authority, whereby persons otherwise inadmissible can be granted temporary entry on humanitarian grounds (Wasem, 2010).

Similarly, the 1990 Act introduced a new way to allow unauthorized migrants to remain in the United States temporarily, authorizing the Attorney General to grant temporary protected status (TPS) to undocumented alien nationals of designated countries undergoing armed conflict, natural disasters, epidemics, or other conditions which temporarily prevent the migrants' safe return (U.S. Immigration and Naturalization Service, 1979-2001, Appendix 1–20).

As for backlogs, virtually all discussions of immigration legislation include earnest discussions about how to structure eligibility for LPR so that backlogs do not accumulate. Additionally, modifying the basic apparatus for restriction can clear backlogs. For example, the U.S. Select Commission Staff Report of 1981 notes that the Senate Committee charged with reviewing the immigration system in 1947-1950 considered moving parents of U.S. citizens and husbands of U.S. citizens (regardless of the date of the marriage) from the numerically-limited stream to the numerically-unlimited stream, moves which would clear the parent backlog (then facing a wait of 7 to 8 years) and reduce the backlogs for Greece, Portugal, Romania, Spain, and Turkey (U.S. Select Commission on Immigration Refugee Policy, 1981, p. 313).

Moving a subset to the numerically unlimited stream would of course clear the backlog for that subset. However, given the high demand for permanent visas, it is unlikely that any modification of the criteria for numerically-limited immigration would prevent backlogs.

This discussion has focused on the consequences of migration restriction for the migration restriction regime. Of course, there are also consequences for all actors and countries in the migration process – from talent lost or delayed for the destination country and remittances lost or delayed for the origin country to a range of effects on the life chances of individuals and the stratification structures of both origin and destination countries (Jasso, 2011).

A Periodization of U.S. Immigration History Based on Migration Restriction

Before 1875 immigration to the United States was largely unrestricted, although there was substantial restriction on citizenship and naturalization. For example, the Naturalization Act of 1790 limited naturalization to "free white persons" and there was legislation on such matters as the residency period required for naturalization and the link between gender, marriage, and naturalization (Smith, 1998). But immigration *per se* was largely unrestricted. Thus, the period 1789-1874 was a no-restriction era and may be considered the First Immigration Era, a Pre-Restriction Era.

The Immigration Act of 1875 marks the start of personal restriction on U.S. immigration and thus may be considered the start of the Second Immigration Era. It prohibited for the first time the entry of persons considered undesirable, barring prostitutes and convicts. It would be followed by a long string of laws, noticing a large variety of personal characteristics, conditions, and behavior, starting with race in 1882 (Chinese Exclusion Act) and accumulating a rapidly growing list of inadmissibles, such as paupers, contract laborers, persons with certain contagious diseases, polygamists, anarchists, feeble-minded persons, unaccompanied minors, illiterates, and other Asians.

But personal restriction did not mitigate the growing discontent with immigration, and 1921 brought the Emergency Quota Act of May 19, 1921, introduced above, placing a ceiling of 357,000 on immigration from the Eastern Hemisphere, the first numerical restriction on U.S. immigration and thus marking the start of the Third Immigration Era. However, a subset was exempt from the numerical ceiling, including actors, singers, professors, and ministers. The Quota Law, which was temporary "emergency" legislation, was quickly extended for 2 years (with an amendment to increase from 1 to 5 years the requisite period of residence in the Western Hemisphere to qualify for exemption from the ceiling), then followed by the Immigration Act of 1924, which revised and codified all elements of the apparatus for restriction. It reduced the ceiling to 164,000, modified the criteria for exemption from the ceiling, and modified the national origins formula and introduced a system of preferences for the numerically limited stream. It also introduced the provision that

[18]For further information, see http://uscis.gov/history-and-genealogy/genealogy/registry-files-march-2-1929-March-31-1944.

aliens ineligible for citizenship could not be admitted to legal permanent residence, as discussed by Parker (1925).

There followed a long string of new laws, including the 1924 law establishing the Border Patrol and the 1929 law establishing the registry provision, discussed above, as well as laws modifying the apparatus for restriction (e.g., a 1932 law exempting from the numerical limit the husbands of U.S. citizens, provided that the marriage occurred prior to issuance of the visa and prior to July 1, 1932)[19].

World War II brought new concerns and new legislation, mostly for security but also dismantling some of the elements of restriction – for example, two 1940 laws extending naturalization to military personnel regardless of race and permitting the naturalization of indigenous races of the Western Hemisphere, a 1943 law extending naturalization to Chinese persons and persons of Chinese descent (now that China was a close wartime ally of the United States), a 1946 law which gave non-quota status to the Chinese wives of U.S. citizens, a 1948 law extending naturalization to Filipino persons or persons of Filipino descent and to persons of races indigenous to India, and a 1950 law providing non-quota status to the spouses and minor children of members of the American armed forces, regardless of race (provided that the marriage occurred before 19 March 1952), as well as the landmark Immigration and Nationality Act of 1952, which eliminated all racial and gender bars to naturalization but, over President Truman's veto, retained the national origins formula for the numerically limited stream.

Other laws provided for clearing backlogs, for example, a 1962 law giving non-quota visas to certain applicants for fourth preference (brothers, sisters, and children of citizens) and first preference visas (special occupational skills). Notably, not long after President John F. Kennedy issued the groundbreaking Executive Order 10925 prohibiting discrimination in government employment and employment by government contractors on the basis of "race, creed, color, or national origin" (6 March 1961), legislation was enacted eliminating the requirement that visa applicants provide their race (26 September 1961).

Pressure mounted for elimination of the national origins quotas, and after 13 years Congress passed the Immigration and Nationality Act of 1965 (also known as the Hart-Celler Act), abolishing the national origins quotas. The price was extending the numerical ceiling to the Western Hemisphere, thus ushering in the Fourth Immigration Era, as shown in **Table 3**.

The 1965 Act also modified the apparatus for restriction, inclusive of the numerical ceiling, the criteria for exemption from the numerical ceilings, and the criteria for prioritization within the numerically limited stream[20].

[19] As might be expected, the single most numerous class of admission is that for spouses of U.S. citizens – e.g., 304,334 (or 29.5%) of the 1,031,765 persons granted legal permanent residence in 2019 (U.S. Department of Homeland Security, 2019). A longstanding question pertains to the nativity of the U.S. citizen sponsors of spouses. The three pieces of information currently available indicate that the estimated percentage native-born among the U.S. citizens who sponsored the immigration of their spouses declined from 80.3 in 1985, to 55.0 in 1996, and to 47.4 in 2003 (Jasso and Rosenzweig, 2006, p. 354; Jasso, 2011, p. 1300).

[20] For further information and discussion, see Vialet (1979, p. 161–351).

TABLE 3 | Four immigration eras in the United States, classified by type of migration restriction and hemisphere.

Type of restriction	Eastern hemisphere	Western hemisphere
1. First Immigration Era: 1789-1984		
Personal	No	No
Numerical	No	No
2. Second Immigration Era: 1875-1920		
Personal	Yes	Yes
Numerical	No	No
3. Third Immigration Era: 1921-1964		
Personal	Yes	Yes
Numerical	Yes	No
4. Fourth Immigration Era: 1965-		
Personal	Yes	Yes
Numerical	Yes	Yes

Figure 2 provides a view of the restriction-focused periodization of U.S. immigration history. It includes vertical lines at 1875, 1921, and 1965, marking the start of the Second through Fourth Immigration Eras[21].

A Close Look at the 1965 Act

The migration restriction perspective enables focused assessment of each piece of legislation. To illustrate, consider the 1965 Act. Of course, each Immigration Era and, within each Era, each piece of legislation merit sustained assessment. For example, the Immigration Reform and Control Act (IRCA) of 1986, the "smaller" Immigration Marriage Fraud Amendments Act of 1986, the Immigration Act of 1990, and the Illegal Immigration and Immigrant Responsibility Act (IIRIRA) of 1996 produced far-reaching changes to both personal criteria and numerical criteria for LPR admission as well as to associated procedures and requirements. Here the focus is on the 1965 Act, in part because it is "boundary" legislation, ushering in the current era, the Fourth Immigration Era, in part because two of its provisions are central to the history of U.S. immigration law – abolition of national origins quotas and the end of distinctive treatment for the Eastern and Western Hemispheres.

What did the 1965 Act accomplish? Look at **Table 1**. The Act provided modified answers to the questions underlying the apparatus of numerical restriction. It provided a new ceiling for numerically-limited immigration (at first separate ceilings for the two Hemispheres, subsequently a single worldwide ceiling starting in 1977). It modified the criteria for numerically-unlimited immigration, moving parents of U.S. citizens from the second preference to the unlimited stream. It altered the preferences for the numerically-limited stream (at first only in the Eastern Hemisphere, extended in 1976 to the Western Hemisphere), for example, moving employment immigrants from first preference to third and sixth preference (skilled and unskilled, respectively) and moving spouses of legal permanent residents from third preference to second preference.

[21] For further detail on the legislation passed in the four Immigration Eras, see Jasso and Rosenzweig (2006).

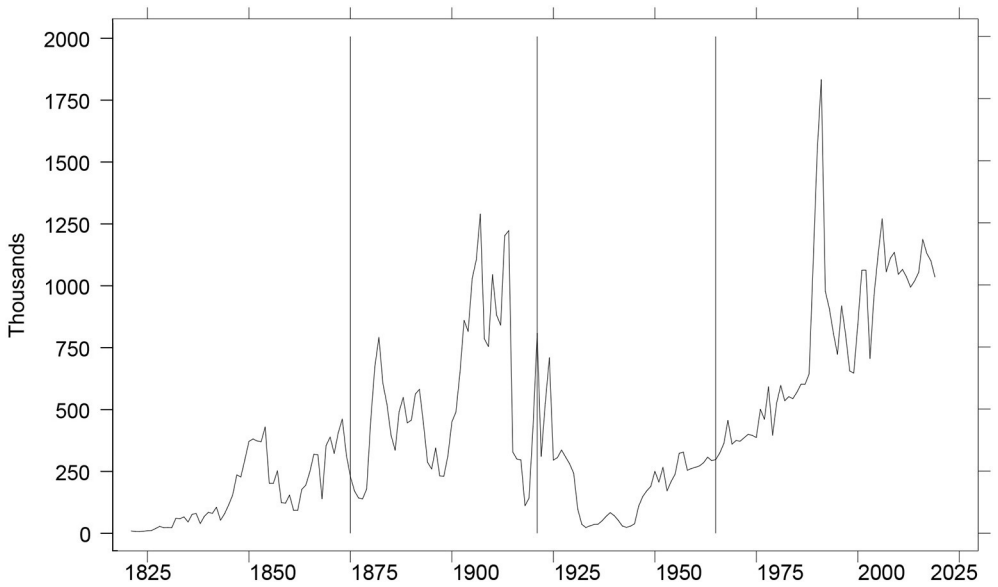

FIGURE 2 | Immigration to the United States: Four Immigration Eras, 1820-2019. Vertical lines at 1875, 1921, and 1965, marking the start of the Second through Fourth Immigration Eras.

What about unauthorized migration and visa backlogs? Whatever the modifications of the 1965 Act to the apparatus for restriction, they did not prevent either unauthorized migration or visa backlogs. Both grew quickly – unauthorized migration to about 3.5 to 5.0 million and backlogs to over a million by 1980, as noted in the staff report of the U.S. Select Commission on Immigration Refugee Policy (1981, p. 377, 482).

And what about policy devices for dealing with unauthorized migration and visa backlogs? The 1965 Act did not invent the registry provision (1929) or the Attorney General's parole authority (1952) or temporary protected status (1990). It did not invent the Diversity Visa Program (1990), which has made it possible for persons from all over the world to come legally to the United States, competing by lottery for 50,000 visas annually.

Indeed, within less than a decade and a half, pressure would mount to review immigration law, and Senator Edward M. Kennedy, the great champion of the 1965 Act, would write, in the Introduction to the history of immigration law prepared in 1979 for use by the newly established U.S. Select Commission on Immigration and Refugee Policy (Vialet, 1979, p. 1):

> The current Immigration and Nationality Act is a generation out of date. It is out of touch with the times, and inadequate to meet modern needs. It was enacted in 1952 over President Truman's veto, at the depth of the cold war and the restrictionist atmosphere of that era. It was flawed from the beginning with discriminatory and anti-alien provisions. Some of the more blatantly racist and objectionable sections – such as the national origins quota system and the Asia-Pacific Triangle provisions – were repealed in 1965.
>
> But not much else has changed. The 1952 Act is still the basic statute governing immigration. But after more than a quarter century, its provisions and administrative procedures are seriously inadequate. And, until the last 2 years, little has also been done to strengthen the role of the Immigration and Naturalization Service in implementing the law.

Without doubt the greatest contribution of the 1965 Act was abolition of the national origins quotas – a strong and proud statement that the United States pays no attention to race and nationality.

In years to come, however, a case may be made that the imposition of numerical restriction on the Western Hemisphere dealt a mortal blow to cherished ideas about the New World, about countries which started as colonies of European powers and threw off the bonds, about countries with a weaker link between ancestry and nationality, about Good Neighbors. Perhaps it was valuable to affirm that not only American Indians born in Canada can move freely to the United States (as per the John Jay Treaty of 1794), and obtain LPR, but that so too could all natives of the Americas.

Prospects for a Fifth Immigration Era

Might there be a Fifth Immigration Era in the United States? What would it look like? First, a Fifth Era could reprise one of the three Eras before the current Fourth Era. That is, U.S. immigration law could return to the fully unrestricted migration regime, as the First Immigration Era. Or it could return to an exclusively personal-restriction regime, as the Second Immigration Era. Or it could return to worldwide personal restriction but numerical restriction only on prospective immigrants from the Eastern Hemisphere, as the Third Immigration Era.

Second, a Fifth Era could continue to disregard Hemisphere but, unlike the Second or Fourth Eras, it could institute

an exclusively numerical-restriction regime, with no personal restriction at all.

Third, a Fifth Era could revive the Hemisphere distinction and institute one of several variants: (1) exclusive personal restriction on the Western Hemisphere and exclusive numerical restriction on the Eastern Hemisphere; (2) exclusive personal restriction on the Eastern Hemisphere and exclusive numerical restriction on the Western Hemisphere; (3) a fully unrestricted regime for the Western Hemisphere and a fully restricted regime for the Eastern Hemisphere; (4) a fully unrestricted regime for the Eastern Hemisphere and a fully restricted regime for the Western Hemisphere.

One can imagine other possibilities for a Fifth Era. For example, a new migration restriction regime could retain the current disregard for Hemisphere but notice something entirely new such as planetary provenance. The fully restricted regime of the Fourth Era could continue for earthlings but extra-terrestrials would face neither personal nor numerical restriction.

For the time being, however, it would seem that the Fourth Immigration Era will continue. Of course, and compatible with the Fourth Immigration Era, there could be many changes in the personal criteria used to favor or bar immigrants and many changes in the numerical ceilings, as well as changes in immigration procedures.

Indeed, a new change has begun almost imperceptibly. It was noted above that soon after President John F. Kennedy's Executive Order 10925 prohibiting discrimination in government employment and employment by government contractors on the basis of "race, creed, color, or national origin" (6 March 1961), legislation was enacted eliminating the requirement that visa applicants provide their race (26 September 1961). Recently, questions on race and Hispanic origin have begun to appear in the USCIS forms used by immigrant applicants and their sponsors, for example, in the basic form used by sponsors of relatives (Form I-130, Petition for Alien Relative), in the form used by applicants for legal permanent residence who are already in the United States (Form I-485, Application to Register Permanent Residence or Adjust Status), in the form used to file for removal of conditionality restrictions by immigrants who qualified for legal permanent residence on the basis of a marriage of less than 2-years' duration (Form I-751, Petition to Remove Conditions on Residence), and in the form used to file for naturalization (Form N-400. Application for Naturalization).

AFTERWORD

Toward Possible New Creative Policy Devices

Perhaps the 1965 Act has been held to an impossible standard. Perhaps the apparatus of restriction does not admit of more creative innovations. Perhaps neither do the policy devices to deal with restriction. Past history suggests two incantations (visible in **Figures 1**, **2**), and they are not happy to contemplate: economic crisis and war.

Moreover, with the exception of lotteries and parole authority and temporary protected status, creative and happy policy devices are scarce. It is telling that although probably the entire country agrees that the "immigration system is broken," there is pervasive disagreement about what precisely is broken. To some, what is broken is one or another element of the apparatus for restriction – ceiling too high or too low, persons included or excluded from the numerically exempt categories, and so on. To others, what is broken is one or another of the consequences of restriction – too much unauthorized migration (currently estimated at about eleven million), too large backlogs (currently at 3,978,487 approved and waiting in line for the approximately 366 thousand preference category visas given annually, as reported by the U.S. Department of State, 2020)[22]. To still others, what is broken pertains only to administrative matters – too many processing delays or too high fees associated with the immigration application process.

Interestingly, it seems to be generally accepted that, as the U.S. Select Commission on Immigration Refugee Policy (1981, p. 384) observed almost 40 years ago, "the United States can never return to a policy of open migration or the massive migrations of the nineteenth and early twentieth centuries...." Numerical restrictions appear here to stay, albeit, as Zolberg (1983, p. 13) put it, "with no precise rationale offered for them other than their self-evident necessity."

Still, there may be a few policy devices useful all around. Consider unauthorized migration. Immigration researchers believe that a portion of the set of unauthorized consists of persons in the backlogs, who rather than wait in the origin country for the visa to become available, wait in the United States. Some were in the U.S. with temporary visas and have U.S.-born children. Like all parents, they want the best for their children, and in this case there is a happy coincidence of interests among the parents and the larger citizenry, for the longer and deeper the experience of Americanization, the more fluent in English and the more productive Americans the children will be. The challenge is how to provide this experience of Americanization without increasing unauthorized migration. The possible numbers are not trivial. As noted above, the backlogs are massive – almost four million persons waiting for numerically-limited visas granted at the rate of about 366,000 a year, suggesting, on average, a wait of over 10 years, not counting a further period for administrative processing.

One approach is to make unauthorized residence in the United States less urgent for prospective immigrants in the backlogs by utilizing the vast American network around the world to provide advance training in English as well as some modicum of socialization into American life. The American network around the world has many components, emanating from both the public and private sector, that could be enlisted in this effort. Consider four: The first component of the U.S. global network that could be used in this effort consists of the schools operated by the Department of Defense, via the Department of Defense Education Activity (DoDEA) for the

[22]The backlog figures suggest, on average, a wait of over ten years, not counting a further period for administrative processing. Of course, the waiting times differ across visa category and origin country, as well as for new arrivals and adjustees (Jasso, 2011, p. 1307-1309).

children of military personnel stationed at military installations abroad. The second component of the international U.S. network consists of the American-sponsored overseas schools assisted by the Department of State via the Office of Overseas Schools. The third component includes all the programs of the Bureau of Educational and Cultural Affairs, including the Office of English Language Programs. The fourth component is the growing network of American universities with branches abroad.

It would be useful to assess the possibilities for enlisting the substantial American presence abroad in the service of providing English language training and early Americanization for future LPRs around the world who are in the visa-number backlogs waiting for numerically-limited visas, thus tamping down the urgency to take up residence in the United States.

Another approach would bypass countries and their immigration laws. Suppose that migration restriction regimes are indeed inherently unstable – with fundamental disagreements on their moving parts and continual discussions of the questions in **Table 1**—and that a general justice principle remains elusive, unlike the case of the just society noted earlier or economic inequality, where it is possible to say with some albeit limited confidence that "inequality in the distribution of a good is a bad" (Jasso, 2017). Suppose further that natural disasters and political upheavals continue to generate large numbers of displaced persons urgently in need of refuge. Finally, suppose that at least one important sector of society – research and education – depends on free exchange of ideas and unrestricted travel to conferences. Then it might be possible, with international cooperation and generous philanthropy, to establish a network of conference centers around the world, governed by an international consortium, on land or islands contributed by countries or new artificial islands, staffed by migrants and refugees, providing not only all the amenities of a high-functioning conference center but also training for its staff, which – as is well known, and certainly in the hospitality industry – spans a large swath of occupations and trades. The staff could also include people from around the world taking a year or two to be part of a great and noble experiment while also learning a trade or serving as medical recreation/school staff. For scholars there would no longer be the constant worry of obtaining a visa in time to attend a conference, as all "citizens of the world" would be immediately admissible. For migrants and refugees, there would be a place to build a new life. Indeed, the conference centers would use the wonderful diversity of backgrounds and languages and ideas to develop cognitive and noncognitive skills, helping everyone achieve their highest potential and thereby advancing both the own good and the common good.

Revisiting One Dimension of Personal Restriction in the United States

As a final exercise, one might venture onto perilous territory to think again about the increasing emphasis on high-skilled immigrants, a dimension of restriction based on personal characteristics. Should the United States favor the immigration of the more educated or the less educated? If the less educated are less educated due to lack of opportunities, their children will inherit their drive and energy and in the American world of opportunity will achieve much. Thoughts like this were in the minds of two members of the U.S. Select Commission on Immigration and Refugee Policy – Cabinet secretaries, heads of executive departments – when they met, as part of their regular schedule of meetings, on 18 June 1980 in The Great Hall of the Department of Justice in Washington, DC, with the Honorable Theodore M. Hesburgh, Chairman, presiding, to consider criteria for selecting new-seed independent immigrants (U.S. Select Commission on Immigration Refugee Policy, 1980b, p. 325).

> – The Honorable Patricia Roberts Harris, Secretary of Health, Education, and Welfare:
>
> "Some of the models before us suggest standards for admission in the third category – English competency, education. I have a very non-legalistic reaction to that which goes to Emma Lazarus's poem, 'Give Me Your Huddled Masses.' Those are not people with degrees or people who speak English. We should maintain a place in this country for people who have the 'get up and git' to come here."
>
> – The Honorable Benjamin Civiletti, Attorney General:
>
> "I would agree with [Secretary Harris]. I'm not sure how I come up. But I do know that if we had an exclusionary system with regard to language and occupation in our historical preferences, I would not be sitting here now!"

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Accelerating the Passage to Citizenship: Marriage and Naturalization in France

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Naturalization systems often provide immigrant spouses of citizens with accelerated access to citizenship, but thus far, the impact of such fast-track procedures has yet to be examined by empirical analysis. Toward that end, we leverage a unique feature of French naturalization policy: a dual track system, one for standard naturalization and a second that makes naturalization a right for non-citizens married to citizens. We show that, overall, family-level factors exercise the greatest influence on naturalization decisions relative to individual and contextual factors; further, marriage to French citizens is the single most powerful factor, yielding effects on naturalization in both tracks. However, while marriage to a naturalized citizen promotes standard naturalization, marriage to a French native fosters citizenship *via* the marriage track. Women migrants who marry French natives are particularly likely to naturalize *via* marriage. Contributing to the study of naturalization by attending to the link between two institutions—naturalization and marriage—we show that the effects of an apparent bias toward the familial ties of citizens run up against state efforts to close off membership to outsiders.

Keywords: citizenship, family, naturalization, France, marriage

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INTRODUCTION

Recent scholarship on citizenship acquisition has increasingly focused on the micro context in which the naturalization decision unfolds: the family. Seeking to understand the decline in naturalization rates in Germany, Street (2014) notes that as family members are interdependent, individuals are likely to weigh family-level implications when deciding whether to acquire a new citizenship. Focusing on the Netherlands, Peters et al. (2016) emphasized that naturalization takes place in the "context of linked lives" (p. 361), tying the decision-making calculus of any one individual to the interests of other family members. Studying young adults who arrived in the United States as migrant children, Soehl et al. (2018) proposed an "embedded model of naturalization choice." Their analysis complements Street's, showing that just one variable—whether or not parents naturalized before the respondent or in the same year—has the single most powerful impact on naturalization.

Thus, family-level decisions can anchor or signal commitment to the country of immigration, whether by providing more information about the benefits of citizenship or the mechanics of the process, or by transmitting norms or values about civic membership. Yet not considered by this research are the institutional factors that also influence family effects on naturalization, as naturalization is constructed in ways that heighten the relevance of family interdependencies. In such countries as the United States, Spain, Norway, the Netherlands, France, and Austria, spouses of citizens enjoy an accelerated track to naturalization, gaining eligibility in a reduced time frame. Providing the foreign-born spouses of citizens with facilitated passage to citizenship reflects citizens'

greater claiming capacity, as well as the overall bias animating family reunification, which values the pursuit of citizens' happiness. By facilitating naturalization of the foreign-born spouse, states protect the family life of citizen spouses, who gain the assurance that they and their spouse can forever remain on home grounds (Bonjour and Block, 2016). By privileging marriage to citizens, states also reinforce marriage's importance while signaling an intuitive understanding of the lessons that migration scholarship teaches—that having intimate ties to citizens fosters integration (Abrams, 2013).

However, these very same procedures weaken states' ability to control migrants and migration. Citizenship is a scarce status, wanted by many, in part because of the migration and mobility privileges it confers. As long as they lack citizenship, immigrant residents remain subject to the coercive power of the state, which can extrude them, prevent them from re-entering if they leave, and, by requiring them to renew residence permits, subject them to a type of continuing scrutiny from which citizens escape. As residence permits (such as lawful permanent residence in the Unites States) allow for long-term presence but do not provide the security gained *via* citizenship, the possibility of hastening the passage to citizenship by marrying a citizen can be the decisive influence on the marital decision, as some research suggests (Masure, 2014).

Naturalization also expands the pool of migrants who would not otherwise be eligible for entry, such as the parents of a naturalized spouse or the naturalized spouse's minor children from a previous marriage. Furthermore, naturalization can accelerate family reunification: in some countries, such as the United States, access to residency rights for the spouses, parents, and minor children of citizens is a matter of processing delays, as opposed to the years postponing the arrival of denizens' wives or husbands (Abrams, 2006). While acquisition of citizenship permanently protects naturalized immigrants from the threat of deportation, it similarly leaves them permanently free to benefit from the near-universal liberalization of divorce, separating from the citizen spouse and initiating a new, binational marriage, in turn triggering additional migration (Cole, 2014).

Consequently, procedures that facilitate the naturalization of citizens' spouses weaken citizenship's role as an institution of social closure. Moreover, as implementing those procedures activates a tension between two competing state goals—responding to, and validating, the preferences of citizens (who are also voters) vs. retaining tighter control over new entries—naturalization policy on the books and in practice may diverge. Heightening the possibility that the control imperative may take priority is awareness that tightened policies have left marriage as one of the few means of legal entry, and hence the growing perception that marriage comprises the weak link in the chain of migration control (Kringelbach, 2013). Not only is marriage inherently difficult to regulate, but the challenge is heightened by virtue of the fact that its control affects not only immigrants but citizens as well. Furthermore, as globalization spurs binational marriage, both *via* immigration *and via* the increasingly common, foreign experiences of citizens, many binational marriages occur abroad, thereby escaping home state supervision altogether.

Thus, "state agencies seeking to control and limit migration have marriage migration in their sights (Williams, 2012: 35)." Binational marriages increasingly fall under the suspicion that citizens and foreigners are using marriage instrumentally for immigration purposes (Beck-Gernsheim, 2007), leading migration control agencies to cast a dubious look at binational marriages. US Citizenship and Immigration Services, for example, reportedly views 20 to 33 percent of marriages between US citizens and immigrants as fraudulent (Brettell, 2017: 86). Consequently, requiring marriage migrants to demonstrate the bona fide nature of their relationship has become a pervasive aspect of migration control. While the legitimacy of binational marriages is often scrutinized at the moment of migration, later efforts to secure citizenship may reactivate those doubts, as indicated by a study of naturalization practices under the Trump administration, which found that adjudicators asked more questions about applicants' marriage and demanded "more proof in the form of joint tax returns, bank statements, insurance and bills (Capps and Echeverria-Estrada, 2020:16)." Since officials have ample scope for discretion, the control imperative might also affect the criteria used to determine a marriage's bona fides. Officials may view only certain types of applicants—by virtue of sex or national origin—or types of citizen spouses—by virtue of place of birth or parentage–as appropriate for benefiting from fast-track procedures. Similarly, relationships that depart from the standard pattern—for example, those involving a significant age difference between spouses—might induce additional scrutiny. Moreover, the strategic value of marriage for the purposes of migration can indeed generate marriages that might suffer from close examination, as suggested by the research of Boulahbel-Villac (1995), who profiled the pattern of younger, urban-origin, and better educated Algerian women marrying older, less educated, Algerian-born spouses residing in France. Thus, just as fear that close examination of one's personal record might reveal problems better left hidden deters potential citizens from applying for naturalization (Gilbertson and Singer, 2003), so might concern over possibly problematic aspects of a marriage lead persons technically eligible for the accelerated track to opt for standard naturalization instead.

In this light, prior research on the familial embeddedness of naturalization may have overemphasized the importance of micro-level motivations at the expense of the match between two institutions—marriage and naturalization. Both marriage and naturalization bear a certain similarity, in that each entails a relationship to the state. A feature of many naturalization systems, the bias in favor of applicants with citizen spouses adds further incentives to acquire a new citizenship. However, whether qualifying applicants take advantage of fast-track procedures is an altogether separate question. Doing so necessarily puts the bona fides of marriages, as well as the documentation testifying both to the nature of the relationship and the identities of the partners, under closer inspection. Moreover, that heightened scrutiny occurs in a particular context: an immigration system biased toward exclusion and against noncitizens; a "securitization of immigration law and modernization of documentation systems increase(ing) the fear

that documents are fraudulent (Mitchell and Coutin, 2019: 888)"; and a threshold event—namely, naturalization—making settlement permanent and foreclosing the possibility of expulsion.

This study represents the first empirical attempt to understand the impact of the institutional features of naturalization that, at least on paper, facilitate the route to citizenship for immigrants with citizen spouses. We do so by exploiting a distinctive feature of French naturalization policy. Although numerous countries facilitate the path to citizenship for the foreign-born spouses of citizens, France provides them with an altogether separate track. Naturalization by declaration, a procedure that, for simplicity, we will label "naturalization by marriage," makes naturalization a right, thereby accelerating the process. We draw on the *Trajectories and Origins Survey* (TeO), a large, high-quality, representative survey of France's foreign-born population, conducted in 2008–2009, which has the unique feature of distinguishing between these naturalization routes. Immigrants married to French citizens have much higher rates of naturalization (62 percent), than those married to foreigners (15 percent) and those without partners (39 percent). But surprisingly, most spouses of citizens do not naturalize *via* the marriage track, even if in principle they are all eligible to do so. Instead, when immigrant spouses of citizens naturalize, the great majority (77 percent) do so *via* the more time-consuming standard track, involving numerous interactions with authorities, during the course of which officials make an ad hoc assessment of the degree of assimilation.

Thus, going beyond previous research on the influence of family-level factors on naturalization decisions, this article seeks to illuminate the factors that propel naturalizing citizens onto one of the two different tracks, thereby gaining insight into the relationship between immigrants' characteristics and the features of the system through which naturalization applications are processed. Using an event history analysis, we explore the determinants of naturalization by both tracks. We do so by considering the three levels on which prior scholarship has focused: the family level, focusing on factors related to the parentage of the spouse and the location of respondents' parents and children; the individual level, focusing on characteristics such as age at migration, legal entry status, and education; and the contextual level, focusing on factors linked to migrants' countries of origins, which we retrieve from a variety of data sources and match to the TeO survey. Three main aims guide the analysis: 1) to explore whether naturalization determinants exert similar effects on both tracks, with a specific focus on marital status; 2) to assess the relative weight of individual-level, family-level, and contextual-level variables on naturalization over time; and 3) to assess whether marital status interacts with individual and contextual-level variables to put certain categories of migrants on differential pathways to citizenship.

BACKGROUND

Naturalization in France

As a citizenship system, France, with its history as a *jus solis* system, low residency requirements, as-of-right citizenship for the spouses of French citizens, and acceptance of dual citizenship, resembles the liberal systems of settler states like the United States or Canada. Nonetheless, French naturalization rates are among the lowest in Europe.

Applications for naturalization begin at the prefecture, which sends accepted dossiers to the Interior Ministry for final determination. As broad national policies exercise influence at the Ministry whereas policing takes precedence at the prefecture, the Ministry decides whether an immigrant is naturalized, but the prefecture, in controlling the downstream paper flow, determines whether an immigrant can be a candidate (Spire, 2005).

Starting the process at the prefecture can be a deterrent (Spire, 2005): Applicants for naturalization would have previously visited the prefecture, often with unpleasant results, to obtain and renew residence permits (Mazouz, 2017). As everywhere, foreigners wanting citizenship need to put themselves under the microscope, which is why compiling a dossier of documents that fully establishes their identity and traces their trajectory from birth to the moment of application is an inherent part of the process. As the prefecture systematically requests reports on applicants from the police and security services, worries about a blemish on the record encourage postponement (Mazouz, 2017).

Waiting times are long and documentary requirements are exacting (Hajjat, 2013), with relevant information tightly rationed, leaving applicants uncertain about the information needed. As system attributes, the demanding nature of the requirements and the insistence on compliance simultaneously put the applicant to the "test of time"—indirectly testing the intensity of the applicant's desire for naturalization—and signaling to the bureaucrat—*via* the ease or difficulty entailed in compiling the proper dossier—the degree of the applicant's assimilation (Spire, 2005; Mazouz, 2017). These very same barriers weigh heavily on the low-skilled (Liebig and von Haaren, 2011).

Applicants must further satisfy requirements for cultural and social assimilation. Specified neither by law nor administrative rules, assimilation is subject to ad hoc interpretation. International migration entails the internationalization of families, yet French citizenship law mandates that France be at the center of the prospective citizen's familial attachments. Consequently, agents tend to view applicants with families still in the homeland as ineligible, even if other criteria are fulfilled. As of the TeO survey, bureaucrats were charged with assessing linguistic assimilation yet lacked explicit criteria for determining needed competence levels. Consequently, attributes bearing no relationship to language ability often enter into a sphere where they do not belong, namely, consideration of an applicants' degree of linguistic assimilation (Mazouz, 2017).

Instead of naturalization by decree, foreigners married to French citizens can follow a different track—naturalization by declaration, a procedure that makes naturalization a right. Weil (2002) described naturalization *via* marriage as largely open, although noting that 9 percent of the applications received by the ministry in 2003 were rejected. In reality, this track is encumbered. The extensive documentation required to naturalize by decree applies to naturalization by declaration,

but in amplified form, involving documentation of the French-born partner's nationality, two proofs of marriage, a criminal record summarizing all convictions handed down against the foreign spouse, an attestation of the continuity of marriage (with supporting documents), and a full birth certificate (Neyrand and M'Sili, 1995). Complying with even these basic requirements can prove problematic. Registry systems in developing countries remain incomplete: As of the early 2000s, according to UNICEF, more than a third of births worldwide went unregistered (Szreter and Breckenridge, 2012). As even the baseline requirements signal an underlying suspicion—as indicated by the demand for documents testifying to the continuity of the couple's life together after marriage—"dossiers exclusively containing these required documents are rare. For the most part, they furnish complementary indications on the situation of the foreign spouse. One finds, for example, pay statements for the foreign spouse, work certificates, etc." (Neyrand and M'Sili, 1995: 48). Despite the demand for proof of continuity of marriage, the prefect can undertake a "survey of morality," inquiring not only into the bona fides of the marriage but also examining the degree of integration of the foreign spouse (as indexed by fluency in French) as well as the couple's friendship patterns. Consequently, a significant measure of administrative discretion hovers over naturalizations occurring *via* the marriage track, which is why rather than escaping from the controls applied to naturalization by decree "in practice, it [the marriage track] sees itself submitted to the same criteria ... as naturalization [by decree] (Masure, 2014: 203)."

The process has also become longer and more difficult over time. Up until 1993, a foreigner married to a French citizen could gain French citizenship by visiting the relevant authority (in most cases, the prefecture) and making a statement of intent to naturalize; presuming no objections, citizenship would then be granted after the following year. However, as marriages between foreigners and French citizens have grown increasingly suspect, tightening up on binational marriages became has increasingly been seen as an effective tool of strengthening migration control consequently, that waiting period was lengthened to 4 years, where it currently stands.

Last, for purposes of naturalization, the definition of marriage has deviated from the broader societal pattern. In France, long-term civil unions are increasingly common, recognized by law since 1999 as the legal equivalent of marriage; in 2008, only a few years after the institution of the *pacte civil de solidarité*, 265,404 marriages were concluded as compared to 137,766 civil unions, a gap that has narrowed significantly since. Whereas civil partnerships allow access to residency cards or family reunification (Sohler and Levy, 2009), only formal marriage permits spouses of French citizens to take advantage of the alternative, marriage track toward naturalization.

Family-, Individual-, and Contextual Level Approaches

Family-Level Approaches

Research on familial influences emphasizes the ways in which the micro-level environment affects applicants' motivations, in this respect building on a hypothesis earlier advanced by Yang (1994), who suggested that a greater commitment to life in the country of immigration may arise when both spouses are territorially present, thereby motivating the quest for citizenship. Similarly, Street (2014) hypothesized that for immigrant parents, the decision to naturalize would be heavily affected by the implications for their children. Thus, when the fate of immigrant parents and children was decoupled—with German citizenship attributed at birth to the German-born children of foreign-born parents, regardless of the latter's citizenship status—naturalization among parents declined. Likewise, Soehl et al. (2018) demonstrated the interdependency of parents' and children's naturalization, yet also showed that the strength of that relationship diminishes with time, as evidenced by findings that influences from the parental household subside as children age and move out on their own.

In these studies, the migration of the core family network has been completed, with the crucial members in place in the society of destination. However, co-presence cannot always be presumed, as emigration often comprises a familial survival strategy, involving the short-term relocation of a single family member in order to consolidate income generating opportunities at home. Moreover, migration's selectivity, leading younger persons to depart first, with dependents leaving later, or possibly never at all, ensures that international migration yields internationalized families.

These cross-border connections are likely to affect both migrants' motivations to naturalize and perceptions by officials evaluating applications. Plans for return migration and continuing linkages with homeland kin, most importantly, spouses and children, may fortify homeland loyalties, leading eligible immigrants to select out of naturalization. Those very same ties may lead officials to perceive applicants with extensive transnational connections as unsuitable for citizenship, instead favoring those with strong family ties in France.

Politics also impinge on the relationship between migration and marriage, as marriage is a legal act, regulated by the state. Standard approaches conceptualize reduced social distance between immigrants and the mainstream as eventuating in inter-marriage. In turn, the diminished social distance denoted by marriage to a citizen could simultaneously signal a preference for citizenship and further generate the competencies needed to pursue that goal.

Since, as already noted, marriage can open access to both the territory and to citizenship, marriages between citizens and foreigners have become increasingly suspect. In France, the category of possibly dubious marriages has expanded from marriages fraudulently contracted for the purposes of residence or citizenship ("*marriages blancs*") to marriages in which a foreigner fools a citizen partner into thinking that the marriage is motivated by love ("*marriages gris*"). Consequently, whether the officials reviewing an application perceive a marriage as suspect or genuine may depend on the characteristics and history of spouses and their relationship. Any number of traits—where the couples met, whether in France or abroad; where and when they married, whether before migration or after; the rootedness of the citizen spouse, whether naturalized or born in France; and whether the spouses are similar or different on such key attributes as age or education—may be enough to raise a red flag.

Consequently, family-level influences are likely to take varied form. Marriage to a citizen is likely to deepen the motivation to naturalize; however, fast-tracking naturalization also puts that marriage under the microscope, which is why characteristics of the relationship and of the spouse are likely to impinge on the route to citizenship. The broader set of family ties—to siblings and parents—comes into play as well, affecting decisions by both applicants and officials, with weaker connections to France possibly casting doubt on the marriage and hence reducing the likelihood that applicants will opt for the fast track.

Individual-Level Approaches

Family factors should therefore influence naturalization above and beyond the individual-level characteristics highlighted in prior literature. Neo-assimilation theory (Alba and Nee, 2003) contends that immigrants' needs of survival compel adaptation, yielding skills that bring progress and exposure to "the mainstream." In this view, the process leading to naturalization is one of linear change, with propensities growing as settlement generates resources. By contrast, human capital theory conceptualizes naturalization as an investment (DeVoretz and Irastorza, 2017), keying "citizenship ascension" to naturalization's costs—language learning, fees, and validation of foreign degrees—and its benefits—the "citizenship premium." Research points to the existence of a premium, though disentangling factors selecting for naturalization from those, net of selection effects, influencing naturalization's rewards proves difficult. In France, naturalization has a powerful, positive effect on employment, especially among low-educated persons and women, who are particularly likely to be jobless (Fougère and Safi, 2009). The brevity of the French residency requirement, increasing the return to citizenship, as well as the goal of gaining employment to the large public sector, from which noncitizens are largely barred (Fougère and Safi, 2009) further add to the motivations to naturalize; however, the length, complications, and uncertainty of the naturalization process work in the opposite direction.

In seeking to control migration, states sift newcomers by legal status, which further structures options for naturalization. After the mid-1970s with the end to labor migration, legal entry mainly occurred *via* family reunification. Whereas workers or family members select the destination country as the target of migration, the destination country selects a small fraction of the world's displaced for permanent residence; in choosing refugees or asylum-seekers, states subject them to close vetting, which also signals their deservingness.

Thus, prior research yields conflicting views regarding the channels linking individual characteristics to naturalization outcomes. While exposure should increase knowledge about acquisition, the longer the time spent without citizenship, the lower the pay-off. Likewise, naturalization may do most for the lowest skilled, a motivation possibly offset by difficulties encountered by poorly educated migrants navigating a complex. Less clear are implications for determinants of the naturalization track. As suggested earlier, characteristics at the relationship-, rather than individual-, level are likely to be the more important. Nonetheless, as allaying doubt is likely to ease suspicion, other sources of legitimacy—higher levels of education, entry with authorization, and refugee status—may favor naturalization *via* the faster track.

Contextual-Level Approaches: Country of Emigration Effects[1]

Naturalization involves a strategic decision, weighing the costs and benefits of the citizenship of the country of *emigration* against those of the country of *immigration*. Thus, immigrants from countries where political institutions function poorly should be more likely to naturalize, as the costs of citizenship loss are lower than for those from well-functioning democracies. Similarly, countries differ significantly in the degree to which their passports open doors internationally. The French passport has great utility as a travel document, providing visa-free access to 175 countries, in contrast to 56 for a Senegalese passport and only 47 for an Algerian passport.[2]

These considerations bear on the practical consequences of citizenship acquisition; other home country characteristics affect symbolic dimensions. Naturalization entails a transfer of national loyalties; prior socialization for membership in the home country people may impede that shift, as illustrated by the widespread belief among Latin American immigrants in the United States that the naturalization ceremony entails stomping on the home country flag (Jones-Correa, 1998). The historically fraught relationship between France and its former colonies, and Algeria in particular, may similarly lead the acquisition of French citizenship to be seen as an act of betrayal (Sayad, 1993; Beaud, 2018).

Beyond specific dyadic histories, a more general home country trait—the strength of national identity—can influence naturalization propensities. According to an analysis of the MGIS, "the more the national tie is perceived a strong affective tie, the more the change in nationality is a difficult decision to take and the fewer are those who take the step" (Tribalat, 1996, 168). Yet for immigrants from multi-ethnic states in sub-Saharan or central Africa where a strong national identity has not congealed, loyalty to the country left behind may be largely irrelevant.

Policies allowing dual citizenship can mitigate the loyalty problem, releasing immigrants to accept a second citizenship (Mazzolari, 2009). Since France accepts dual citizenship, sending country variation in dual citizenship policies are likely to matter, leading immigrants from countries that permit dual citizenship to be more likely to acquire receiving country citizenship than those that do not.

Overall, a disadvantaged context of origin should yield both material and symbolic advantages to naturalization, and hence motivate immigrants to acquire a new citizenship. Yet for precisely these reasons, background in a more disadvantaged

[1]The literature also draws attention to the relevance of country of immigration effects. In separate analysis, available upon request, we ran analyses including two such measures: one measuring support for the extreme right-wing party, Front Natonal, at the regional level, hypothesizing that naturalization probabilities will be lower where the party enjoys a high level of support; and a second measuring average educational achievement by national origin, hypothesizing that higher group-level resources will be associated with higher naturalization probabilities. As neither variable yields effects on naturalization by marriage nor affects other independent variables of interest, we dropped this discussion for reasons of concision.

[2]Data drawn from the passport index https://www.passportindex.org [accessed August 21, 2017].

context of origin might cast doubt on the legitimacy of efforts to pursue naturalization along the faster track.

DATA AND METHODS

Data come from the Trajectories and Origins (TeO) survey produced by INED/INSEE in 2008–2009 on a sample of over 21,000 respondents aged 18–60 years living in metropolitan France (Beauchemin et al., 2018). TeO overrepresents minority populations to ensure adequate-sized national origin subgroups.[3] The survey includes detailed information on migratory trajectories, citizenship, and the type and timing of naturalization. Variables on respondents' parents, spouses, and children shed further light on the family context.

We further enrich the TeO survey by matching respondents with information on their country of origin compiled from a variety of sources. This allows us to disentangle individual and family-level variables from country-level factors that influence the propensity to naturalize.

Sample

Our analysis focuses on the immigrant population only who are either foreign or naturalized at the time of the survey.[4] In France, immigrants are defined as foreign-born respondents without French citizenship at birth. There are 8,253 immigrants in TeO. As migrants only become eligible for naturalization after 5 years of residency, we exclude those who arrived in the 5 years prior to the survey date (N = 708, or 9% of all immigrants). To enable matching with country of origin characteristics, the sample is further restricted to migrants whose country of birth is reported in detail. This results in a sample of 6,411 migrants with 51 different national origins.[5]

Modeling Strategy

There are two pathways to French citizenship[6]: acquisition through declaration and acquisition by decree. Naturalization through declaration is reserved for the spouses of French citizens. For clarity, we refer to this naturalization route as "naturalization through marriage." Naturalization by decree is the more common track open to eligible foreigners. Out of the total 6,411 migrants in our sample, 35% naturalized by decree and 7% became French citizens by marriage (**Table 1**). The median time to naturalization was 11 years after arriving in France, but those who gained citizenship through marriage naturalized faster than those who naturalized by decree.

TABLE 1 | Naturalization rates and timing.

	N	Weighted %
Naturalized by decree	2,373	35
Naturalized through marriage	461	7
Foreign	3,577	58
Total	6,411	100
—	Years from arrival	
Median time to citizenship	11	
Via decree	13	
Via marriage	7	

Due to the two-track naturalization system, our analysis employs a logistic discrete-time hazard model for multiple absorbing events. This estimation strategy is appropriate for event history analysis with two or more modes of failure, namely, naturalization by decree or naturalization by marriage[7] (Rabe-Hesketh and Skrondal, 2008). We fit the model using a multinomial design into order to determine whether the independent variables shape the risk of naturalizing in different ways according to the track, with three possible outcomes: never naturalized, naturalized by decree, and naturalized through marriage. While the latter is only open to migrants with French spouses, all respondents are at risk of marrying over the period and then naturalizing by this route.[8] Data were restructured into a person/year format, with each respondent having one observation for every year during which she is at risk of acquiring citizenship (N = 111,597). The observations begin the year respondents migrated and end once one of the naturalization events (or censoring) has occurred.

We built Model 1 including all individual, family, and contextual variables, selecting covariates measured prior to the naturalization event, or when the data allow, which vary over time. **Table 2** provides summary statistics on all independent variables, described below. We interpret the model results as marginal effects of naturalizing in a given year by each track, holding all other values constant using Stata's *margins* command. Due to repeated individual observations, the model is estimated

[3]All descriptive analyses apply appropriate sampling weights.

[4]While some second-generation immigrants born in France without French citizenship are also at risk of naturalizing, we exclude these respondents from our analysis as their citizenship acquisition is governed by a specific jus solis procedure.

[5]TeO provides precise national origins for most groups. However, when sample sizes are small, certain origins are aggregated into larger categories (i.e. other Asia) and detailed country of origin is not provided; these respondents are excluded from the analysis. We included migrants from the following countries: Algeria, Morocco, Tunisia, Senegal, Mauritania, Gambia, Guinea-Bissau, Guinea, Mali, Burkina Faso, Niger, Chad, Cote d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon, Central African Republic, Gabon, Congo (Brazzaville), Democratic Republic of Congo, Equatorial Guinea, Vietnam, Cambodia, Laos, Turkey, Portugal, Spain, Italy, Greece, Austria, Germany, Luxembourg, Denmark, Sweden, Finland, United Kingdom, Ireland, Belgium, the Netherlands, Bulgaria, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Czech Republic, Romania, Slovenia, and Slovakia.

[6]Excluding cases of jus sanguinis, for people with French filiation.

[7]We opt for logistic discrete time models over Cox proportional hazard models because we lack a fine-grained measure of the date of naturalization, only the year in which it occurred. Logistic discrete time models are also preferable when the data have many ties, i.e. many individuals are experiencing the event at the same time (Allison, 1982).

[8]Because naturalization by marriage concerns a selected population, we ran two additional models: a model restricting the sample to respondents who are or were ever married, and a Heckman probit model where the selection equation predicts whether respondents are or were ever married. Findings and details on these models are presented in **Table A2** in the Appendix. The main findings relating to the origin of the spouse are robust to these specifications.

TABLE 2 | Summary statistics of covariates.

Individual-level variables		**Mean**
Generation	G1	0.57
	G1.25	0.13
	G1.5	0.14
	G1.75	0.17
Language ability	Spoke French during childhood (dummy)	0.31
Education	No education	0.27
	Primary school	0.09
	Middle school	0.10
	Vocational degree	0.17
	Professional bac	0.06
	General bac	0.08
	2-Year university degree	0.07
	Higher education	0.16
Employment status	Period(s) of unemployment since arrival (dummy)	0.22
Type of residency card	Asylum	0.06
	Student	0.10
	Worker	0.21
	Family reunification	0.36
	Exemption	0.08
	Other/unknown	0.19
Issuance of residency card	Card issued after arrival (dummy)	0.17
Migration trajectories	Migration to France before arrival (dummy)	0.18
	Migration abroad after arrival (dummy)	0.07
Demographics	Age	42.07
	Female (dummy)	0.51
Family-level variables		
Parental religion	Father or mother religious	0.93
Parents' education	No education	0.66
	Primary/middle school	0.18
	Bac	0.05
	University degree	0.11
Children	Number of children born in France	1.68
	Number of children born abroad	0.40
Parents' location	Not in France/unknown	0.57
	At least one parent arrived before R	0.30
	At least one parent arrived with or after R	0.13
Spousal characteristics	*Origin*	
	No partner	0.36
	Spouse is a French native with French native parents	0.15
	Spouse is French native with immigrant parent(s)	0.07
	Spouse is a naturalized French citizen	0.13
	Spouse is foreign-born	0.29
	More than 7 years age difference between spouses	0.20
	Premigration marriage outside of France	0.19
Contextual-level variables		
Country of origin	Polity score	0.37
	Citizenship loss in origin country (dummy)	0.39
	Former colony (dummy)	0.55
	Passport power	0.44
	Ethnic fractionalization	0.34

using clustered standard errors at the individual level. We further replicated this model on a sample excluding European migrants (Model 2). Given free movement and residence within the European Union since 1992, Europeans may have a lower incentive to naturalize. We therefore ensure that our findings are not driven by this category of migrants.

Next, we aimed to assess the relative influence of individual, family, and contextual variables on the likelihood of naturalizing by both tracks. We calculated predicted probabilities of naturalizing over time for migrants with "advantaged" vs. "disadvantaged" individual, family, and contextual characteristics. We define advantage and disadvantage empirically, based on the variables identified in Model 1 as favoring or impeding the likelihood of naturalization. Individual-level advantage is a migrant belonging to the G1.75 generation with the highest

level of education. Individual-level disadvantage is a G1 migrant with no education. Family-level advantage refers to migrants with parents having the highest level of education, children and parents located in France, a spouse born in France to French-born parents (in the case of the marriage track), or a naturalized French spouse (in the case of the decree track). Disadvantage on family characteristics refers to migrants with parents lacking any education, children and parents not located in France, and having no spouse or a foreign spouse. We applied the same procedure to contextual characteristics to obtain predicted probabilities of naturalizing between migrants from advantaged contexts (strong polity, dual citizenship laws, strong passport power, not a former colony, and low ethnic fractionalization) and disadvantaged contexts (weak polity, no dual citizenship laws, low passport power, former colony, and high ethnic fractionalization).[9] All other values were held constant.

Finally, we identified whether certain individual or contextual characteristics interact with the origin of the spouse in important ways for naturalization pathways, introducing interactions into the main model, described below.

Family-Level Variables

Origin of the Spouse

Using the year of marriage and details on the origin of the spouse, we constructed a categorical measure of marital status. This measurement varies over time during the period at risk, so that we can chronologically ascertain the relationship between marriage and naturalization. About 70% of migrants in the sample are married, most of whom have an immigrant spouse, either naturalized (13%) or foreign (29%). 15% are married to French natives and 7% are married to French-born, second-generation immigrants. In the models, we group the "no spouse" and "foreign spouse" categories together.

Location and Timing of Marriage

For married respondents, we distinguished between migrants based on the location and timing of the marriage with a dummy variable: 1 for migrants married outside of France prior to migration and 0 otherwise.

Age Difference Between Spouses

We used a dummy capturing age differences between spouses, coded 1 if the spouses have a more than 7 years age difference and 0 otherwise.

Children

We identified whether respondents' children were born in France or abroad. These variables are time-varying based on the year of birth, indicating the cumulative number of children born in France or abroad during the time at risk. On average, the sample shows more children born in France than abroad.

[9]We set the contextual characteristics at the minimum and maximum values; results also replicate when we use the 25th and 75th percentile values.

Parental Characteristics

TeO includes information on whether respondents' parents have migrated to France and, if so, the time of their migration. We distinguished among parent(s) arriving before the migrant (30%); parent(s) arriving with or after the migrant (13%); and parent(s) not living in France at the end of the period at risk or whose place of residence is unknown (57%). We also included the educational level of respondents' parents. As shown in **Table 2**, about two-thirds of respondents have parents with no education. Finally, we controlled for a dummy indicating whether either the mother or the father was religious.[10]

Individual-Level Variables

Immigrant Generation

We constructed a 4-level immigrant generation variable based on age at migration. The G1 generation refers to migrants who arrived after the age of 17 years, G1.25 to those who arrived between the ages of 12 and 17 years, G1.5 to those who migrated between 6 and 11 years, and G1.75 generation to those who arrived as young children before 6 years of age.[11] The large majority of the sample are G1 immigrants.

Language

A dummy indicates whether respondents spoke French during childhood (about one-third of the sample).

Education and Employment

We used an 8-level categorical measure of respondent's education and the year of completed education. This measure varies over time during the period at risk. Levels of education are relatively low: Two-thirds did not obtain a high school diploma. A dummy indicates whether the respondent was ever unemployed during the time to naturalization (22% of the sample were at some point unemployed).

Legal status upon arrival is measured using information about the type of residency card and its date of acquisition. A categorical variable distinguishes among 6 statuses: refugees, students, workers, family reunification/French spouse, waiver, or other/unknown. A dummy indicates whether the first residency card was obtained after the year of migration, which would delay eligibility for citizenship. Most migrants arrived *via* family reunification (36%) or as workers (21%); 17% received a residency card late, that is, after their first year in France.

Migratory Trajectories

Two dummies capture migratory trajectories: *Migration before arrival* indicates a stay in France prior to arrival; *migration after*

[10]The available data only contain parental religiosity but do not report parental religion.

[11]Some migrants who arrived in France as children may have naturalized before the age of 18 years, specifically if one of their parent(s) naturalized. To ensure that our results are not sensitive to these early naturalizations, we ran models excluding these respondents. 6% of the sample naturalized as minors ($N = 418$). Results do not change substantially when these respondents are dropped, with the exception that the effects of generation and parental education on naturalization by decree become insignificant.

arrival indicates whether respondents had spent at least 1 year outside of France after arrival. 18% of the sample had been in France prior to immigration; 7% had lived in another country after immigrating.

Demographics

All models further control for gender, year, and year-squared.[12] Given that we control for age at migration and that the clock starts upon arrival, the year variables can be interpreted as an effect of age on naturalization propensities.

Contextual-Level Variables

Naturalization decisions are also influenced by the rights migrants stand to gain or lose by acquiring a new citizenship, a decision-making process which likely varies by country of origin. TeO reports the specific country of origin of migrants as well as their year of migration. This allows us to merge the TeO survey with additional data sources to retrieve contextual indicators relative to the country of origin at the time of migration to France.

Polity Score

We assigned each TeO respondent a polity score based on the relative strength of democracy in their country of origin. This variable comes from the Polity IV Project (Marshall and Jaggers, 2002) which ranks countries over time, allowing us to match respondents based on their country of origin and time of migration. The scale ranges from −10 (weak) to 10 (strong). We rescaled the variable from 0 to 1.

Ethnic Fractionalization

This variable comes from the Quality of Government Basic dataset (Dahlberg et al., 2021) and measures the strength of national cohesion in the country of origin. These data are also available over time, allowing us to match the information to TeO at the time of migration. Specifically, it measures the probability that two randomly selected individuals are not from the same ethnic group. Respondents tend to come from countries with somewhat weak polities on average (mean = 0.37) and moderate ethnic fractionalization (mean = 0.34).

Passport Power

Henley and Partners 2018 Passport Index ranks the visa-free travel freedoms provided by all countries, ranging from 1 (weak) to 91 (strong). We reversed the original scale so that higher values indicate greater passport power. As these data are current measurements and are not available over time, this measurement does not vary according to the time of migration. However, it is unlikely that countries' passport power have changed substantially over time. We rescaled the variable from 0 to 1. The sample mean is 0.44, indicating moderate passport power in migrants' countries of origin.

Citizenship Loss

We matched the TeO survey with the MACMIDE Global Expatriate Dual Citizenship Dataset (Vink et al., 2015) documenting dual citizenship policies for 200 countries since 1960. We created a dummy indicating whether the naturalization of a TeO respondent would have resulted in citizenship loss based on their country of origin. This variable was measured at the time of arrival in France. 39% of the sample were at risk of losing citizenship upon naturalizing in France.

Origins in Former Colonies

We recoded the country of origin variable reported in TeO into a dummy to indicate whether migrants emanate from a former French colony. This is true of about half of all respondents.

RESULTS

Table 3 shows naturalization rates according to individual, family, and contextual variables. Family characteristics are decisive to acquiring citizenship. Marriage is tightly intertwined with naturalization: As of the survey, only about one-third of unpartnered migrants possessed French citizenship.[13] The origin and citizenship status of the respondent's spouse produce the greatest variation in naturalization rates. 79 percent of respondents married to a naturalized French citizen are also naturalized, although most had obtained French citizenship by decree, not through marriage. While naturalization rates were lower among persons married to French-born children of French-born parents, naturalization *via* marriage was particularly common. By contrast, only 15 percent of respondents married to noncitizen, foreign-born persons had acquired French nationality.

The location of parents and children in France also matter to the likelihood of naturalizing. 65% of respondents whose parents migrated at the same time or after the respondent naturalized compared to 33% whose parents are not in France. Having at least one child born in France is associated with higher naturalization rates, while having children abroad is linked with lower chances of naturalizing.

Naturalization also varies greatly by individual characteristics, particularly age at arrival, education, and legal status. 63 percent of G1.75 and 57 percent of G1.5 respondents were naturalized (mainly *via* decree) as opposed to only 31 percent of those respondents who had arrived in France as adults. Respondents with the highest level of education were more likely to have gained citizenship than respondents who never went beyond primary school (49 percent vs. 32 percent), although higher levels of citizenship were actually obtained by persons with a 2 year university degree (55 percent). Status upon entry was a source of differences of comparable size, as 57 percent of persons

[12]We also ran the model controlling for dummies for each year. Results are robust to this specification.

[13]**Table 3** shows that a small percentage of unpartnered migrants naturalized by marriage. These respondents are predominately ex-spouses of French citizens. As we do not have the date of divorce/separation, we cannot chronologically order this event with respect to naturalization. However, given the small number of respondents concerned, it is unlikely that this substantially influences the findings.

TABLE 3 | Naturalization rates by individual and contextual characteristics.

	% Not naturalized	% Naturalization by decree	% Naturalized via marriage
Individual-level variables			
Generation			
G1 migrated after 17 years	69	23	8
G1.25 migrated at 12–17 years	54	40	6
G1.5 migrated at 6–11 years	43	51	6
G1.75 migrated at 0–5 years	37	59	4
R's language during childhood			
Foreign	62	31	7
French	50	43	7
R's education			
No education	65	29	6
Primary schooling	68	27	5
Middle school	60	34	6
Vocational degree	51	42	7
Bac pro	47	46	7
Bac general	58	35	7
2-Year university degree	45	46	9
Higher education	51	39	10
R experienced unemployment after arrival			
No	59	34	7
Yes	53	39	8
Residency card			
Asylum	43	51	6
Student	52	36	12
Worker	73	23	4
Family reunion or married French citizen	59	32	9
Waiver	60	34	6
Other/missing	46	48	5
Residency card issued after arrival			
No	57	36	7
Yes	62	31	8
Migration prior to arrival			
No	56	38	7
Yes	68	22	9
Migration after arrival			
No	57	36	7
Yes	68	25	7
Gender			
Male	59	35	5
Female	57	35	9
Family-level variables			
R's parents' education			
No education	59	35	6
Primary/middle	54	38	8
Bac	57	34	9
University	59	32	9
Number of children born in France			
None	65	31	4
1, 2	56	35	9
3 or more	53	39	8
Number of children born abroad			
None	55	38	7
1, 2	69	23	8
3 or more	81	17	2
R's parents' location			
Unknown/not in France	67	25	8
At least one parent arrived before R	51	43	5
At least one parent arrived with or after R	35	57	8
Origin of spouse			
No partner	61	36	3
Spouse is French native with French parents	37	39	23

(Continued on following page)

TABLE 3 | (*Continued*) Naturalization rates by individual and contextual characteristics.

	% Not naturalized	% Naturalization by decree	% Naturalized via marriage
Spouse is French native with immigrant parent(s)	44	35	21
Spouse is naturalized French	21	73	6
Spouse is foreign-born	85	15	<1
Age difference between spouses			
Yes	57	33	10
No	58	35	6
Premigration marriage			
Yes	72	22	6
No	55	38	7
Contextual-level variables			
Citizenship loss			
No	57	36	7
Yes	59	33	8
Former colony			
No	65	28	7
Yes	52	41	7
Polity score			
<25th	49	45	6
25th–50th	45	44	10
>50th	70	24	7
Passport power			
<25th	52	41	7
25th–50th	52	40	8
>50th	64	29	7
Ethnic fractionalization			
<25th	66	27	7
25th–50th	55	39	6
>50th	54	39	8

Table shows row percentages.

admitted as asylum-seekers but only 27 percent of those who entered as workers had obtained citizenship as of the survey.

Contextual indicators are not as salient to naturalization patterns relative to family- and individual-level variables. The polity scale captured the widest differences: French citizenship had been obtained by only 30 percent of respondents originating in those states at or above the 50th percentile, as opposed to 54 percent among respondents from states at the 25th – 50th percentile and 51 percent among respondents from states at the 25th percentile or lower.

We ran a logistic discrete-time model with competing risks to test these individual, family, and contextual factors net of other factors. Results in **Table A1** in the Appendix show the marginal effects of naturalizing in a given year by each track, separately for the full sample of migrants (Model 1) as well as for non-EU migrants (Model 2). To facilitate interpretation of the findings, we report the effects of individual, family, and contextual variables separately in **Figures 1**–**3**.

The results again highlight the importance of family characteristics (**Figure 1**), yet in contrasting ways according to the type of naturalization. Prior marriage to a French citizen promotes naturalization; this variable exerts the largest effect compared to all other covariates. However, the origin of the spouse plays out differently for naturalization by decree and naturalization by marriage. The probability of naturalizing by decree is highest for those with naturalized French spouses, whereas those married to natives (i.e., France-born spouses, born to France-born parents) are more likely to opt for the naturalization by marriage route. Marriages that occurred prior to migration outside of France negatively influence the likelihood of naturalizing by both tracks. A large age difference between the spouses does not, however, seem to matter. The location and education of parents also proves to be a significant predictor of naturalization. Migrants whose parents live abroad are less likely to naturalize than those with parents settled in France. Higher parental education also positively influences becoming French, although this variable only exercises influence on naturalization by decree.

Individual-level characteristics also have potent effects on naturalization but contribute more heavily to the naturalization by decree track (**Figure 2**). Very few individual variables matter to naturalization by marriage. Higher education accelerates access to French citizenship *via* both routes, although impacts are greater on naturalization by decree than by marriage. Immigrant generation matters to naturalization by decree, but is not decisive to naturalization *via* marriage net of other factors. Gender does not yield significant effects on naturalization by decree, yet women prove more likely to naturalize *via* marriage than men. Legal status upon arrival is also decisive for naturalization by decree, but neither legal status nor the timing of the first residency card affects citizenship through marriage.

Last, contextual variables play a minor role. Disadvantaged country of origin characteristics typically result in higher naturalization, but only the polity score–with those from more

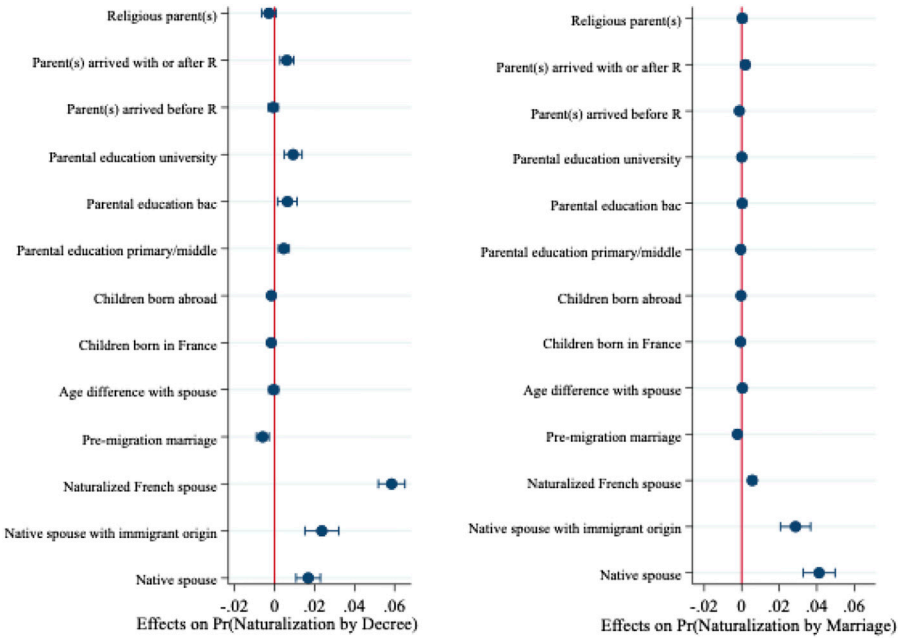

FIGURE 1 | Marginal effects of family variables on naturalization from Model 1. Note: Reference categories for categorical covariates are as follows: origin of spouse (ref: no partner or foreign spouse); parental education (ref: no education); location of parents (ref: parent(s) not in France or unknown).

democratic polities less likely to obtain citizenship–yields any impact on naturalization by marriage.[14]

The majority of these findings are robust to the exclusion of Europeans (Model 2, **Table A1**). What's more, the family and individual correlates of naturalization tend to be slightly stronger for non-European origins. Still, there are some notable differences with respect to Model 1. Immigrant generation is significantly related to naturalization by marriage for the non-European sample. Compared to migrants who arrived as adults (G1), migrants who arrived in childhood (G1.75 and G1.5) are less likely to opt for the marriage track. Non-European migrants who entered with a family reunification visa are also more likely to naturalize by marriage, suggesting that non-European migrants may more often draw on a pre-migration marriage with a French citizen to gain legal entry. Finally, not all contextual variables matter in the same way: The polity score loses significance among the non-European sample, whereas originating from a former French colony positively impacts naturalization *via* both routes.

To test the relative weight of individual, family, and contextual variables, **Figures 4,5** plot the predicted probabilities of naturalizing by decree and by marriage, respectively, based on disadvantaged and advantaged sets of characteristics. As **Figure 4** shows, the probability of naturalization by decree is low in the early years following migration and then increases over time. Individual factors are powerful: After 26 years of residence in France, a 10 percentage point gap in the probability of naturalizing separates individuals with advantaged vs. disadvantaged characteristics. Yet, family advantage is an even more potent predictor, increasing the likelihood of obtaining citizenship by about 20 percentage points over 26 years. On the other hand, context plays a very small role, with minor differences between disadvantaged and advantaged contexts, and a contrasting pattern of impact: Migrants from disadvantaged contexts naturalize at higher rates than those from advantaged contexts.

As **Figure 5** demonstrates, the likelihood of acquiring citizenship *via* marriage follows a different trend. Probabilities of naturalizing soon after migration are high and then decline as years in France increase, likely due to the fact that some migrants come to France with the intention to marry and naturalize quickly. In this naturalization procedure, family advantage again outweighs all other factors. While differences between individual and contextual variables are negligible, migrants with advantageous family characteristics have a 5 percentage point greater likelihood of naturalizing at the beginning of the period than migrants with disadvantaged family characteristics.

Finally, we aimed to assess whether the benefit of having a French spouse plays out similarly for men and women and

[14]We also estimated a model using clustered standard errors at the country of origin level. This did not alter the estimates of the individual and family-level variables. Some of the contextual variables lose significance. Disadvantaged country-of-origin characteristics are not significantly correlated to naturalization by degree. However, we still find a negative significant effect of the polity score on naturalization by marriage. We do not include this model for sake of concision, but the results are available upon request.

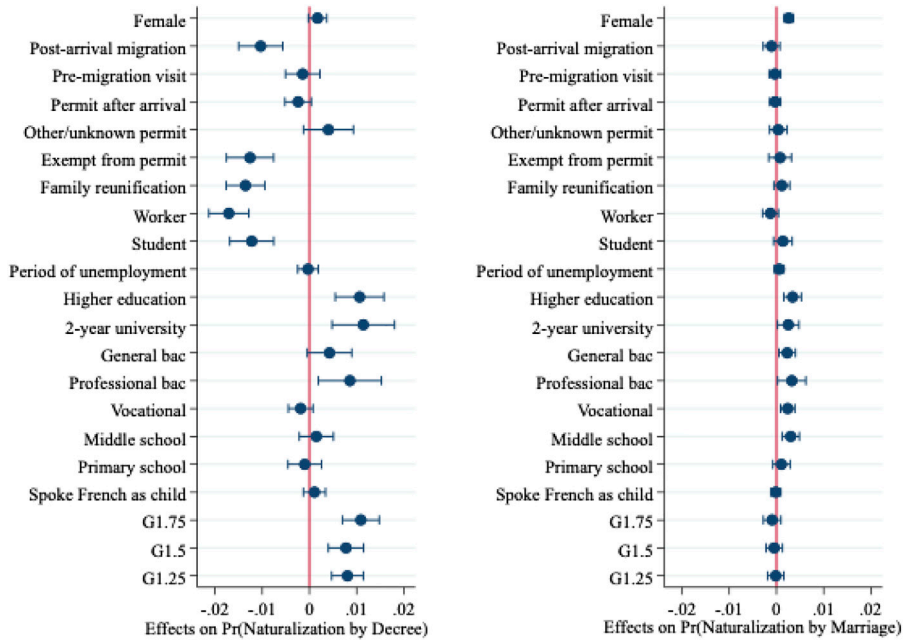

FIGURE 2 | Marginal effects of individual variables on naturalization from Model 1. Note: Reference categories for categorical covariates are as follows: generation (ref: G1); education (ref: no education); residence permit (ref: asylum).

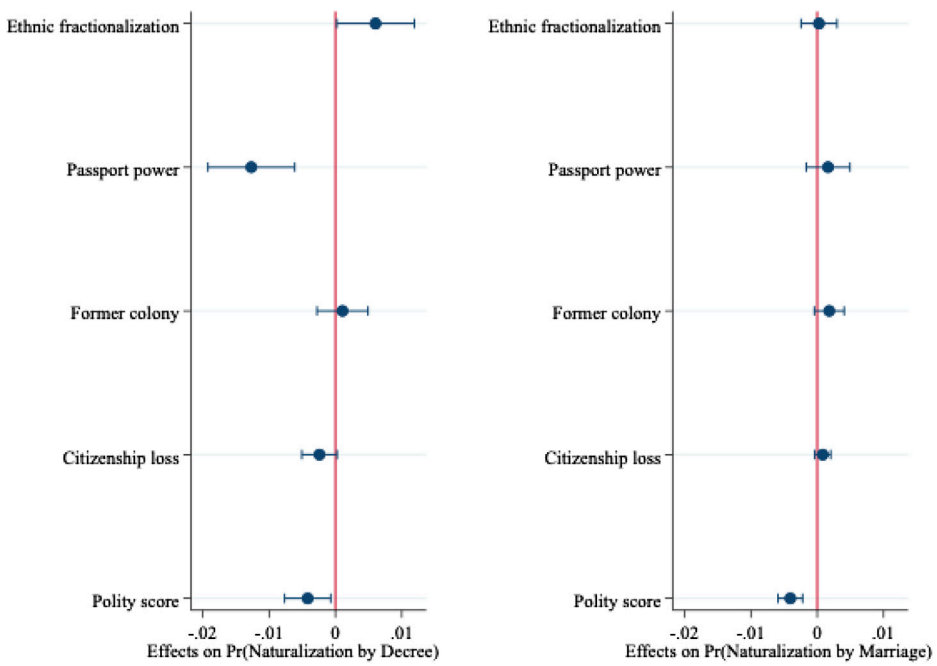

FIGURE 3 | Marginal effects of contextual variables on naturalization from Model 1.

across country of origin characteristics. Some groups may be more susceptible to administrative scrutiny during the naturalization process, particularly when naturalizing by marriage. We introduced two sets of interactions into the model: 1) between gender and spousal origin and 2) between migrant origin in a former colonial country and spousal origin.

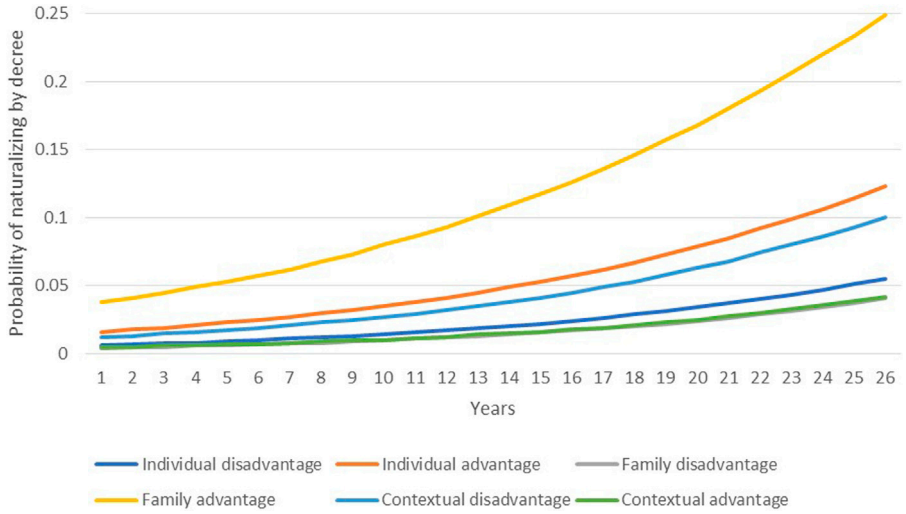

FIGURE 4 | Predicted probabilities of naturalizing by decree according to changes in individual, family, and contextual variables.

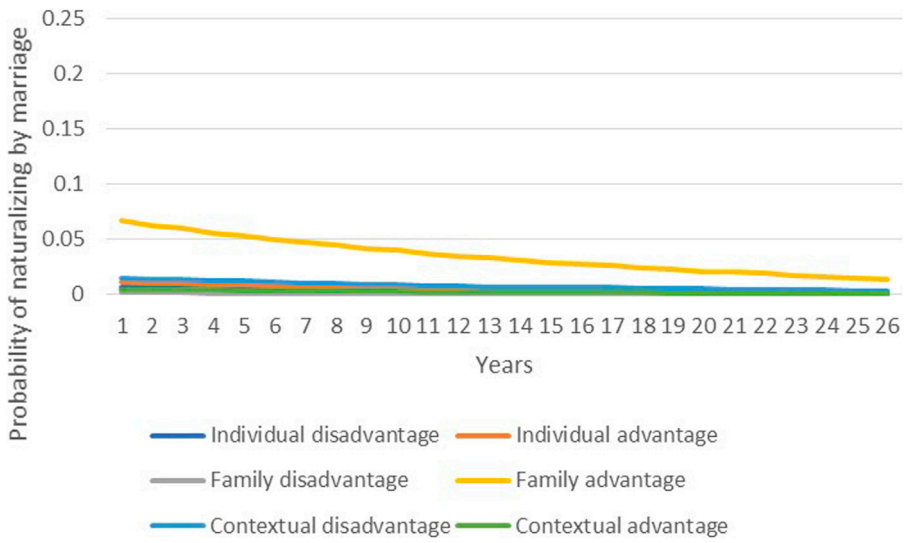

FIGURE 5 | Predicted probabilities of naturalizing by marriage according to changes in individual, family, and contextual variables.

Figure 6 presents the gender and spousal origin interaction.[15] Results suggest that women who are married to French native citizens with French parents appear to take the naturalization *via* marriage track to a greater degree than men. The interaction between former colonial country and spousal origin, however, did not produce significant results and is not shown here.

DISCUSSION AND CONCLUSION

As Brubaker (1992) famously demonstrated, citizenship entails social closure. As an object of closure, citizenship is surrounded by obstacles that make its attainment elusive, even for resident non-foreigners who might enact and experience everyday citizenship. As an instrument of closure, citizenship generates inequalities between citizens and foreigners residing on the citizens' territory. As a bias toward the familial ties of citizens characterizes both migration and naturalization policies, citizens' own decisions to marry foreigners undermine states' capacity to close off both territory and membership. Yet precisely because

[15]Model results including interactions are available upon request.

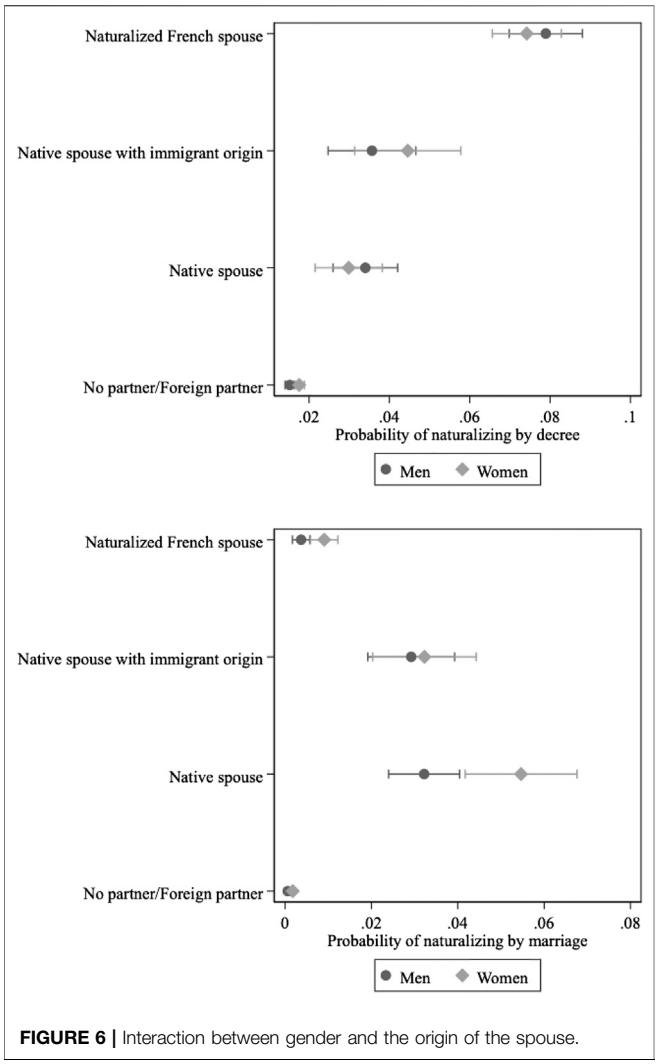

FIGURE 6 | Interaction between gender and the origin of the spouse.

they represent the weak link in migration, the intimate ties between citizens and foreigners as institutionalized through marriage have increasingly become the focus of suspicion.

This study, drawing on the French *Trajectories and Origins Survey*, a rich, large-sample data set, has sought to build on earlier research demonstrating how family factors influence citizenship attainment. In doing so, we have also gone beyond that research, leveraging a distinctive trait of French naturalization policy to illuminate the factors allowing eligible immigrants to take advantage of fast-track procedures that facilitate naturalization for the spouses of citizens. To the best of our knowledge, this is the quantitative first empirical study to address this question.

Confirming prior scholarship, the study has shown that for the standard naturalization track—naturalization by decree—differences in citizenship take-up rates are strongly keyed to individual-level resources (Yang, 1994; Carrillo, 2015). Immigrants whose exposure to France started in childhood are more likely to naturalize than those who arrived later in life. Naturalization propensities rise with levels of education, although the main effects are felt at the high end of the spectrum, reflecting the stringencies of the process. Possessing a residency card at the moment of entry hastens passage toward citizenship; admission as a refugee or asylum-seeker is a still stronger accelerant. Migrant trajectories are also linked to naturalization decisions, with persons who remigrated after first arriving in France less likely to become citizens. While our analysis excludes by design persons who have permanently remigrated and cannot be observed, this finding indicates that migrants who stay in the sample are positively selected. By contrast, results for the standard track provide limited reinforcement for the importance of context. Country-of-origin effects on the standard track are keyed to disadvantage: Immigrants from countries that are less democratic and have passports that open fewer doors are more likely to naturalize, although these influences have very modest effects.

While these results largely confirm prior research, the study's emphasis on the importance of family-level characteristics and, especially, its attention to the relevance of institutional factors yields new insight. Family-level traits prove even more powerful, in their effects on standard naturalization (naturalization by decree), than the individual-level characteristics to which previous scholarship has attended. By contrast, family-level influence almost entirely drives naturalization by marriage.

More importantly, we demonstrated that marriage to French citizens is the single most powerful factor, yielding effects on naturalization in both tracks. While couple formation is a social process, marriage entails a relationship to the state, which is why the very definition of marriage and its uses for the purposes of regulating immigration are instances of social closure. Like many other states of immigration, France grants the spouses of citizens greater access to citizenship, a pattern of exceptional treatment that has paradoxically made those marriages all the more suspect. The fact that only marriage allows potential citizens to access the marriage track at a time when other forms of nonmarital union are both increasingly common *and* state-sanctioned testifies to the social closure that surrounds citizenship and the distinctively political impediments to formal membership in the people.

Most of the married immigrant respondents were married to French citizens; nonetheless, usage of the marriage track proves uneven among those married to French citizens prior to naturalization. Most eligible persons forgo this route; the citizen spouse's parentage proves to be the decisive factor in determining which option to choose. By contrast, a core assimilation variable such as generation bears no relationship to usage of the marriage track and education is barely influential with impacts only at the very highest end.

Here, we see the combination of the political and the social, reflecting the linkage between the status and identity dimensions of citizenship. Legally, naturalization by marriage is a right possessed by all immigrants with a citizen spouse; some immigrants do indeed exercise that right, but only if they have the right type of spouse, as indicated by the weak, almost negligible effects associated with individual and contextual factors. As persons choosing the marriage track have to comply with the extensive requirements needed to demonstrate the "truth" of their marriage, it is not surprising

that the marriage option is far more likely to be selected by immigrants married to French citizens of French ancestry, as opposed to their counterparts with a naturalized citizen spouse, whose immediate foreign origin may be a source of suspicion. Likewise, our finding that women are more likely to use the marriage track than men suggests that the same shadow that makes the migration of foreign men married to citizens suspect—as well documented in the literature—extends to the naturalization sphere as well—which has not been previously shown.

In the end, naturalization is linked to states' monopolization of the means of admissions, a process which includes their monopoly over the means of mobility, as Torpey (2018) has emphasized, but extends to their monopoly of what Walzer (1983) called "second admissions," namely, naturalization. Controls at the first level discourage many would-be immigrants, but not quite as many as rich democracies like France would like, which is why leakage across the frontier always occurs. But errors or oversights at the first level can be corrected at the second level, as the techniques that suffice for entering the territory have no traction on naturalization, a sphere that is the province of the state alone. As foreigners' entry into citizenship gives them a permanent place in the national landscape while also entailing easier first admissions for their relatives still living at home, the inherent connection between immigration and naturalization leads citizenship to be an increasingly elusive prize.

DATA AVAILABILITY STATEMENT

Publicly available datasets were analyzed in this study. The data can be found here: http://quetelet.progedo.fr/donnees-francaises.

AUTHOR CONTRIBUTIONS

Both authors contributed to the conception of the study; conducted statistical analysis; wrote sections of the manuscript; and revised, read, and approved the submitted version.

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Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

APPENDIX

TABLE A1 | Marginal Effects of Naturalizing by Both Tracks (Models 1 and 2)

	Model 1		Model 2	
	Full sample		*Excluding European nationals*	
	Naturalization by decree	**Naturalization by marriage**	**Naturalization by decree**	**Naturalization by marriage**
Individual-level variables				
Year	0.002***	−0.000***	0.003***	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Year squared	−0.000***	0.000	−0.000***	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
Generation/Ref: G1				
G1.25	0.008***	−0.000	0.011***	−0.001
	(0.002)	(0.001)	(0.003)	(0.001)
G1.5	0.008***	−0.000	0.008**	−0.002*
	(0.002)	(0.001)	(0.003)	(0.001)
G1.75	0.011***	−0.001	0.012***	−0.004***
	(0.002)	(0.001)	(0.003)	(0.001)
R spoke French during childhood	0.001	−0.000	−0.000	−0.001
	(0.001)	(0.001)	(0.002)	(0.001)
R's education/Ref: No education				
Primary	−0.001	0.001	−0.003	-0.001
	(0.002)	(0.001)	(0.003)	(0.001)
Middle	0.001	0.003**	0.002	0.003**
	(0.002)	(0.001)	(0.003)	(0.001)
Vocational	−0.002	0.002**	−0.003†	0.002†
	(0.001)	(0.001)	(0.002)	(0.001)
Professional bac	0.009*	0.003*	0.012*	0.004†
	(0.003)	(0.002)	(0.005)	(0.002)
General bac	0.004†	0.002*	0.006†	0.003**
	(0.002)	(0.001)	(0.003)	(0.001)
2-Year university degree	0.011***	0.003*	0.015**	0.005**
	(0.003)	(0.001)	(0.005)	(0.002)
Higher education	0.010***	0.003***	0.017***	0.005***
	(0.003)	(0.001)	(0.004)	(0.001)
R experienced unemployment after arrival	-0.000	0.001	-0.000	0.001
	(0.001)	(0.001)	(0.002)	(0.001)
Residency card on arrival/Ref: Refugee				
Student	−0.012***	0.001	−0.017***	0.001
	(0.002)	(0.001)	(0.003)	(0.001)
Worker	-0.017***	-0.001	-0.021***	-0.001
	(0.002)	(0.001)	(0.003)	(0.001)
Family reunification	−0.014***	0.001	−0.017***	0.003**
	(0.002)	(0.001)	(0.003)	(0.001)
Exemption	−0.013***	0.001	−0.017***	0.002
	(0.003)	(0.001)	(0.004)	(0.002)
Other/unknown	0.004	0.000	0.004	0.001
	(0.003)	(0.001)	(0.004)	(0.001)
Residency card issued after first year of arrival	−0.002†	−0.000	−0.004*	0.000
	(0.001)	(0.001)	(0.002)	(0.001)
Migration before arrival	−0.001	−0.000	0.002	0.002*
	(0.002)	(0.001)	(0.003)	(0.001)
Migration after arrival	−0.010***	−0.001	−0.012**	−0.000
	(0.002)	(0.001)	(0.004)	(0.001)
Female	0.002†	0.003***	0.002	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)
Family-level variables				
Marital status/Ref: No partner or foreign partner				
Spouse is French native with French parents	0.017***	0.041***	0.017***	0.041***
	(0.003)	(0.004)	(0.005)	(0.005)

(Continued on following page)

TABLE A1 | (*Continued*) Marginal Effects of Naturalizing by Both Tracks (Models 1 and 2)

	Model 1		Model 2	
	Full sample		*Excluding European nationals*	
	Naturalization by decree	**Naturalization by marriage**	**Naturalization by decree**	**Naturalization by marriage**
Spouse is French native with immigrant parent(s)	0.024***	0.029***	0.027***	0.024***
	(0.004)	(0.004)	(0.006)	(0.004)
Spouse is naturalized French	0.059***	0.006***	0.063***	0.006***
	(0.003)	(0.001)	(0.004)	(0.001)
Married before migration	−0.006***	−0.002***	−0.008***	−0.002*
	(0.002)	(0.001)	(0.002)	(0.001)
More than 7 years of age difference between spouses	−0.000	0.000	−0.002	−0.000
	(0.001)	(0.001)	(0.002)	(0.001)
Cumulative number of children born in France	−0.002***	−0.001*	−0.002**	−0.000
	(0.000)	(0.000)	(0.001)	(0.000)
Cumulative number of children born abroad	−0.002*	−0.000	-0.001	-0.000
	(0.001)	(0.000)	(0.001)	(0.000)
R's parents' education/Ref: No education				
Primary or middle	0.005***	−0.000	0.008***	−0.001
	(0.001)	(0.001)	(0.002)	(0.001)
Bac	0.006**	0.000	0.008*	0.001
	(0.002)	(0.001)	(0.003)	(0.001)
University	0.009***	0.000	0.013***	-0.000
	(0.002)	(0.001)	(0.003)	(0.001)
Parents' location/Ref: Parents' not in France or unknown				
Parent(s) arrived in France before R	−0.000	−0.001*	−0.003	−0.002**
	(0.001)	(0.001)	(0.002)	(0.001)
Parent(s) arrived with or after R	0.006***	0.002†	0.006*	0.004*
	(0.002)	(0.001)	(0.003)	(0.002)
Mother or father religious	−0.003	0.000	−0.003	0.001
	(0.002)	(0.001)	(0.003)	(0.002)
Contextual-level variables				
Polity score	−0.004*	−0.004***	0.005	−0.002
	(0.002)	(0.001)	(0.004)	(0.001)
Citizenship loss	−0.002†	0.001	−0.004†	-0.000
	(0.001)	(0.001)	(0.002)	(0.001)
Former colony	0.001	0.002	0.007*	0.004*
	(0.002)	(0.001)	(0.003)	(0.002)
Passport power	−0.013***	0.002	−0.016†	0.001
	(0.003)	(0.002)	(0.009)	(0.004)
Ethnic fractionalization	0.006*	0.000	0.002	0.003
	(0.003)	(0.001)	(0.004)	(0.002)
Observations	100,194	100,194	60,966	60,966

Standard errors in parentheses.
***p < *0.001*, **p < *0.01*, *p < *0.05*, †p < *0.10*

TABLE A2 | Robustness Tests of the Origin of the Spouse Effect

	Basic Model 1		Restricted to respondents who are or were ever married		Heckman probit models	
	Naturalized by decree	**Naturalized by marriage**	**Naturalized by decree**	**Naturalized by marriage**	**Naturalized by decree**	**Naturalized by marriage**
Ref: No partner/foreign partner						
Spouse is French native with French parents	0.792***	3.679***	0.780***	3.425***	0.324***	0.769**
	(0.102)	(0.166)	(0.104)	(0.168)	(0.041)	(0.289)
Spouse is French native with immigrant parent(s)	0.975***	3.312***	0.988***	3.070***	0.429***	0.694**
	(0.118)	(0.187)	(0.119)	(0.186)	(0.051)	(0.258)
Spouse is naturalized French	1.635***	1.839***	1.654***	1.613***	0.747***	0.311*
	(0.059)	(0.191)	(0.059)	(0.188)	(0.029)	(0.129)
N	100,194	100,194	82,348	82,348	100,194	100,194

Robust standard errors in parentheses.

****p < 0.001, **p < 0.01, *p < 0.05, †p < 0.10*

Table shows coefficients. All models control for the same set of covariates included in Model 1. The selection equation of the Heckman probit models predicts whether the respondent is or was ever married and includes the following covariates: year, year squared, generation, language spoken during childhood, educational level, unemployment, gender, and parental education.

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